

LAMPIRAN

Lampiran 1 *Output Software Julia* untuk kasus 1

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At time 0.0: truck50_1 request shovel
At time 0.0: truck20a_1 request shovel
At time 0.0: truck20b_1 request shovel
At time 0.0: truck50_2 request shovel
At time 0.0: truck20a_2 request shovel
At time 0.0: truck20b_2 request shovel
At time 0.0: truck50_3 request shovel
At time 0.0: truck20a_3 request shovel
At time 0.0: truck20b_3 request shovel
At time 0.0: truck50_1 starts loading
At time 0.0: truck50_2 starts loading
At time 0.0: truck50_3 starts loading
At time 1.0655501924352035: truck50_2 stop loading
At time 1.0655501924352035: truck50_2 traveling to crusher
At time 1.0655501924352035: truck20a_2 starts loading
At time 4.065550192435204: truck50_2 request crusher
At time 4.065550192435204: truck50_2 start dumping
At time 4.35222552584646: truck50_2 finished dumping
At time 4.35222552584646: truck50_2 traveling to shovel
At time 6.025201562903684: truck50_1 stop loading
At time 6.025201562903684: truck50_1 traveling to crusher
At time 6.025201562903684: truck20a_1 starts loading
At time 6.35222552584646: truck50_2 request shovel
At time 7.787443235674708: truck20a_1 stop loading
At time 7.787443235674708: truck20a_1 traveling to crusher
At time 7.787443235674708: truck20b_1 starts loading
At time 9.025201562903684: truck50_1 request crusher
At time 9.025201562903684: truck50_1 start dumping
At time 9.635561915911197: truck20b_1 stop loading
At time 9.635561915911197: truck20b_1 traveling to crusher
At time 10.287443235674708: truck20a_1 request crusher
At time 10.287443235674708: truck20a_1 request crusher
At time 11.57209274397608: truck20a_2 stop loading
At time 11.57209274397608: truck20a_2 traveling to crusher
At time 11.57209274397608: truck20b_2 starts loading
At time 12.135561915911197: truck20b_1 request crusher
At time 12.135561915911197: truck20b_1 request crusher
At time 12.569715808103282: truck50_3 stop loading
At time 12.569715808103282: truck50_3 traveling to crusher
At time 12.569715808103282: truck20a_3 starts loading
At time 12.614423642893525: truck20b_2 stop loading
At time 12.614423642893525: truck20b_2 traveling to crusher
At time 12.614423642893525: truck50_2 starts loading
At time 14.07209274397608: truck20a_2 request crusher
At time 14.07209274397608: truck20a_2 request crusher
At time 14.313394950966533: truck50_2 stop loading
At time 14.313394950966533: truck50_2 traveling to crusher
At time 15.114423642893525: truck20b_2 request crusher
At time 15.114423642893525: truck20b_2 request crusher
At time 15.569715808103282: truck50_3 request crusher
At time 15.754836342667186: truck50_1 finished dumping
At time 15.754836342667186: truck50_1 traveling to shovel
At time 15.754836342667186: truck50_3 start dumping
At time 16.26525409719606: truck50_3 finished dumping
At time 16.26525409719606: truck50_3 traveling to shovel
At time 16.26525409719606: truck20a_1 start dumping
At time 17.313394950966533: truck50_2 request crusher
At time 17.754836342667186: truck50_1 request shovel
At time 17.754836342667186: truck50_1 starts loading
At time 18.26525409719606: truck50_3 request shovel
At time 18.435600200911466: truck20a_1 finished dumping
At time 18.435600200911466: truck20a_1 traveling to shovel
At time 18.435600200911466: truck50_2 start dumping
At time 18.821590444776234: truck20a_3 stop loading

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At time 18.821590444776234: truck20a_3 traveling to crusher
 At time 18.821590444776234: truck20b_3 starts loading
 At time 19.254190788915: truck50_2 finished dumping
 At time 19.254190788915: truck50_2 traveling to *shovel*
 At time 19.254190788915: truck20b_1 start dumping
 At time 19.935600200911466: truck20a_1 request *shovel*
 At time 20.029350215650073: truck20b_3 stop loading
 At time 20.029350215650073: truck20b_3 traveling to crusher
 At time 20.029350215650073: truck50_3 starts loading
 At time 20.31281799845205: truck20b_1 finished dumping
 At time 20.31281799845205: truck20b_1 traveling to *shovel*
 At time 20.31281799845205: truck20a_2 start dumping
 At time 21.076799826264143: truck20a_2 finished dumping
 At time 21.076799826264143: truck20a_2 traveling to *shovel*
 At time 21.076799826264143: truck20b_2 start dumping
 At time 21.254190788915: truck50_2 request *shovel*
 At time 21.254190788915: truck50_2 starts loading
 At time 21.321590444776234: truck20a_3 request crusher
 At time 21.321590444776234: truck20a_3 request crusher
 At time 21.542039700848978: truck50_2 stop loading
 At time 21.542039700848978: truck50_2 traveling to crusher
 At time 21.81281799845205: truck20b_1 request *shovel*
 At time 22.529350215650073: truck20b_3 request crusher
 At time 22.529350215650073: truck20b_3 request crusher
 At time 22.576799826264143: truck20a_2 request *shovel*
 At time 22.576799826264143: truck20a_2 starts loading
 At time 24.542039700848978: truck50_2 request crusher
 At time 25.793033497735063: truck50_1 stop loading
 At time 25.793033497735063: truck50_1 traveling to crusher
 At time 25.793033497735063: truck20a_1 starts loading
 At time 26.084737531351784: truck20a_2 stop loading
 At time 26.084737531351784: truck20a_2 traveling to crusher
 At time 26.5450979293218: truck20b_2 finished dumping
 At time 26.5450979293218: truck20b_2 traveling to *shovel*
 At time 26.5450979293218: truck50_2 start dumping
 At time 28.0450979293218: truck20b_2 request *shovel*
 At time 28.0450979293218: truck20b_2 starts loading
 At time 28.1221939069367: truck50_2 finished dumping
 At time 28.1221939069367: truck50_2 traveling to *shovel*
 At time 28.1221939069367: truck20a_3 start dumping
 At time 28.257217017577517: truck20a_3 finished dumping
 At time 28.257217017577517: truck20a_3 traveling to *shovel*
 At time 28.257217017577517: truck20b_3 start dumping
 At time 28.584737531351784: truck20a_2 request crusher
 At time 28.584737531351784: truck20a_2 request crusher
 At time 28.793033497735063: truck50_1 request crusher
 At time 29.757217017577517: truck20a_3 request *shovel*
 At time 30.1221939069367: truck50_2 request *shovel*
 At time 30.79063397272143: truck20b_3 finished dumping
 At time 30.79063397272143: truck20b_3 traveling to *shovel*
 At time 30.79063397272143: truck50_1 start dumping
 At time 31.637792057438404: truck20a_1 stop loading
 At time 31.637792057438404: truck20a_1 traveling to crusher
 At time 31.637792057438404: truck20b_1 starts loading
 At time 31.68133983821685: truck20b_2 stop loading
 At time 31.68133983821685: truck20b_2 traveling to crusher
 At time 31.68133983821685: truck50_2 starts loading
 At time 31.891548860903747: truck20b_1 stop loading
 At time 31.891548860903747: truck20b_1 traveling to crusher
 At time 32.29063397272143: truck20b_3 request *shovel*
 At time 33.02482606054429: truck50_1 finished dumping
 At time 33.02482606054429: truck50_1 traveling to *shovel*
 At time 33.02482606054429: truck20a_2 start dumping
 At time 34.1377920574384: truck20a_1 request crusher
 At time 34.1377920574384: truck20a_1 request crusher
 At time 34.18133983821685: truck20b_2 request crusher
 At time 34.18133983821685: truck20b_2 request crusher
 At time 34.21227595368816: truck20a_2 finished dumping
 At time 34.21227595368816: truck20a_2 traveling to *shovel*
 At time 34.21227595368816: truck20a_1 start dumping
 At time 34.36064993091278: truck50_3 stop loading

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At time 34.36064993091278: truck50_3 traveling to crusher
 At time 34.36064993091278: truck20a_3 starts loading
 At time 34.39154886090375: truck20b_1 request crusher
 At time 34.39154886090375: truck20b_1 request crusher
 At time 35.02482606054429: truck50_1 request shovel
 At time 35.02482606054429: truck50_1 starts loading
 At time 35.71227595368816: truck20a_2 request shovel
 At time 35.792590642438185: truck50_2 stop loading
 At time 35.792590642438185: truck50_2 traveling to crusher
 At time 35.792590642438185: truck20a_2 starts loading
 At time 35.9667935938874: truck20a_1 finished dumping
 At time 35.9667935938874: truck20a_1 traveling to shovel
 At time 35.9667935938874: truck20b_2 start dumping
 At time 37.36064993091278: truck50_3 request crusher
 At time 37.4667935938874: truck20a_1 request shovel
 At time 37.57977642011483: truck20b_2 finished dumping
 At time 37.57977642011483: truck20b_2 traveling to shovel
 At time 37.57977642011483: truck50_3 start dumping
 At time 38.792590642438185: truck50_2 request crusher
 At time 39.07977642011483: truck20b_2 request shovel
 At time 39.87187210694298: truck20a_2 stop loading
 At time 39.87187210694298: truck20a_2 traveling to crusher
 At time 39.87187210694298: truck20b_2 starts loading
 At time 40.78093381292863: truck20a_3 stop loading
 At time 40.78093381292863: truck20a_3 traveling to crusher
 At time 40.78093381292863: truck20b_3 starts loading
 At time 40.855545679201036: truck20b_2 stop loading
 At time 40.855545679201036: truck20b_2 traveling to crusher
 At time 41.392545825725136: truck50_3 finished dumping
 At time 41.392545825725136: truck50_3 traveling to shovel
 At time 41.392545825725136: truck50_2 start dumping
 At time 41.87145681892961: truck20b_3 stop loading
 At time 41.87145681892961: truck20b_3 traveling to crusher
 At time 42.37187210694298: truck20a_2 request crusher
 At time 42.37187210694298: truck20a_2 request crusher
 At time 43.28093381292863: truck20a_3 request crusher
 At time 43.28093381292863: truck20a_3 request crusher
 At time 43.355545679201036: truck20b_2 request crusher
 At time 43.355545679201036: truck20b_2 request crusher
 At time 43.392545825725136: truck50_3 request shovel
 At time 43.392545825725136: truck50_3 starts loading
 At time 44.37145681892961: truck20b_3 request crusher
 At time 44.37145681892961: truck20b_3 request crusher
 At time 45.035796384649665: truck50_2 finished dumping
 At time 45.035796384649665: truck50_2 traveling to shovel
 At time 45.035796384649665: truck20b_1 start dumping
 At time 45.534130699015904: truck20b_1 finished dumping
 At time 45.534130699015904: truck20b_1 traveling to shovel
 At time 45.534130699015904: truck20a_2 start dumping
 At time 46.25108797177192: truck20a_2 finished dumping
 At time 46.25108797177192: truck20a_2 traveling to shovel
 At time 46.25108797177192: truck20a_3 start dumping
 At time 46.78343713612673: truck20a_3 finished dumping
 At time 46.78343713612673: truck20a_3 traveling to shovel
 At time 46.78343713612673: truck20b_2 start dumping
 At time 47.034130699015904: truck20b_1 request shovel
 At time 47.035796384649665: truck50_2 request shovel
 At time 47.035796384649665: truck50_2 starts loading
 At time 47.75108797177192: truck20a_2 request shovel
 At time 48.28343713612673: truck20a_3 request shovel
 At time 49.54751120427764: truck20b_2 finished dumping
 At time 49.54751120427764: truck20b_2 traveling to shovel
 At time 49.54751120427764: truck20b_3 start dumping
 At time 50.949929753741074: truck20b_3 finished dumping
 At time 50.949929753741074: truck20b_3 traveling to shovel
 At time 51.04751120427764: truck20b_2 request shovel
 At time 52.449929753741074: truck20b_3 request shovel
 At time 56.33517301344436: truck50_2 stop loading
 At time 56.33517301344436: truck50_2 traveling to crusher
 At time 56.33517301344436: truck20a_2 starts loading

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At time 56.71056966104811: truck20a_2 stop loading
 At time 56.71056966104811: truck20a_2 traveling to crusher
 At time 56.71056966104811: truck20b_2 starts loading
 At time 59.21056966104811: truck20a_2 request crusher
 At time 59.21056966104811: truck20a_2 request crusher
 At time 59.21056966104811: truck20a_2 start dumping
 At time 59.33517301344436: truck50_2 request crusher
 At time 61.05280343394721: truck20a_2 finished dumping
 At time 61.05280343394721: truck20a_2 traveling to shovel
 At time 61.05280343394721: truck50_2 start dumping
 At time 61.31923122936804: truck20b_2 stop loading
 At time 61.31923122936804: truck20b_2 traveling to crusher
 At time 62.55280343394721: truck20a_2 request shovel
 At time 62.55280343394721: truck20a_2 starts loading
 At time 63.262483799267685: truck50_3 stop loading
 At time 63.262483799267685: truck50_3 traveling to crusher
 At time 63.262483799267685: truck20a_3 starts loading
 At time 63.81923122936804: truck20b_2 request crusher
 At time 63.81923122936804: truck20b_2 request crusher
 At time 66.26248379926768: truck50_3 request crusher
 At time 66.50394431239677: truck50_2 finished dumping
 At time 66.50394431239677: truck50_2 traveling to shovel
 At time 66.50394431239677: truck50_3 start dumping
 At time 67.3728368859688: truck20a_3 stop loading
 At time 67.3728368859688: truck20a_3 traveling to crusher
 At time 67.3728368859688: truck20b_3 starts loading
 At time 68.50394431239677: truck50_2 request shovel
 At time 69.60947811189456: truck20b_3 stop loading
 At time 69.60947811189456: truck20b_3 traveling to crusher
 At time 69.8728368859688: truck20a_3 request crusher
 At time 69.8728368859688: truck20a_3 request crusher
 At time 69.89736959244041: truck50_3 finished dumping
 At time 69.89736959244041: truck50_3 traveling to shovel
 At time 69.89736959244041: truck20b_2 start dumping
 At time 70.2145526288518: truck50_1 stop loading
 At time 70.2145526288518: truck50_1 traveling to crusher
 At time 70.2145526288518: truck20a_1 starts loading
 At time 70.6816063878444: truck20b_2 finished dumping
 At time 70.6816063878444: truck20b_2 traveling to shovel
 At time 70.6816063878444: truck20a_3 start dumping
 At time 71.7705915158534: truck20a_3 finished dumping
 At time 71.7705915158534: truck20a_3 traveling to shovel
 At time 71.89736959244041: truck50_3 request shovel
 At time 71.89736959244041: truck50_3 starts loading
 At time 72.09957491812034: truck20a_2 stop loading
 At time 72.09957491812034: truck20a_2 traveling to crusher
 At time 72.09957491812034: truck50_2 starts loading
 At time 72.10947811189456: truck20b_3 request crusher
 At time 72.10947811189456: truck20b_3 request crusher
 At time 72.10947811189456: truck20b_3 start dumping
 At time 72.1816063878444: truck20b_2 request shovel
 At time 73.2145526288518: truck50_1 request crusher
 At time 73.2705915158534: truck20a_3 request shovel
 At time 73.62026442125708: truck20a_1 stop loading
 At time 73.62026442125708: truck20a_1 traveling to crusher
 At time 73.62026442125708: truck20b_1 starts loading
 At time 74.59957491812034: truck20a_2 request crusher
 At time 74.59957491812034: truck20a_2 request crusher
 At time 74.60148485071524: truck20b_1 stop loading
 At time 74.60148485071524: truck20b_1 traveling to crusher
 At time 74.93108824048582: truck20b_3 finished dumping
 At time 74.93108824048582: truck20b_3 traveling to shovel
 At time 74.93108824048582: truck50_1 start dumping
 At time 76.12026442125708: truck20a_1 request crusher
 At time 76.12026442125708: truck20a_1 request crusher
 At time 76.43108824048582: truck20b_3 request shovel
 At time 76.78586443745853: truck50_1 finished dumping
 At time 76.78586443745853: truck50_1 traveling to shovel
 At time 76.78586443745853: truck20a_2 start dumping
 At time 77.10148485071524: truck20b_1 request crusher

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At time 77.10148485071524: truct20b_1 request crusher
 At time 78.17720888890379: truck50_3 stop loading
 At time 78.17720888890379: truck50_3 traveling to crusher
 At time 78.17720888890379: truck20a_3 starts loading
 At time 78.78586443745853: truck50_1 request shovel
 At time 78.78586443745853: truck50_1 starts loading
 At time 79.72714890684912: truck50_2 stop loading
 At time 79.72714890684912: truck50_2 traveling to crusher
 At time 79.72714890684912: truck20b_2 starts loading
 At time 79.93694424859405: truck20a_2 finished dumping
 At time 79.93694424859405: truck20a_2 traveling to shovel
 At time 79.93694424859405: truct20a_1 start dumping
 At time 80.14539231570373: truck20b_2 stop loading
 At time 80.14539231570373: truck20b_2 traveling to crusher
 At time 80.38776769376634: truct20a_1 finished dumping
 At time 80.38776769376634: truct20a_1 traveling to shovel
 At time 80.38776769376634: truck20b_1 start dumping
 At time 81.06953012620616: truck20a_3 stop loading
 At time 81.06953012620616: truck20a_3 traveling to crusher
 At time 81.06953012620616: truck20b_3 starts loading
 At time 81.17720888890379: truck50_3 request crusher
 At time 81.43694424859405: truck20a_2 request shovel
 At time 81.43694424859405: truck20a_2 starts loading
 At time 81.62378279756399: truck20b_1 finished dumping
 At time 81.62378279756399: truck20b_1 traveling to shovel
 At time 81.62378279756399: truck50_3 start dumping
 At time 81.88776769376634: truck20a_1 request shovel
 At time 82.64539231570373: truck20b_2 request crusher
 At time 82.64539231570373: truck20b_2 request crusher
 At time 82.72714890684912: truck50_2 request crusher
 At time 83.12378279756399: truck20b_1 request shovel
 At time 83.36553635932452: truck20b_3 stop loading
 At time 83.36553635932452: truck20b_3 traveling to crusher
 At time 83.56953012620616: truck20a_3 request crusher
 At time 83.56953012620616: truck20a_3 request crusher
 At time 84.05099569200998: truck20a_2 stop loading
 At time 84.05099569200998: truck20a_2 traveling to crusher
 At time 85.86553635932452: truck20b_3 request crusher
 At time 85.86553635932452: truck20b_3 request crusher
 At time 86.21886364877336: truck50_3 finished dumping
 At time 86.21886364877336: truck50_3 traveling to shovel
 At time 86.21886364877336: truck50_2 start dumping
 At time 86.55099569200998: truck20a_2 request crusher
 At time 86.55099569200998: truck20a_2 request crusher
 At time 88.21886364877336: truck50_3 request shovel
 At time 88.21886364877336: truck50_3 starts loading
 At time 90.83740254734946: truck50_2 finished dumping
 At time 90.83740254734946: truck50_2 traveling to shovel
 At time 90.83740254734946: truck20b_2 start dumping
 At time 91.39675294099102: truck20b_2 finished dumping
 At time 91.39675294099102: truck20b_2 traveling to shovel
 At time 91.39675294099102: truck20a_3 start dumping
 At time 92.63671363098268: truck50_3 stop loading
 At time 92.63671363098268: truck50_3 traveling to crusher
 At time 92.83740254734946: truck50_2 request shovel
 At time 92.83740254734946: truck50_2 starts loading
 At time 92.89675294099102: truck20b_2 request shovel
 At time 95.01814647211752: truck20a_3 finished dumping
 At time 95.01814647211752: truck20a_3 traveling to shovel
 At time 95.01814647211752: truck20b_3 start dumping
 At time 95.63671363098268: truck50_3 request crusher
 At time 96.51814647211752: truck20a_3 request shovel
 At time 96.51814647211752: truck20a_3 starts loading
 At time 98.61156542902263: truck20a_3 stop loading
 At time 98.61156542902263: truck20a_3 traveling to crusher
 At time 101.04026394829074: truck20b_3 finished dumping
 At time 101.04026394829074: truck20b_3 traveling to shovel
 At time 101.04026394829074: truck50_3 start dumping
 At time 101.11156542902263: truck20a_3 request crusher
 At time 101.11156542902263: truck20a_3 request crusher
 At time 102.54026394829074: truck20b_3 request shovel

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At time 102.54026394829074: truck20b_3 starts loading
 At time 104.92044376743077: truck20b_3 stop loading
 At time 104.92044376743077: truck20b_3 traveling to crusher
 At time 107.42044376743077: truck20b_3 request crusher
 At time 107.42044376743077: truck20b_3 request crusher
 At time 107.93934578009527: truck50_1 stop loading
 At time 107.93934578009527: truck50_1 traveling to crusher
 At time 107.93934578009527: truck20a_1 starts loading
 At time 109.23478416071778: truck20a_1 stop loading
 At time 109.23478416071778: truck20a_1 traveling to crusher
 At time 109.23478416071778: truck20b_1 starts loading
 At time 109.5788724720318: truck50_3 finished dumping
 At time 109.5788724720318: truck50_3 traveling to shovel
 At time 109.5788724720318: truck20a_2 start dumping
 At time 110.64164457630307: truck50_2 stop loading
 At time 110.64164457630307: truck50_2 traveling to crusher
 At time 110.64164457630307: truck20b_2 starts loading
 At time 110.93934578009527: truck50_1 request crusher
 At time 111.5788724720318: truck50_3 request shovel
 At time 111.5788724720318: truck50_3 starts loading
 At time 111.73478416071778: truck20a_1 request crusher
 At time 111.73478416071778: truck20a_1 request crusher
 At time 112.01576821905839: truck20a_2 finished dumping
 At time 112.01576821905839: truck20a_2 traveling to shovel
 At time 112.01576821905839: truck50_1 start dumping
 At time 113.51576821905839: truck20a_2 request shovel
 At time 113.64164457630307: truck50_2 request crusher
 At time 113.9483840078194: truck20b_1 stop loading
 At time 113.9483840078194: truck20b_1 traveling to crusher
 At time 114.05458859694687: truck50_1 finished dumping
 At time 114.05458859694687: truck50_1 traveling to shovel
 At time 114.05458859694687: truck50_2 start dumping
 At time 114.46733412789185: truck50_2 finished dumping
 At time 114.46733412789185: truck50_2 traveling to shovel
 At time 114.46733412789185: truck20a_3 start dumping
 At time 116.05458859694687: truck50_1 request shovel
 At time 116.05458859694687: truck50_1 starts loading
 At time 116.4483840078194: truck20b_1 request crusher
 At time 116.4483840078194: truck20b_1 request crusher
 At time 116.46733412789185: truck50_2 request shovel
 At time 117.93530418155574: truck20a_3 finished dumping
 At time 117.93530418155574: truck20a_3 traveling to shovel
 At time 117.93530418155574: truck20b_3 start dumping
 At time 118.19865338890986: truck50_1 stop loading
 At time 118.19865338890986: truck50_1 traveling to crusher
 At time 119.43530418155574: truck20a_3 request shovel
 At time 119.85134608235958: truck50_3 stop loading
 At time 119.85134608235958: truck50_3 traveling to crusher
 At time 119.85134608235958: truck20a_3 starts loading
 At time 120.511738246746: truck20b_3 finished dumping
 At time 120.511738246746: truck20b_3 traveling to shovel
 At time 120.511738246746: truck20a_1 start dumping
 At time 120.57108665950403: truck20a_1 finished dumping
 At time 120.57108665950403: truck20a_1 traveling to shovel
 At time 120.57108665950403: truck20b_1 start dumping
 At time 121.18400164346237: truck20b_2 stop loading
 At time 121.18400164346237: truck20b_2 traveling to crusher
 At time 121.18400164346237: truck20a_2 starts loading
 At time 121.19865338890986: truck50_1 request crusher
 At time 121.6875709688753: truck20a_3 stop loading
 At time 121.6875709688753: truck20a_3 traveling to crusher
 At time 121.9121658009647: truck20b_1 finished dumping
 At time 121.9121658009647: truck20b_1 traveling to shovel
 At time 121.9121658009647: truck50_1 start dumping
 At time 122.011738246746: truck20b_3 request shovel
 At time 122.011738246746: truck20b_3 starts loading
 At time 122.07108665950403: truck20a_1 request shovel
 At time 122.07108665950403: truck20a_1 starts loading
 At time 122.46791203432237: truck20a_1 stop loading
 At time 122.46791203432237: truck20a_1 traveling to crusher
 At time 122.60996684470385: truck50_1 finished dumping

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At time 122.60996684470385: truck50_1 traveling to *shovel*
 At time 122.85134608235958: truck50_3 request crusher
 At time 122.85134608235958: truck50_3 start dumping
 At time 123.03065746018558: truck20a_2 stop loading
 At time 123.03065746018558: truck20a_2 traveling to crusher
 At time 123.03065746018558: truck50_2 starts loading
 At time 123.4121658009647: truct20b_1 request *shovel*
 At time 123.4121658009647: truct20b_1 starts loading
 At time 123.44023312116455: truck50_3 finished dumping
 At time 123.44023312116455: truck50_3 traveling to *shovel*
 At time 123.68400164346237: truck20b_2 request crusher
 At time 123.68400164346237: truck20b_2 request crusher
 At time 123.68400164346237: truck20b_2 start dumping
 At time 124.14286650449463: truck20b_2 finished dumping
 At time 124.14286650449463: truck20b_2 traveling to *shovel*
 At time 124.1875709688753: truck20a_3 request crusher
 At time 124.1875709688753: truck20a_3 request crusher
 At time 124.1875709688753: truck20a_3 start dumping
 At time 124.60996684470385: truck50_1 request *shovel*
 At time 124.96791203432237: truct20a_1 request crusher
 At time 124.96791203432237: truct20a_1 request crusher
 At time 125.44023312116455: truck50_3 request *shovel*
 At time 125.53065746018558: truck20a_2 request crusher
 At time 125.53065746018558: truck20a_2 request crusher
 At time 125.64286650449463: truck20b_2 request *shovel*
 At time 126.61233738401131: truck20a_3 finished dumping
 At time 126.61233738401131: truck20a_3 traveling to *shovel*
 At time 126.61233738401131: truct20a_1 start dumping
 At time 127.11049327719064: truct20b_1 stop loading
 At time 127.11049327719064: truct20b_1 traveling to crusher
 At time 127.11049327719064: truck50_1 starts loading
 At time 128.1123373840113: truck20a_3 request *shovel*
 At time 128.89604642092206: truck50_1 stop loading
 At time 128.89604642092206: truck50_1 traveling to crusher
 At time 129.61049327719064: truct20b_1 request crusher
 At time 129.61049327719064: truct20b_1 request crusher
 At time 131.89604642092206: truck50_1 request crusher
 At time 134.1820895836834: truct20a_1 finished dumping
 At time 134.1820895836834: truct20a_1 traveling to *shovel*
 At time 134.1820895836834: truck50_1 start dumping
 At time 134.20238521785126: truck50_1 finished dumping
 At time 134.20238521785126: truck50_1 traveling to *shovel*
 At time 134.20238521785126: truck20a_2 start dumping
 At time 134.67392259501747: truck20a_2 finished dumping
 At time 134.67392259501747: truck20a_2 traveling to *shovel*
 At time 134.67392259501747: truct20b_1 start dumping
 At time 134.8178819533597: truct20b_1 finished dumping
 At time 134.8178819533597: truct20b_1 traveling to *shovel*
 At time 135.6820895836834: truct20a_1 request *shovel*
 At time 135.6820895836834: truct20a_1 starts loading
 At time 136.17392259501747: truck20a_2 request *shovel*
 At time 136.20238521785126: truck50_1 request *shovel*
 At time 136.3178819533597: truct20b_1 request *shovel*
 At time 139.71232185959795: truct20a_1 stop loading
 At time 139.71232185959795: truct20a_1 traveling to crusher
 At time 139.71232185959795: truck50_1 starts loading
 At time 139.9376858909952: truck50_1 stop loading
 At time 139.9376858909952: truck50_1 traveling to crusher
 At time 139.9376858909952: truct20b_1 starts loading
 At time 140.657788021658: truck50_2 stop loading
 At time 140.657788021658: truck50_2 traveling to crusher
 At time 140.657788021658: truck20b_2 starts loading
 At time 141.22208524213687: truck20b_2 stop loading
 At time 141.22208524213687: truck20b_2 traveling to crusher
 At time 141.22208524213687: truck20a_2 starts loading
 At time 142.21232185959795: truct20a_1 request crusher
 At time 142.21232185959795: truct20a_1 request crusher
 At time 142.21232185959795: truct20a_1 start dumping
 At time 142.5735650083086: truck20b_3 stop loading
 At time 142.5735650083086: truck20b_3 traveling to crusher
 At time 142.5735650083086: truck50_3 starts loading

At time 142.85501287087152: truct20b_1 stop loading
 At time 142.85501287087152: truct20b_1 traveling to crusher
 At time 142.9376858909952: truck50_1 request crusher
 At time 143.657788021658: truck50_2 request crusher
 At time 143.72208524213687: truck20b_2 request crusher
 At time 143.72208524213687: truck20b_2 request crusher
 At time 144.15503319396666: truct20a_1 finished dumping
 At time 144.15503319396666: truct20a_1 traveling to shovel
 At time 144.15503319396666: truck50_1 start dumping
 At time 144.29290631743524: truck20a_2 stop loading
 At time 144.29290631743524: truck20a_2 traveling to crusher
 At time 145.0735650083086: truck20b_3 request crusher
 At time 145.0735650083086: truck20b_3 request crusher
 At time 145.35501287087152: truct20b_1 request crusher
 At time 145.35501287087152: truct20b_1 request crusher
 At time 145.65503319396666: truct20a_1 request shovel
 At time 145.65503319396666: truct20a_1 starts loading
 At time 146.79290631743524: truck20a_2 request crusher
 At time 146.79290631743524: truck20a_2 request crusher
 At time 149.16981000473916: truct20a_1 stop loading
 At time 149.16981000473916: truct20a_1 traveling to crusher
 At time 149.45848445872335: truck50_1 finished dumping
 At time 149.45848445872335: truck50_1 traveling to shovel
 At time 149.45848445872335: truck50_2 start dumping
 At time 151.45848445872335: truck50_1 request shovel
 At time 151.45848445872335: truck50_1 starts loading
 At time 151.66981000473916: truct20a_1 request crusher
 At time 151.66981000473916: truct20a_1 request crusher
 At time 152.33299016763692: truck50_2 finished dumping
 At time 152.33299016763692: truck50_2 traveling to shovel
 At time 152.33299016763692: truck20b_2 start dumping
 At time 153.75985356692905: truck20b_2 finished dumping
 At time 153.75985356692905: truck20b_2 traveling to shovel
 At time 153.75985356692905: truck20b_3 start dumping
 At time 154.33299016763692: truck50_2 request shovel
 At time 154.33299016763692: truck50_2 starts loading
 At time 154.663393684536: truck20b_3 finished dumping
 At time 154.663393684536: truck20b_3 traveling to shovel
 At time 154.663393684536: truck20b_1 start dumping
 At time 155.25985356692905: truck20b_2 request shovel
 At time 155.91945134098015: truck50_1 stop loading
 At time 155.91945134098015: truck50_1 traveling to crusher
 At time 156.163393684536: truck20b_3 request shovel
 At time 156.2651899179669: truct20b_1 finished dumping
 At time 156.2651899179669: truct20b_1 traveling to shovel
 At time 156.2651899179669: truck20a_2 start dumping
 At time 157.7651899179669: truct20b_1 request shovel
 At time 157.7651899179669: truct20b_1 starts loading
 At time 158.7899444977159: truck20a_2 finished dumping
 At time 158.7899444977159: truck20a_2 traveling to shovel
 At time 158.7899444977159: truct20a_1 start dumping
 At time 158.91945134098015: truck50_1 request crusher
 At time 159.2309135021516: truct20a_1 finished dumping
 At time 159.2309135021516: truct20a_1 traveling to shovel
 At time 159.2309135021516: truck50_1 start dumping
 At time 160.14937821189335: truck50_1 finished dumping
 At time 160.14937821189335: truck50_1 traveling to shovel
 At time 160.2899444977159: truck20a_2 request shovel
 At time 160.7309135021516: truct20a_1 request shovel
 At time 162.14937821189335: truck50_1 request shovel
 At time 165.57369153951527: truck50_3 stop loading
 At time 165.57369153951527: truck50_3 traveling to crusher
 At time 165.57369153951527: truck20a_3 starts loading
 At time 166.99458126652948: truct20b_1 stop loading
 At time 166.99458126652948: truct20b_1 traveling to crusher
 At time 166.99458126652948: truct20a_1 starts loading
 At time 168.57369153951527: truck50_3 request crusher
 At time 168.57369153951527: truck50_3 start dumping
 At time 169.49458126652948: truct20b_1 request crusher
 At time 169.49458126652948: truct20b_1 request crusher
 At time 169.54381646133987: truck50_2 stop loading

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At time 169.54381646133987: truck50_2 traveling to crusher
 At time 169.54381646133987: truck20b_2 starts loading
 At time 169.7681119545634: truck50_3 finished dumping
 At time 169.7681119545634: truck50_3 traveling to shovel
 At time 169.7681119545634: truck20b_1 start dumping
 At time 170.75302515340718: truck20b_1 finished dumping
 At time 170.75302515340718: truck20b_1 traveling to shovel
 At time 171.7681119545634: truck50_3 request shovel
 At time 172.25302515340718: truck20b_1 request shovel
 At time 172.54381646133987: truck50_2 request crusher
 At time 172.54381646133987: truck50_2 start dumping
 At time 172.71420311555678: truck20b_2 stop loading
 At time 172.71420311555678: truck20b_2 traveling to crusher
 At time 172.71420311555678: truck20a_2 starts loading
 At time 173.40126367063115: truck20a_3 stop loading
 At time 173.40126367063115: truck20a_3 traveling to crusher
 At time 173.40126367063115: truck20b_3 starts loading
 At time 174.16464360082549: truck20a_2 stop loading
 At time 174.16464360082549: truck20a_2 traveling to crusher
 At time 174.60811947823643: truck50_2 finished dumping
 At time 174.60811947823643: truck50_2 traveling to shovel
 At time 175.21420311555678: truck20b_2 request crusher
 At time 175.21420311555678: truck20b_2 request crusher
 At time 175.21420311555678: truck20b_2 start dumping
 At time 175.33511705482056: truck20a_1 stop loading
 At time 175.33511705482056: truck20a_1 traveling to crusher
 At time 175.33511705482056: truck50_1 starts loading
 At time 175.7607667671425: truck20b_2 finished dumping
 At time 175.7607667671425: truck20b_2 traveling to shovel
 At time 175.90126367063115: truck20a_3 request crusher
 At time 175.90126367063115: truck20a_3 request crusher
 At time 175.90126367063115: truck20a_3 start dumping
 At time 176.40366332816313: truck20b_3 stop loading
 At time 176.40366332816313: truck20b_3 traveling to crusher
 At time 176.40366332816313: truck50_3 starts loading
 At time 176.60811947823643: truck50_2 request shovel
 At time 176.60811947823643: truck50_2 starts loading
 At time 176.66464360082549: truck20a_2 request crusher
 At time 176.66464360082549: truck20a_2 request crusher
 At time 176.73981463117582: truck50_1 stop loading
 At time 176.73981463117582: truck50_1 traveling to crusher
 At time 176.73981463117582: truck20b_1 starts loading
 At time 176.97129244853326: truck50_2 stop loading
 At time 176.97129244853326: truck50_2 traveling to crusher
 At time 177.2607667671425: truck20b_2 request shovel
 At time 177.2607667671425: truck20b_2 starts loading
 At time 177.83511705482056: truck20a_1 request crusher
 At time 177.83511705482056: truck20a_1 request crusher
 At time 178.164094472257: truck20b_2 stop loading
 At time 178.164094472257: truck20b_2 traveling to crusher
 At time 178.90366332816313: truck20b_3 request crusher
 At time 178.90366332816313: truck20b_3 request crusher
 At time 179.73981463117582: truck50_1 request crusher
 At time 179.79244312148177: truck20a_3 finished dumping
 At time 179.79244312148177: truck20a_3 traveling to shovel
 At time 179.79244312148177: truck50_1 start dumping
 At time 179.97129244853326: truck50_2 request crusher
 At time 180.51329133570314: truck20b_1 stop loading
 At time 180.51329133570314: truck20b_1 traveling to crusher
 At time 180.5668721519566: truck50_1 finished dumping
 At time 180.5668721519566: truck50_1 traveling to shovel
 At time 180.5668721519566: truck50_2 start dumping
 At time 180.664094472257: truck20b_2 request crusher
 At time 180.664094472257: truck20b_2 request crusher
 At time 181.12109062620914: truck50_2 finished dumping
 At time 181.12109062620914: truck50_2 traveling to shovel
 At time 181.12109062620914: truck20a_2 start dumping
 At time 181.29244312148177: truck20a_3 request shovel
 At time 182.5668721519566: truck50_1 request shovel
 At time 182.5668721519566: truck50_1 starts loading
 At time 183.00191434290957: truck50_3 stop loading

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At time 183.00191434290957: truck50_3 traveling to crusher
 At time 183.00191434290957: truck20a_3 starts loading
 At time 183.01329133570314: truck20b_1 request crusher
 At time 183.01329133570314: truck20b_1 request crusher
 At time 183.12109062620914: truck50_2 request shovel
 At time 183.12109062620914: truck50_2 starts loading
 At time 183.75195166594702: truck20a_2 finished dumping
 At time 183.75195166594702: truck20a_2 traveling to shovel
 At time 183.75195166594702: truck20a_1 start dumping
 At time 185.25195166594702: truck20a_2 request shovel
 At time 185.610346362291: truck50_1 stop loading
 At time 185.610346362291: truck50_1 traveling to crusher
 At time 185.7639131659145: truck50_2 stop loading
 At time 185.7639131659145: truck50_2 traveling to crusher
 At time 185.7639131659145: truck20a_2 starts loading
 At time 186.00191434290957: truck50_3 request crusher
 At time 186.64876702021132: truck20a_2 stop loading
 At time 186.64876702021132: truck20a_2 traveling to crusher
 At time 188.38746875467504: truck20a_1 finished dumping
 At time 188.38746875467504: truck20a_1 traveling to shovel
 At time 188.38746875467504: truck50_3 start dumping
 At time 188.610346362291: truck50_1 request crusher
 At time 188.7639131659145: truck50_2 request crusher
 At time 189.14876702021132: truck20a_2 request crusher
 At time 189.14876702021132: truck20a_2 request crusher
 At time 189.88746875467504: truck20a_1 request shovel
 At time 189.88746875467504: truck20a_1 starts loading
 At time 192.4528604756736: truck20a_1 stop loading
 At time 192.4528604756736: truck20a_1 traveling to crusher
 At time 192.7304221499031: truck20a_3 stop loading
 At time 192.7304221499031: truck20a_3 traveling to crusher
 At time 194.9528604756736: truck20a_1 request crusher
 At time 194.9528604756736: truck20a_1 request crusher
 At time 195.2304221499031: truck20a_3 request crusher
 At time 195.2304221499031: truck20a_3 request crusher
 At time 206.9019969161908: truck50_3 finished dumping
 At time 206.9019969161908: truck50_3 traveling to shovel
 At time 206.9019969161908: truck50_1 start dumping
 At time 208.9019969161908: truck50_3 request shovel
 At time 208.9019969161908: truck50_3 starts loading
 At time 209.42369830530845: truck50_1 finished dumping
 At time 209.42369830530845: truck50_1 traveling to shovel
 At time 209.42369830530845: truck50_2 start dumping
 At time 211.42369830530845: truck50_1 request shovel
 At time 211.42369830530845: truck50_1 starts loading
 At time 212.68105965215335: truck50_2 finished dumping
 At time 212.68105965215335: truck50_2 traveling to shovel
 At time 212.68105965215335: truck20b_3 start dumping
 At time 213.45058565096238: truck50_1 stop loading
 At time 213.45058565096238: truck50_1 traveling to crusher
 At time 214.68105965215335: truck50_2 request shovel
 At time 214.68105965215335: truck50_2 starts loading
 At time 216.45058565096238: truck50_1 request crusher
 At time 216.64434279420945: truck20b_3 finished dumping
 At time 216.64434279420945: truck20b_3 traveling to shovel
 At time 216.64434279420945: truck50_1 start dumping
 At time 218.14434279420945: truck20b_3 request shovel
 At time 218.80559718649917: truck50_1 finished dumping
 At time 218.80559718649917: truck50_1 traveling to shovel
 At time 218.80559718649917: truck20b_2 start dumping
 At time 218.82061852197535: truck20b_2 finished dumping
 At time 218.82061852197535: truck20b_2 traveling to shovel
 At time 218.82061852197535: truck20b_1 start dumping
 At time 220.16608907341939: truck20b_1 finished dumping
 At time 220.16608907341939: truck20b_1 traveling to shovel
 At time 220.16608907341939: truck20a_2 start dumping
 At time 220.32061852197535: truck20b_2 request shovel
 At time 220.80559718649917: truck50_1 request shovel
 At time 220.80559718649917: truck50_1 starts loading
 At time 221.3228284759001: truck50_2 stop loading
 At time 221.3228284759001: truck50_2 traveling to crusher

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At time 221.3228284759001: truck20b_2 starts loading
 At time 221.66608907341939: truck20b_1 request shovel
 At time 223.50332479042785: truck20a_2 finished dumping
 At time 223.50332479042785: truck20a_2 traveling to shovel
 At time 223.50332479042785: truck20a_1 start dumping
 At time 223.88328002120454: truck20b_2 stop loading
 At time 223.88328002120454: truck20b_2 traveling to crusher
 At time 224.2615780400599: truck20a_1 finished dumping
 At time 224.2615780400599: truck20a_1 traveling to shovel
 At time 224.2615780400599: truck20a_3 start dumping
 At time 224.3228284759001: truck50_2 request crusher
 At time 225.00332479042785: truck20a_2 request shovel
 At time 225.00332479042785: truck20a_2 starts loading
 At time 225.7615780400599: truck20a_1 request shovel
 At time 225.86815935847045: truck50_1 stop loading
 At time 225.86815935847045: truck50_1 traveling to crusher
 At time 225.86815935847045: truck20b_1 starts loading
 At time 226.38328002120454: truck20b_2 request crusher
 At time 226.38328002120454: truck20b_2 request crusher
 At time 226.90944742046875: truck20a_2 stop loading
 At time 226.90944742046875: truck20a_2 traveling to crusher
 At time 228.86815935847045: truck50_1 request crusher
 At time 229.3999092455379: truck20b_1 stop loading
 At time 229.3999092455379: truck20b_1 traveling to crusher
 At time 229.3999092455379: truck20a_1 starts loading
 At time 229.40944742046875: truck20a_2 request crusher
 At time 229.40944742046875: truck20a_2 request crusher
 At time 231.8999092455379: truck20b_1 request crusher
 At time 231.8999092455379: truck20b_1 request crusher
 At time 232.05197087296273: truck20a_1 stop loading
 At time 232.05197087296273: truck20a_1 traveling to crusher
 At time 233.40807529880888: truck20a_3 finished dumping
 At time 233.40807529880888: truck20a_3 traveling to shovel
 At time 233.40807529880888: truck50_2 start dumping
 At time 234.55197087296273: truck20a_1 request crusher
 At time 234.55197087296273: truck20a_1 request crusher
 At time 234.65792762594182: truck50_2 finished dumping
 At time 234.65792762594182: truck50_2 traveling to shovel
 At time 234.65792762594182: truck50_1 start dumping
 At time 234.90807529880888: truck20a_3 request shovel
 At time 236.65792762594182: truck50_2 request shovel
 At time 236.65792762594182: truck50_2 starts loading
 At time 237.9729717993018: truck50_1 finished dumping
 At time 237.9729717993018: truck50_1 traveling to shovel
 At time 237.9729717993018: truck20b_2 start dumping
 At time 239.64520488051267: truck20b_2 finished dumping
 At time 239.64520488051267: truck20b_2 traveling to shovel
 At time 239.64520488051267: truck20a_2 start dumping
 At time 239.9729717993018: truck50_1 request shovel
 At time 239.9729717993018: truck50_1 starts loading
 At time 240.4159669888176: truck20a_2 finished dumping
 At time 240.4159669888176: truck20a_2 traveling to shovel
 At time 240.4159669888176: truck20b_1 start dumping
 At time 241.05103068605447: truck50_2 stop loading
 At time 241.05103068605447: truck50_2 traveling to crusher
 At time 241.14520488051267: truck20b_2 request shovel
 At time 241.14520488051267: truck20b_2 starts loading
 At time 241.9159669888176: truck20a_2 request shovel
 At time 243.54702895117634: truck50_1 stop loading
 At time 243.54702895117634: truck50_1 traveling to crusher
 At time 244.05103068605447: truck50_2 request crusher
 At time 244.4518908375516: truck20b_1 finished dumping
 At time 244.4518908375516: truck20b_1 traveling to shovel
 At time 244.4518908375516: truck50_2 start dumping
 At time 245.9518908375516: truck20b_1 request shovel
 At time 245.9518908375516: truck20b_1 starts loading
 At time 246.09050095308072: truck20b_2 stop loading
 At time 246.09050095308072: truck20b_2 traveling to crusher
 At time 246.09050095308072: truck20a_2 starts loading
 At time 246.54702895117634: truck50_1 request crusher
 At time 246.73190713813324: truck20a_2 stop loading

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At time 246.73190713813324: truck20a_2 traveling to crusher
 At time 246.98123837008816: truck50_2 finished dumping
 At time 246.98123837008816: truck50_2 traveling to shovel
 At time 246.98123837008816: truck50_1 start dumping
 At time 247.1443018824285: truck50_1 finished dumping
 At time 247.1443018824285: truck50_1 traveling to shovel
 At time 247.1443018824285: truck20a_1 start dumping
 At time 247.43726437992132: truck20a_1 finished dumping
 At time 247.43726437992132: truck20a_1 traveling to shovel
 At time 248.59050095308072: truck20b_2 request crusher
 At time 248.59050095308072: truck20b_2 request crusher
 At time 248.59050095308072: truck20b_2 start dumping
 At time 248.93726437992132: truck20a_1 request shovel
 At time 248.98123837008816: truck50_2 request shovel
 At time 248.98123837008816: truck50_2 starts loading
 At time 249.1443018824285: truck50_1 request shovel
 At time 249.2110582903564: truck50_3 stop loading
 At time 249.2110582903564: truck50_3 traveling to crusher
 At time 249.2110582903564: truck20b_3 starts loading
 At time 249.23190713813324: truck20a_2 request crusher
 At time 249.23190713813324: truck20a_2 request crusher
 At time 249.48125886469836: truck20b_2 finished dumping
 At time 249.48125886469836: truck20b_2 traveling to shovel
 At time 249.48125886469836: truck20a_2 start dumping
 At time 249.7554250717336: truck20a_2 finished dumping
 At time 249.7554250717336: truck20a_2 traveling to shovel
 At time 250.98125886469836: truck20b_2 request shovel
 At time 251.2554250717336: truck20a_2 request shovel
 At time 252.2110582903564: truck50_3 request crusher
 At time 252.2110582903564: truck50_3 start dumping
 At time 253.97894191229287: truck20b_3 stop loading
 At time 253.97894191229287: truck20b_3 traveling to crusher
 At time 253.97894191229287: truck20a_3 starts loading
 At time 254.3119619839493: truck50_3 finished dumping
 At time 254.3119619839493: truck50_3 traveling to shovel
 At time 255.3652913204638: truck20b_1 stop loading
 At time 255.3652913204638: truck20b_1 traveling to crusher
 At time 255.3652913204638: truck20a_1 starts loading
 At time 256.3119619839493: truck50_3 request shovel
 At time 256.47894191229284: truck20b_3 request crusher
 At time 256.47894191229284: truck20b_3 request crusher
 At time 256.47894191229284: truck20b_3 start dumping
 At time 256.692113606732: truck20b_3 finished dumping
 At time 256.692113606732: truck20b_3 traveling to shovel
 At time 257.8652913204638: truck20b_1 request crusher
 At time 257.8652913204638: truck20b_1 request crusher
 At time 257.8652913204638: truck20b_1 start dumping
 At time 258.192113606732: truck20b_3 request shovel
 At time 258.38683910742964: truck20a_1 stop loading
 At time 258.38683910742964: truck20a_1 traveling to crusher
 At time 258.38683910742964: truck50_1 starts loading
 At time 260.4215617807219: truck20b_1 finished dumping
 At time 260.4215617807219: truck20b_1 traveling to shovel
 At time 260.88683910742964: truck20a_1 request crusher
 At time 260.88683910742964: truck20a_1 request crusher
 At time 260.88683910742964: truck20a_1 start dumping
 At time 261.1883573466092: truck20a_1 finished dumping
 At time 261.1883573466092: truck20a_1 traveling to shovel
 At time 261.9215617807219: truck20b_1 request shovel
 At time 262.6883573466092: truck20a_1 request shovel
 At time 262.9736102914716: truck20a_3 stop loading
 At time 262.9736102914716: truck20a_3 traveling to crusher
 At time 262.9736102914716: truck50_3 starts loading
 At time 265.0571354643896: truck50_2 stop loading
 At time 265.0571354643896: truck50_2 traveling to crusher
 At time 265.0571354643896: truck20b_2 starts loading
 At time 265.4736102914716: truck20a_3 request crusher
 At time 265.4736102914716: truck20a_3 request crusher
 At time 265.4736102914716: truck20a_3 start dumping
 At time 266.0168478327776: truck50_3 stop loading
 At time 266.0168478327776: truck50_3 traveling to crusher

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At time 266.0168478327776: truck20b_3 starts loading
 At time 266.6301696849826: truck20a_3 finished dumping
 At time 266.6301696849826: truck20a_3 traveling to *shovel*
 At time 268.0571354643896: truck50_2 request crusher
 At time 268.0571354643896: truck50_2 start dumping
 At time 268.1301696849826: truck20a_3 request *shovel*
 At time 268.17642822810984: truck20b_3 stop loading
 At time 268.17642822810984: truck20b_3 traveling to crusher
 At time 268.17642822810984: truck20a_3 starts loading
 At time 268.8482621365276: truck20b_2 stop loading
 At time 268.8482621365276: truck20b_2 traveling to crusher
 At time 268.8482621365276: truck20a_2 starts loading
 At time 269.0168478327776: truck50_3 request crusher
 At time 269.7491305175091: truck50_1 stop loading
 At time 269.7491305175091: truck50_1 traveling to crusher
 At time 269.7491305175091: truck20b_1 starts loading
 At time 270.67642822810984: truck20b_3 request crusher
 At time 270.67642822810984: truck20b_3 request crusher
 At time 270.98534209923423: truck20a_3 stop loading
 At time 270.98534209923423: truck20a_3 traveling to crusher
 At time 271.3482621365276: truck20b_2 request crusher
 At time 271.3482621365276: truck20b_2 request crusher
 At time 272.7491305175091: truck50_1 request crusher
 At time 273.48464422864964: truck20b_1 stop loading
 At time 273.48464422864964: truck20b_1 traveling to crusher
 At time 273.48464422864964: truck20a_1 starts loading
 At time 273.48534209923423: truck20a_3 request crusher
 At time 273.48534209923423: truck20a_3 request crusher
 At time 274.9338943732584: truck20a_1 stop loading
 At time 274.9338943732584: truck20a_1 traveling to crusher
 At time 275.98464422864964: truck20b_1 request crusher
 At time 275.98464422864964: truck20b_1 request crusher
 At time 276.1051554341216: truck20a_2 stop loading
 At time 276.1051554341216: truck20a_2 traveling to crusher
 At time 277.4338943732584: truck20a_1 request crusher
 At time 277.4338943732584: truck20a_1 request crusher
 At time 278.6051554341216: truck20a_2 request crusher
 At time 278.6051554341216: truck20a_2 request crusher
 At time 280.5852151920581: truck50_2 finished dumping
 At time 280.5852151920581: truck50_2 traveling to *shovel*
 At time 280.5852151920581: truck50_3 start dumping
 At time 282.5852151920581: truck50_2 request *shovel*
 At time 282.5852151920581: truck50_2 starts loading
 At time 290.7488465273512: truck50_2 stop loading
 At time 290.7488465273512: truck50_2 traveling to crusher
 At time 291.7681036565523: truck50_3 finished dumping
 At time 291.7681036565523: truck50_3 traveling to *shovel*
 At time 291.7681036565523: truck50_1 start dumping
 At time 292.00208224962194: truck50_1 finished dumping
 At time 292.00208224962194: truck50_1 traveling to *shovel*
 At time 292.00208224962194: truck20b_3 start dumping
 At time 293.3967910595665: truck20b_3 finished dumping
 At time 293.3967910595665: truck20b_3 traveling to *shovel*
 At time 293.3967910595665: truck20b_2 start dumping
 At time 293.7488465273512: truck50_2 request crusher
 At time 293.7681036565523: truck50_3 request *shovel*
 At time 293.7681036565523: truck50_3 starts loading
 At time 294.00208224962194: truck50_1 request *shovel*
 At time 294.00208224962194: truck50_1 starts loading
 At time 294.8967910595665: truck20b_3 request *shovel*
 At time 297.6139203035932: truck50_3 stop loading
 At time 297.6139203035932: truck50_3 traveling to crusher
 At time 297.6139203035932: truck20b_3 starts loading
 At time 297.6509225007704: truck20b_2 finished dumping
 At time 297.6509225007704: truck20b_2 traveling to *shovel*
 At time 297.6509225007704: truck50_2 start dumping
 At time 299.1509225007704: truck20b_2 request *shovel*
 At time 299.1509225007704: truck20b_2 starts loading
 At time 300.2843507451012: truck20b_2 stop loading
 At time 300.2843507451012: truck20b_2 traveling to crusher
 At time 300.366060825147: truck20b_3 stop loading

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At time 300.3660660825147: truck20b_3 traveling to crusher
 At time 300.6139203035932: truck50_3 request crusher
 At time 302.7843507451012: truck20b_2 request crusher
 At time 302.7843507451012: truck20b_2 request crusher
 At time 302.8660660825147: truck20b_3 request crusher
 At time 302.8660660825147: truck20b_3 request crusher
 At time 304.49522874004646: truck50_1 stop loading
 At time 304.49522874004646: truck50_1 traveling to crusher
 At time 307.49522874004646: truck50_1 request crusher
 At time 309.30815903127456: truck50_2 finished dumping
 At time 309.30815903127456: truck50_2 traveling to shovel
 At time 309.30815903127456: truck50_3 start dumping
 At time 311.30815903127456: truck50_2 request shovel
 At time 311.30815903127456: truck50_2 starts loading
 At time 311.8595808030233: truck50_3 finished dumping
 At time 311.8595808030233: truck50_3 traveling to shovel
 At time 311.8595808030233: truck50_1 start dumping
 At time 312.703204146754: truck50_2 stop loading
 At time 312.703204146754: truck50_2 traveling to crusher
 At time 313.8595808030233: truck50_3 request shovel
 At time 313.8595808030233: truck50_3 starts loading
 At time 314.380913288315: truck50_1 finished dumping
 At time 314.380913288315: truck50_1 traveling to shovel
 At time 314.380913288315: truck20a_3 start dumping
 At time 315.703204146754: truck50_2 request crusher
 At time 316.380913288315: truck50_1 request shovel
 At time 316.380913288315: truck50_1 starts loading
 At time 316.6317581642844: truck20a_3 finished dumping
 At time 316.6317581642844: truck20a_3 traveling to shovel
 At time 316.6317581642844: truck50_2 start dumping
 At time 317.3293426159153: truck50_3 stop loading
 At time 317.3293426159153: truck50_3 traveling to crusher
 At time 318.1317581642844: truck20a_3 request shovel
 At time 318.1317581642844: truck20a_3 starts loading
 At time 318.3689010458438: truck50_2 finished dumping
 At time 318.3689010458438: truck50_2 traveling to shovel
 At time 318.3689010458438: truck20b_1 start dumping
 At time 320.31643403535793: truck20a_3 stop loading
 At time 320.31643403535793: truck20a_3 traveling to crusher
 At time 320.3293426159153: truck50_3 request crusher
 At time 320.3689010458438: truck50_2 request shovel
 At time 320.3689010458438: truck50_2 starts loading
 At time 321.4461592218987: truck50_1 stop loading
 At time 321.4461592218987: truck50_1 traveling to crusher
 At time 321.6984136662123: truck20b_1 finished dumping
 At time 321.6984136662123: truck20b_1 traveling to shovel
 At time 321.6984136662123: truck50_3 start dumping
 At time 322.74493510482046: truck50_2 stop loading
 At time 322.74493510482046: truck50_2 traveling to crusher
 At time 322.81643403535793: truck20a_3 request crusher
 At time 322.81643403535793: truck20a_3 request crusher
 At time 323.1984136662123: truck20b_1 request shovel
 At time 323.1984136662123: truck20b_1 starts loading
 At time 323.88878989038636: truck50_3 finished dumping
 At time 323.88878989038636: truck50_3 traveling to shovel
 At time 323.88878989038636: truck20a_1 start dumping
 At time 324.4461592218987: truck50_1 request crusher
 At time 325.74493510482046: truck50_2 request crusher
 At time 325.88878989038636: truck50_3 request shovel
 At time 325.88878989038636: truck50_3 starts loading
 At time 326.4069674863255: truck20a_1 finished dumping
 At time 326.4069674863255: truck20a_1 traveling to shovel
 At time 326.4069674863255: truck50_1 start dumping
 At time 327.9069674863255: truck20a_1 request shovel
 At time 330.83313885082646: truck50_3 stop loading
 At time 330.83313885082646: truck50_3 traveling to crusher
 At time 333.83313885082646: truck50_3 request crusher
 At time 335.6909387441323: truck20b_1 stop loading
 At time 335.6909387441323: truck20b_1 traveling to crusher
 At time 335.6909387441323: truck20a_1 starts loading
 At time 337.33109561432224: truck50_1 finished dumping

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At time 337.33109561432224: truck50_1 traveling to *shovel*
 At time 337.33109561432224: truck50_2 start dumping
 At time 338.1909387441323: truct20b_1 request crusher
 At time 338.1909387441323: truct20b_1 request crusher
 At time 339.33109561432224: truck50_1 request *shovel*
 At time 340.44935705640614: truct20a_1 stop loading
 At time 340.44935705640614: truct20a_1 traveling to crusher
 At time 340.44935705640614: truck50_1 starts loading
 At time 342.5904545038684: truck50_2 finished dumping
 At time 342.5904545038684: truck50_2 traveling to *shovel*
 At time 342.5904545038684: truck50_3 start dumping
 At time 342.94935705640614: truct20a_1 request crusher
 At time 342.94935705640614: truct20a_1 request crusher
 At time 344.42442158090205: truck50_1 stop loading
 At time 344.42442158090205: truck50_1 traveling to crusher
 At time 344.5904545038684: truck50_2 request *shovel*
 At time 344.5904545038684: truck50_2 starts loading
 At time 345.97231976467987: truck50_3 finished dumping
 At time 345.97231976467987: truck50_3 traveling to *shovel*
 At time 345.97231976467987: truck20a_2 start dumping
 At time 346.4407720698822: truck20a_2 finished dumping
 At time 346.4407720698822: truck20a_2 traveling to *shovel*
 At time 346.4407720698822: truck20b_2 start dumping
 At time 346.47075413961113: truck20b_2 finished dumping
 At time 346.47075413961113: truck20b_2 traveling to *shovel*
 At time 346.47075413961113: truck20b_3 start dumping
 At time 347.42442158090205: truck50_1 request crusher
 At time 347.9407720698822: truck20a_2 request *shovel*
 At time 347.97075413961113: truck20b_2 request *shovel*
 At time 347.97231976467987: truck50_3 request *shovel*
 At time 347.97231976467987: truck50_3 starts loading
 At time 351.7509907553673: truck20b_3 finished dumping
 At time 351.7509907553673: truck20b_3 traveling to *shovel*
 At time 351.7509907553673: truck50_1 start dumping
 At time 353.02580813838966: truck50_3 stop loading
 At time 353.02580813838966: truck50_3 traveling to crusher
 At time 353.2509907553673: truck20b_3 request *shovel*
 At time 353.2509907553673: truck20b_3 starts loading
 At time 354.2501151498755: truck50_1 finished dumping
 At time 354.2501151498755: truck50_1 traveling to *shovel*
 At time 354.2501151498755: truck20a_3 start dumping
 At time 354.33533501549704: truck20a_3 finished dumping
 At time 354.33533501549704: truck20a_3 traveling to *shovel*
 At time 354.33533501549704: truct20b_1 start dumping
 At time 355.69327628213136: truct20b_1 finished dumping
 At time 355.69327628213136: truct20b_1 traveling to *shovel*
 At time 355.69327628213136: truct20a_1 start dumping
 At time 355.83533501549704: truck20a_3 request *shovel*
 At time 355.8992766545913: truct20a_1 finished dumping
 At time 355.8992766545913: truct20a_1 traveling to *shovel*
 At time 356.02580813838966: truck50_3 request crusher
 At time 356.02580813838966: truck50_3 start dumping
 At time 356.2326940820991: truck20b_3 stop loading
 At time 356.2326940820991: truck20b_3 traveling to crusher
 At time 356.2326940820991: truck20a_3 starts loading
 At time 356.2501151498755: truck50_1 request *shovel*
 At time 356.2501151498755: truck50_1 starts loading
 At time 357.123283997251: truck50_3 finished dumping
 At time 357.123283997251: truck50_3 traveling to *shovel*
 At time 357.19327628213136: truct20b_1 request *shovel*
 At time 357.3992766545913: truct20a_1 request *shovel*
 At time 358.7326940820991: truck20b_3 request crusher
 At time 358.7326940820991: truck20b_3 request crusher
 At time 358.7326940820991: truck20b_3 start dumping
 At time 359.123283997251: truck50_3 request *shovel*
 At time 359.9525602408145: truck20b_3 finished dumping
 At time 359.9525602408145: truck20b_3 traveling to *shovel*
 At time 360.26906573358275: truck50_1 stop loading
 At time 360.26906573358275: truck50_1 traveling to crusher
 At time 360.26906573358275: truct20b_1 starts loading
 At time 360.5270447847431: truck50_2 stop loading

At time 360.5270447847431: truck50_2 traveling to crusher
 At time 360.5270447847431: truck20a_2 starts loading
 At time 360.8127131039637: truck20a_2 stop loading
 At time 360.8127131039637: truck20a_2 traveling to crusher
 At time 360.8127131039637: truck20b_2 starts loading
 At time 361.4525602408145: truck20b_3 request *shovel*
 At time 363.26906573358275: truck50_1 request crusher
 At time 363.26906573358275: truck50_1 start dumping
 At time 363.3127131039637: truck20a_2 request crusher
 At time 363.3127131039637: truck20a_2 request crusher
 At time 363.37731526759353: truck20b_2 stop loading
 At time 363.37731526759353: truck20b_2 traveling to crusher
 At time 363.5270447847431: truck50_2 request crusher
 At time 364.80799930946154: truck50_1 finished dumping
 At time 364.80799930946154: truck50_1 traveling to *shovel*
 At time 364.80799930946154: truck50_2 start dumping
 At time 365.403211680521: truck20b_1 stop loading
 At time 365.403211680521: truck20b_1 traveling to crusher
 At time 365.403211680521: truck20a_1 starts loading
 At time 365.54218244095495: truck20a_1 stop loading
 At time 365.54218244095495: truck20a_1 traveling to crusher
 At time 365.87731526759353: truck20b_2 request crusher
 At time 365.87731526759353: truck20b_2 request crusher
 At time 365.9048746058315: truck20a_3 stop loading
 At time 365.9048746058315: truck20a_3 traveling to crusher
 At time 365.9048746058315: truck50_3 starts loading
 At time 366.80799930946154: truck50_1 request *shovel*
 At time 366.80799930946154: truck50_1 starts loading
 At time 367.903211680521: truck20b_1 request crusher
 At time 367.903211680521: truck20b_1 request crusher
 At time 368.04218244095495: truck20a_1 request crusher
 At time 368.04218244095495: truck20a_1 request crusher
 At time 368.4048746058315: truck20a_3 request crusher
 At time 368.4048746058315: truck20a_3 request crusher
 At time 375.6330594075503: truck50_2 finished dumping
 At time 375.6330594075503: truck50_2 traveling to *shovel*
 At time 375.6330594075503: truck20a_2 start dumping
 At time 375.7640716779856: truck20a_2 finished dumping
 At time 375.7640716779856: truck20a_2 traveling to *shovel*
 At time 375.7640716779856: truck20b_2 start dumping
 At time 377.2640716779856: truck20a_2 request *shovel*
 At time 377.2640716779856: truck20a_2 starts loading
 At time 377.6330594075503: truck50_2 request *shovel*
 At time 378.2580659793041: truck20b_2 finished dumping
 At time 378.2580659793041: truck20b_2 traveling to *shovel*
 At time 378.2580659793041: truck20b_1 start dumping
 At time 379.7580659793041: truck20b_2 request *shovel*
 At time 379.8899290136891: truck20b_1 finished dumping
 At time 379.8899290136891: truck20b_1 traveling to *shovel*
 At time 379.8899290136891: truck20a_1 start dumping
 At time 381.3899290136891: truck20b_1 request *shovel*
 At time 385.66614731451597: truck20a_2 stop loading
 At time 385.66614731451597: truck20a_2 traveling to crusher
 At time 385.66614731451597: truck50_2 starts loading
 At time 387.99396536521675: truck20a_1 finished dumping
 At time 387.99396536521675: truck20a_1 traveling to *shovel*
 At time 387.99396536521675: truck20a_3 start dumping
 At time 388.16614731451597: truck20a_2 request crusher
 At time 388.16614731451597: truck20a_2 request crusher
 At time 389.49396536521675: truck20a_1 request *shovel*
 At time 390.91552920813587: truck50_2 stop loading
 At time 390.91552920813587: truck50_2 traveling to crusher
 At time 390.91552920813587: truck20b_2 starts loading
 At time 391.45349572875796: truck20a_3 finished dumping
 At time 391.45349572875796: truck20a_3 traveling to *shovel*
 At time 391.45349572875796: truck20a_2 start dumping
 At time 391.645315891964: truck50_1 stop loading
 At time 391.645315891964: truck50_1 traveling to crusher
 At time 391.645315891964: truck20b_1 starts loading
 At time 392.73528413072864: truck20b_1 stop loading
 At time 392.73528413072864: truck20b_1 traveling to crusher

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At time 392.73528413072864: truck20a_1 starts loading
 At time 392.95349572875796: truck20a_3 request shovel
 At time 393.46831833951506: truck20a_2 finished dumping
 At time 393.46831833951506: truck20a_2 traveling to shovel
 At time 393.91552920813587: truck50_2 request crusher
 At time 393.91552920813587: truck50_2 start dumping
 At time 394.645315891964: truck50_1 request crusher
 At time 394.72001502787174: truck20b_2 stop loading
 At time 394.72001502787174: truck20b_2 traveling to crusher
 At time 394.96831833951506: truck20a_2 request shovel
 At time 394.96831833951506: truck20a_2 starts loading
 At time 395.23528413072864: truck20b_1 request crusher
 At time 395.23528413072864: truck20b_1 request crusher
 At time 397.22001502787174: truck20b_2 request crusher
 At time 397.22001502787174: truck20b_2 request crusher
 At time 397.3801091024485: truck50_2 finished dumping
 At time 397.3801091024485: truck50_2 traveling to shovel
 At time 397.3801091024485: truck50_1 start dumping
 At time 399.3801091024485: truck50_2 request shovel
 At time 400.0806895050963: truck50_3 stop loading
 At time 400.0806895050963: truck50_3 traveling to crusher
 At time 400.0806895050963: truck20b_3 starts loading
 At time 402.84649913798626: truck20a_2 stop loading
 At time 402.84649913798626: truck20a_2 traveling to crusher
 At time 402.84649913798626: truck50_2 starts loading
 At time 403.0806895050963: truck50_3 request crusher
 At time 403.2928949072291: truck20b_3 stop loading
 At time 403.2928949072291: truck20b_3 traveling to crusher
 At time 403.2928949072291: truck20a_3 starts loading
 At time 404.779315766101: truck20a_1 stop loading
 At time 404.779315766101: truck20a_1 traveling to crusher
 At time 405.34649913798626: truck20a_2 request crusher
 At time 405.34649913798626: truck20a_2 request crusher
 At time 405.7928949072291: truck20b_3 request crusher
 At time 405.7928949072291: truck20b_3 request crusher
 At time 407.279315766101: truck20a_1 request crusher
 At time 407.279315766101: truck20a_1 request crusher
 At time 412.55357885142985: truck20a_3 stop loading
 At time 412.55357885142985: truck20a_3 traveling to crusher
 At time 414.0092880834503: truck50_2 stop loading
 At time 414.0092880834503: truck50_2 traveling to crusher
 At time 415.05357885142985: truck20a_3 request crusher
 At time 415.05357885142985: truck20a_3 request crusher
 At time 417.0092880834503: truck50_2 request crusher
 At time 417.29754629154434: truck50_1 finished dumping
 At time 417.29754629154434: truck50_1 traveling to shovel
 At time 417.29754629154434: truck50_3 start dumping
 At time 419.29754629154434: truck50_1 request shovel
 At time 419.29754629154434: truck50_1 starts loading
 At time 419.3883411883791: truck50_3 finished dumping
 At time 419.3883411883791: truck50_3 traveling to shovel
 At time 419.3883411883791: truck50_2 start dumping
 At time 421.3883411883791: truck50_3 request shovel
 At time 421.3883411883791: truck50_3 starts loading
 At time 429.6879886859161: truck50_2 finished dumping
 At time 429.6879886859161: truck50_2 traveling to shovel
 At time 429.6879886859161: truck20b_1 start dumping
 At time 429.8675774979: truck50_1 stop loading
 At time 429.8675774979: truck50_1 traveling to crusher
 At time 431.6879886859161: truck50_2 request shovel
 At time 431.6879886859161: truck50_2 starts loading
 At time 432.7007052703993: truck20b_1 finished dumping
 At time 432.7007052703993: truck20b_1 traveling to shovel
 At time 432.7007052703993: truck20b_2 start dumping
 At time 432.8675774979: truck50_1 request crusher
 At time 433.20932187022197: truck20b_2 finished dumping
 At time 433.20932187022197: truck20b_2 traveling to shovel
 At time 433.20932187022197: truck50_1 start dumping
 At time 434.2007052703993: truck20b_1 request shovel
 At time 434.2007052703993: truck20b_1 starts loading
 At time 434.70932187022197: truck20b_2 request shovel

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At time 434.87019479403773: truct20b_1 stop loading
 At time 434.87019479403773: truct20b_1 traveling to crusher
 At time 437.32973337156847: truck50_3 stop loading
 At time 437.32973337156847: truck50_3 traveling to crusher
 At time 437.37019479403773: truct20b_1 request crusher
 At time 437.37019479403773: truct20b_1 request crusher
 At time 440.32973337156847: truck50_3 request crusher
 At time 442.30110479787834: truck50_1 finished dumping
 At time 442.30110479787834: truck50_1 traveling to shovel
 At time 442.30110479787834: truck50_3 start dumping
 At time 444.30110479787834: truck50_1 request shovel
 At time 444.30110479787834: truck50_1 starts loading
 At time 446.0046514021132: truck50_2 stop loading
 At time 446.0046514021132: truck50_2 traveling to crusher
 At time 446.0046514021132: truck20b_2 starts loading
 At time 446.34596761401775: truck50_3 finished dumping
 At time 446.34596761401775: truck50_3 traveling to shovel
 At time 446.34596761401775: truck20a_2 start dumping
 At time 447.1175658578616: truck50_1 stop loading
 At time 447.1175658578616: truck50_1 traveling to crusher
 At time 447.25259903210326: truck20a_2 finished dumping
 At time 447.25259903210326: truck20a_2 traveling to shovel
 At time 447.25259903210326: truck20b_3 start dumping
 At time 448.34596761401775: truck50_3 request shovel
 At time 448.34596761401775: truck50_3 starts loading
 At time 448.75259903210326: truck20a_2 request shovel
 At time 449.0046514021132: truck50_2 request crusher
 At time 449.4669755626033: truck20b_3 finished dumping
 At time 449.4669755626033: truck20b_3 traveling to shovel
 At time 449.4669755626033: truck50_2 start dumping
 At time 449.7288773601377: truck20b_2 stop loading
 At time 449.7288773601377: truck20b_2 traveling to crusher
 At time 449.7288773601377: truck20a_2 starts loading
 At time 450.1175658578616: truck50_1 request crusher
 At time 450.9669755626033: truck20b_3 request shovel
 At time 451.6200796492843: truck20a_2 stop loading
 At time 451.6200796492843: truck20a_2 traveling to crusher
 At time 451.8787809837141: truck50_2 finished dumping
 At time 451.8787809837141: truck50_2 traveling to shovel
 At time 451.8787809837141: truck50_1 start dumping
 At time 452.2288773601377: truck20b_2 request crusher
 At time 452.2288773601377: truck20b_2 request crusher
 At time 453.8787809837141: truck50_2 request shovel
 At time 453.8787809837141: truck50_2 starts loading
 At time 454.1200796492843: truck20a_2 request crusher
 At time 454.1200796492843: truck20a_2 request crusher
 At time 456.6102415622555: truck50_3 stop loading
 At time 456.6102415622555: truck50_3 traveling to crusher
 At time 456.6102415622555: truck20b_3 starts loading
 At time 457.5138974056779: truck50_1 finished dumping
 At time 457.5138974056779: truck50_1 traveling to shovel
 At time 457.5138974056779: truck20a_1 start dumping
 At time 459.5138974056779: truck50_1 request shovel
 At time 459.5138974056779: truck50_1 starts loading
 At time 459.6102415622555: truck50_3 request crusher
 At time 460.0716304348185: truck20b_3 stop loading
 At time 460.0716304348185: truck20b_3 traveling to crusher
 At time 460.436877166015: truck20a_1 finished dumping
 At time 460.436877166015: truck20a_1 traveling to shovel
 At time 460.436877166015: truck50_3 start dumping
 At time 461.936877166015: truck20a_1 request shovel
 At time 462.5716304348185: truck20b_3 request crusher
 At time 462.5716304348185: truck20b_3 request crusher
 At time 466.69086315056074: truck50_3 finished dumping
 At time 466.69086315056074: truck50_3 traveling to shovel
 At time 466.69086315056074: truck20a_3 start dumping
 At time 466.7779502223933: truck50_1 stop loading
 At time 466.7779502223933: truck50_1 traveling to crusher
 At time 466.7779502223933: truck20a_1 starts loading
 At time 468.69086315056074: truck50_3 request shovel
 At time 468.69086315056074: truck50_3 starts loading

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At time 469.0120867960769: truck20a_3 finished dumping
 At time 469.0120867960769: truck20a_3 traveling to *shovel*
 At time 469.0120867960769: truck20b_1 start dumping
 At time 469.24619545252176: truck50_3 stop loading
 At time 469.24619545252176: truck50_3 traveling to crusher
 At time 469.6742390943587: truck20b_1 finished dumping
 At time 469.6742390943587: truck20b_1 traveling to *shovel*
 At time 469.6742390943587: truck20b_2 start dumping
 At time 469.7779502223933: truck50_1 request crusher
 At time 470.5120867960769: truck20a_3 request *shovel*
 At time 470.5120867960769: truck20a_3 starts loading
 At time 471.1742390943587: truck20b_1 request *shovel*
 At time 472.24619545252176: truck50_3 request crusher
 At time 472.2500193071898: truck20b_2 finished dumping
 At time 472.2500193071898: truck20b_2 traveling to *shovel*
 At time 472.2500193071898: truck50_1 start dumping
 At time 473.1539398363433: truck20a_3 stop loading
 At time 473.1539398363433: truck20a_3 traveling to crusher
 At time 473.7500193071898: truck20b_2 request *shovel*
 At time 474.04445455197896: truck20a_1 stop loading
 At time 474.04445455197896: truck20a_1 traveling to crusher
 At time 474.04445455197896: truck20b_1 starts loading
 At time 474.3540084640895: truck50_1 finished dumping
 At time 474.3540084640895: truck50_1 traveling to *shovel*
 At time 474.3540084640895: truck50_3 start dumping
 At time 474.3748551742679: truck50_2 stop loading
 At time 474.3748551742679: truck50_2 traveling to crusher
 At time 474.3748551742679: truck20b_2 starts loading
 At time 475.2530059841809: truck20b_2 stop loading
 At time 475.2530059841809: truck20b_2 traveling to crusher
 At time 475.6539398363433: truck20a_3 request crusher
 At time 475.6539398363433: truck20a_3 request crusher
 At time 476.3540084640895: truck50_1 request *shovel*
 At time 476.54445455197896: truck20a_1 request crusher
 At time 476.54445455197896: truck20a_1 request crusher
 At time 477.3748551742679: truck50_2 request crusher
 At time 477.7530059841809: truck20b_2 request crusher
 At time 477.7530059841809: truck20b_2 request crusher
 At time 478.1258993213056: truck20b_1 stop loading
 At time 478.1258993213056: truck20b_1 traveling to crusher
 At time 478.1258993213056: truck50_1 starts loading
 Waktu Simulasi: 480 menit
Shovel 1
 Total truck: 55
 rata-rata waktu delay: 4.720993653185327
 rata-rata panjang antrean: 0.8022600175986926 trucks
 rata-rata utilisasi server : 0.693280866436338

Shovel 2
 Total truck: 56
 rata-rata waktu delay: 3.996544709146877
 rata-rata panjang antrean: 0.6597720557245933 trucks
 rata-rata utilisasi server : 0.6236694431599302

Shovel 3
 Total truck: 45
 rata-rata waktu delay: 6.521485894478452
 rata-rata panjang antrean: 1.0506623086650233 trucks
 rata-rata utilisasi server : 0.7161995793742485

Crusher
 Total truck: 148
 rata-rata waktu delay: 9.702485659461836
 rata-rata panjang antrean: 0.3321314144159838 trucks
 rata-rata utilisasi server : 0.897003784913983

At time 480.0: nothing

480.0

Lampiran 2 Sintaks untuk Kasus 2 menggunakan cara alternatif

```
using ConcurrentSim, Random, ResumableFunctions, Distributions
```

```
mutable struct StatStruct
    dur ::Float64
    delay ::Float64
    nPlane ::Int
    tPlane ::Float64
    nPlaneSSQ ::Int
    nDownSSQ::Int
    tDown::Float64

    function StatStruct()
        st = new()
        st.dur = 0.0
        st.delay = 0.0
        st.nPlane = 0
        st.tPlane = 0.0
        st.nPlaneSSQ =0
        st.nDownSSQ=0
        st.tDown=0.0
        return st
    end
end
```

```
aseed = [1234,34456,2345,123,33,55,67,
        6464646,88888,109854,568,98766324,6464646,333324242,
        84746,787,55562,109345,5456,635353,3334,
        8762,2879,3908,24536,52638,66673,8889]
```

```
a = [8.1,2.9,3.6,8.4,10.9,6.7,3.0]
```

```
A = [0.7,0.9,0.8,1.9,0.7,0.9,1.6]
```

```
B = [2.1,1.8,1.6,2.8,2.2,1.7,2.0]
```

```
p = [0.3,0.26,0.18,0.12, 0.36,0.14,0.21]
```

```
r = [2.1,1.8,1.6,3.1,2.2,1.7,2.8]
```

```
c = [2.1,1.7,1.0,3.9, 1.4, 1.1,3.7]
```

```
nEngine = [4 3 2 4 4 2 3 ]
```

```
rng = []
for i=1:28
    push!(rng,MersenneTwister(aseed[i]))
end
```

```
function getNextIA(planeType::Int)
    return a[planeType]*randexp(rng[planeType],Float32)
end
```

```
function getNextIT1(planeType::Int)
    return rand(rng[7+planeType],Uniform(A[planeType],B[planeType]))
end
```

```
function getNextIT2(planeType::Int)
    return rand(rng[7+planeType],Uniform(A[planeType]/2,B[planeType]/2))
end
```



```

function getNextDec1(planeType)
    return rand(rng[14+planeType],Bernoulli(p[planeType]))
end

function getNextDec2(planeType)
    return rand(rng[14+planeType],Bernoulli(p[planeType]/2))
end

function getNextRep1(planeType)
    return rand(rng[21+planeType],Erlang(2,1/r[planeType]))
end

function getNextRep2(planeType)
    return rand(rng[21+planeType],Erlang(2,1/(r[planeType]/2)))
end

@resumable function regularPlane(sim::Simulation,planeType::Int,
    serviceStation::Resource, st::StatStruct)
    start_time = now(sim)
    st.nPlane += 1
    st.nPlaneSSQ += 1
    st.nDownSSQ += 1
    @yield request(serviceStation; priority=2 ) # lower priority
    st.delay += now(sim)-start_time
    st.tPlane += st.nPlaneSSQ * (now(sim)-start_time)
    st.nPlaneSSQ -= 1

    for i=1:nEngine[planeType]
        firstInspect = true
        firstRepair = true
        engineDone = false
        while !engineDone
            # inspecting engine
            if firstInspect
                @yield timeout(sim,getNextIT1(planeType))
                firstInspect = false
            else
                @yield timeout(sim,getNextIT2(planeType))
            end
            if firstRepair
                needRepair = getNextDec1(planeType)
            else
                needRepair = getNextDec2(planeType)
            end

            if needRepair
                # repair
                if firstRepair
                    @yield timeout(sim,getNextRep1(planeType))
                    firstRepair = false
                else
                    @yield timeout(sim,getNextRep2(planeType))
                end
            else
                engineDone = true
            end
        end
    end
end

```

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```

@yield release(serviceStation)
st.tDown += st.nDownSSQ*(now(sim)-start_time)
st.nDownSSQ -= 1
st.dur += now(sim)-start_time
end

@resumable function widebodyPlane(sim::Simulation,planeType::Int,
    serviceStation::Resource, st::StatStruct)
    start_time = now(sim)
    st.nPlane += 1
    st.nPlaneSSQ += 1
    st.nDownSSQ += 1
    @yield request(serviceStation; priority=1)
    st.delay += now(sim)-start_time
    st.tPlane += st.nPlaneSSQ * (now(sim)-start_time)
    st.nPlaneSSQ -= 1

    for i=1:nEngine[planeType]
        firstInspect = true
        firstRepair = true
        engineDone = false
        while !engineDone
            # inspecting engine
            if firstInspect
                @yield timeout(sim,getNextIT1(planeType))
                firstInspect = false
            else
                @yield timeout(sim,getNextIT2(planeType))
            end
            if firstRepair
                needRepair = getNextDec1(planeType)
            else
                needRepair = getNextDec2(planeType)
            end

            if needRepair
                # repair
                if firstRepair
                    @yield timeout(sim,getNextRep1(planeType))
                    firstRepair = false
                else
                    @yield timeout(sim,getNextRep2(planeType))
                end
            else
                engineDone = true
            end
        end
    end
    @yield release(serviceStation)
    st.tDown += st.nDownSSQ*(now(sim)-start_time)
    st.nDownSSQ -= 1
    st.dur += now(sim)-start_time
end

```

```

@resumable function planeGenerator(sim::Simulation, planeType::Int,
                                   serviceStation1::Resource,
                                   serviceStation2::Resource, stat::StatStruct)

    while true
        ia = getNextIA(planeType)
        @yield timeout(sim,ia)
        if (planeType==4) || (planeType==7)
            @process widebodyPlane(sim,planeType,serviceStation1,stat)
        else
            @process regularPlane(sim,planeType,serviceStation2,stat)
        end
    end
end

function sim_3(n1,n2)
    sim = Simulation()
    serviceStation1 = Resource(sim,n1)
    serviceStation2 = Resource(sim,n2)
    aStat = []
    for i=1:7
        stat = StatStruct()
        @process planeGenerator(sim,i,serviceStation1,serviceStation2,stat)
        push!(aStat,stat)
    end
end

```

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