

Код программы №1:

KK2 STORAGE 2

KK4 STORAGE 3

KK5 STORAGE 4

GENERATE 7,5

TRANSFER .5,K1,K2

K1 QUEUE LOL1

SEIZE KK1

DEPART LOL1

ADVANCE 10,3

RELEASE KK1

TRANSFER ,OUT1

K2 QUEUE LOL2

ENTER KK2

DEPART LOL2

ADVANCE 35,8

LEAVE KK2

OUT1 TRANSFER .5,K3,K4

K3 QUEUE LOL3

SEIZE KK3

DEPART LOL3

ADVANCE 30,7

RELEASE KK3

TRANSFER ,OUT2

K4 QUEUE LOL4

ENTER KK4
 DEPART LOL4
 ADVANCE 45,5
 LEAVE KK4

OUT2 QUEUE LOL5
 ENTER KK5
 DEPART LOL5
 ADVANCE 20,5
 LEAVE KK5

OUT3 TERMINATE 1
 START 500

Результат программы №1:

GPSS World Simulation Report - Untitled Model 1.3.1

Saturday, March 25, 2023 01:05:37

| START TIME | END TIME | BLOCKS | FACILITIES | STORAGES |
|------------|----------|--------|------------|----------|
| 0.000 | 5274.916 | 31 | 2 | 3 |

| NAME | VALUE |
|------|-----------|
| K1 | 3.000 |
| K2 | 9.000 |
| K3 | 15.000 |
| K4 | 21.000 |
| KK1 | 10005.000 |
| KK2 | 10000.000 |
| KK3 | 10008.000 |
| KK4 | 10001.000 |
| KK5 | 10002.000 |
| LOL1 | 10004.000 |
| LOL2 | 10003.000 |
| LOL3 | 10007.000 |
| LOL4 | 10006.000 |
| LOL5 | 10009.000 |
| OUT1 | 14.000 |
| OUT2 | 26.000 |
| OUT3 | 31.000 |

| LABEL | LOC | BLOCK TYPE | ENTRY COUNT | CURRENT COUNT | RETRY |
|-------|-----|------------|-------------|---------------|-------|
| | 1 | GENERATE | 756 | 0 | 0 |
| | 2 | TRANSFER | 756 | 0 | 0 |
| K1 | 3 | QUEUE | 387 | 2 | 0 |
| | 4 | SEIZE | 385 | 0 | 0 |
| | 5 | DEPART | 385 | 0 | 0 |
| | 6 | ADVANCE | 385 | 1 | 0 |
| | 7 | RELEASE | 384 | 0 | 0 |
| | 8 | TRANSFER | 384 | 0 | 0 |
| K2 | 9 | QUEUE | 369 | 67 | 0 |
| | 10 | ENTER | 302 | 0 | 0 |
| | 11 | DEPART | 302 | 0 | 0 |
| | 12 | ADVANCE | 302 | 2 | 0 |

| | | | | | |
|------|----|-----------|-----|-----|---|
| | 13 | LEAVE | 300 | 0 | 0 |
| OUT1 | 14 | TRANSFER | 684 | 0 | 0 |
| K3 | 15 | QUEUE | 350 | 172 | 0 |
| | 16 | SEIZE | 178 | 0 | 0 |
| | 17 | DEPART | 178 | 0 | 0 |
| | 18 | ADVANCE | 178 | 1 | 0 |
| | 19 | RELEASE | 177 | 0 | 0 |
| | 20 | TRANSFER | 177 | 0 | 0 |
| K4 | 21 | QUEUE | 334 | 6 | 0 |
| | 22 | ENTER | 328 | 0 | 0 |
| | 23 | DEPART | 328 | 0 | 0 |
| | 24 | ADVANCE | 328 | 3 | 0 |
| | 25 | LEAVE | 325 | 0 | 0 |
| OUT2 | 26 | QUEUE | 502 | 0 | 0 |
| | 27 | ENTER | 502 | 0 | 0 |
| | 28 | DEPART | 502 | 0 | 0 |
| | 29 | ADVANCE | 502 | 2 | 0 |
| | 30 | LEAVE | 500 | 0 | 0 |
| OUT3 | 31 | TERMINATE | 500 | 0 | 0 |

| FACILITY | ENTRIES | UTIL. | AVE. TIME | AVAIL. | OWNER | PEND | INTER | RETRY | DELAY |
|----------|---------|-------|-----------|--------|-------|------|-------|-------|-------|
| KK1 | 385 | 0.720 | 9.871 | 1 | 753 | 0 | 0 | 0 | 2 |
| KK3 | 178 | 0.992 | 29.386 | 1 | 316 | 0 | 0 | 0 | 172 |

| QUEUE | MAX | CONT. | ENTRY | ENTRY(0) | AVE.CONT. | AVE.TIME | AVE. (-0) | RETRY |
|-------|-----|-------|-------|----------|-----------|----------|-----------|-------|
| LOL2 | 71 | 67 | 369 | 2 | 32.530 | 465.023 | 467.557 | 0 |
| LOL1 | 4 | 2 | 387 | 150 | 0.433 | 5.896 | 9.627 | 0 |
| LOL4 | 14 | 6 | 334 | 56 | 4.398 | 69.451 | 83.442 | 0 |
| LOL3 | 173 | 172 | 350 | 1 | 84.586 | 1274.811 | 1278.464 | 0 |
| LOL5 | 1 | 0 | 502 | 502 | 0.000 | 0.000 | 0.000 | 0 |

| STORAGE | CAP. | REM. | MIN. | MAX. | ENTRIES | AVL. | AVE.C. | UTIL. | RETRY | DELAY |
|---------|------|------|------|------|---------|------|--------|-------|-------|-------|
| KK2 | 2 | 0 | 0 | 2 | 302 | 1 | 1.992 | 0.996 | 0 | 67 |
| KK4 | 3 | 0 | 0 | 3 | 328 | 1 | 2.766 | 0.922 | 0 | 6 |
| KK5 | 4 | 2 | 0 | 4 | 502 | 1 | 1.906 | 0.477 | 0 | 0 |

| FEC | XN | PRI | BDT | ASSEM | CURRENT | NEXT | PARAMETER | VALUE |
|-----|----|-----|----------|-------|---------|------|-----------|-------|
| 724 | 0 | | 5279.827 | 724 | 29 | 30 | | |
| 757 | 0 | | 5281.326 | 757 | 0 | 1 | | |
| 753 | 0 | | 5283.807 | 753 | 6 | 7 | | |
| 582 | 0 | | 5284.502 | 582 | 29 | 30 | | |
| 608 | 0 | | 5286.441 | 608 | 12 | 13 | | |
| 316 | 0 | | 5287.179 | 316 | 18 | 19 | | |
| 609 | 0 | | 5290.273 | 609 | 12 | 13 | | |
| 734 | 0 | | 5301.912 | 734 | 24 | 25 | | |
| 586 | 0 | | 5306.474 | 586 | 24 | 25 | | |
| 591 | 0 | | 5306.876 | 591 | 24 | 25 | | |

Код программы №2:

KK2 STORAGE 2

KK4 STORAGE 3

KK5 STORAGE 4

GENERATE 7,5

TRANSFER .5,K1,K2

K1 QUEUE LOL1

SEIZE KK1
DEPART LOL1
ADVANCE 10,3
RELEASE KK1
TRANSFER ,OUT1

K2 QUEUE LOL2
ENTER KK2
DEPART LOL2
ADVANCE 35,8
LEAVE KK2

OUT1 TRANSFER .5,K3,K4

K3 QUEUE LOL3
SEIZE KK3
DEPART LOL3
ADVANCE 30,7
RELEASE KK3
TRANSFER ,OUT2

K4 QUEUE LOL4
ENTER KK4
DEPART LOL4
ADVANCE 45,5
LEAVE KK4

OUT2 QUEUE LOL5
ENTER KK5
DEPART LOL5
ADVANCE 20,5
LEAVE KK5

OUT3 TERMINATE

GENERATE 480

TERMINATE 1

START 1

Результат программы №2:

GPSS World Simulation Report - Untitled Model 1.4.1

Saturday, March 25, 2023 01:07:44

| START TIME | END TIME | BLOCKS | FACILITIES | STORAGES |
|------------|----------|--------|------------|----------|
| 0.000 | 480.000 | 33 | 2 | 3 |

| NAME | VALUE |
|------|-----------|
| K1 | 3.000 |
| K2 | 9.000 |
| K3 | 15.000 |
| K4 | 21.000 |
| KK1 | 10005.000 |
| KK2 | 10000.000 |
| KK3 | 10008.000 |
| KK4 | 10001.000 |
| KK5 | 10002.000 |
| LOL1 | 10004.000 |
| LOL2 | 10003.000 |
| LOL3 | 10007.000 |
| LOL4 | 10006.000 |
| LOL5 | 10009.000 |
| OUT1 | 14.000 |
| OUT2 | 26.000 |
| OUT3 | 31.000 |

| LABEL | LOC | BLOCK TYPE | ENTRY COUNT | CURRENT COUNT | RETRY |
|-------|-----|------------|-------------|---------------|-------|
| K1 | 1 | GENERATE | 70 | 0 | 0 |
| | 2 | TRANSFER | 70 | 0 | 0 |
| | 3 | QUEUE | 32 | 0 | 0 |
| | 4 | SEIZE | 32 | 0 | 0 |
| | 5 | DEPART | 32 | 0 | 0 |
| | 6 | ADVANCE | 32 | 0 | 0 |
| | 7 | RELEASE | 32 | 0 | 0 |
| K2 | 8 | TRANSFER | 32 | 0 | 0 |
| | 9 | QUEUE | 38 | 11 | 0 |
| | 10 | ENTER | 27 | 0 | 0 |
| | 11 | DEPART | 27 | 0 | 0 |
| | 12 | ADVANCE | 27 | 2 | 0 |

| | | | | | |
|------|----|-----------|----|----|---|
| | 13 | LEAVE | 25 | 0 | 0 |
| OUT1 | 14 | TRANSFER | 57 | 0 | 0 |
| K3 | 15 | QUEUE | 32 | 18 | 0 |
| | 16 | SEIZE | 14 | 0 | 0 |
| | 17 | DEPART | 14 | 0 | 0 |
| | 18 | ADVANCE | 14 | 1 | 0 |
| | 19 | RELEASE | 13 | 0 | 0 |
| | 20 | TRANSFER | 13 | 0 | 0 |
| K4 | 21 | QUEUE | 25 | 0 | 0 |
| | 22 | ENTER | 25 | 0 | 0 |
| | 23 | DEPART | 25 | 0 | 0 |
| | 24 | ADVANCE | 25 | 1 | 0 |
| | 25 | LEAVE | 24 | 0 | 0 |
| OUT2 | 26 | QUEUE | 37 | 0 | 0 |
| | 27 | ENTER | 37 | 0 | 0 |
| | 28 | DEPART | 37 | 0 | 0 |
| | 29 | ADVANCE | 37 | 2 | 0 |
| | 30 | LEAVE | 35 | 0 | 0 |
| OUT3 | 31 | TERMINATE | 35 | 0 | 0 |
| | 32 | GENERATE | 1 | 0 | 0 |
| | 33 | TERMINATE | 1 | 0 | 0 |

| FACILITY | ENTRIES | UTIL. | AVE. TIME | AVAIL. | OWNER | PEND | INTER | RETRY | DELAY |
|----------|---------|-------|-----------|--------|-------|------|-------|-------|-------|
| KK1 | 32 | 0.642 | 9.626 | 1 | 0 | 0 | 0 | 0 | 0 |
| KK3 | 14 | 0.908 | 31.126 | 1 | 34 | 0 | 0 | 0 | 18 |

| QUEUE | MAX | CONT. | ENTRY | ENTRY(0) | AVE.CONT. | AVE.TIME | AVE.(-0) | RETRY |
|-------|-----|-------|-------|----------|-----------|----------|----------|-------|
| LOL2 | 12 | 11 | 38 | 2 | 5.485 | 69.286 | 73.136 | 0 |
| LOL1 | 3 | 0 | 32 | 13 | 0.461 | 6.918 | 11.652 | 0 |
| LOL4 | 2 | 0 | 25 | 17 | 0.166 | 3.193 | 9.978 | 0 |
| LOL3 | 18 | 18 | 32 | 1 | 7.313 | 109.691 | 113.229 | 0 |
| LOL5 | 1 | 0 | 37 | 37 | 0.000 | 0.000 | 0.000 | 0 |

| STORAGE | CAP. | REM. | MIN. | MAX. | ENTRIES | AVL. | AVE.C. | UTIL. | RETRY | DELAY |
|---------|------|------|------|------|---------|------|--------|-------|-------|-------|
| KK2 | 2 | 0 | 0 | 2 | 27 | 1 | 1.907 | 0.954 | 0 | 11 |
| KK4 | 3 | 2 | 0 | 3 | 25 | 1 | 2.216 | 0.739 | 0 | 0 |
| KK5 | 4 | 2 | 0 | 3 | 37 | 1 | 1.472 | 0.368 | 0 | 0 |

| FEC | XN | PRI | BDT | ASSEM | CURRENT | NEXT | PARAMETER | VALUE |
|-----|----|-----|---------|-------|---------|------|-----------|-------|
| 34 | 0 | | 482.102 | 34 | 18 | 19 | | |
| 50 | 0 | | 486.543 | 50 | 12 | 13 | | |
| 72 | 0 | | 488.676 | 72 | 0 | 1 | | |
| 62 | 0 | | 495.540 | 62 | 29 | 30 | | |
| 42 | 0 | | 498.271 | 42 | 29 | 30 | | |
| 55 | 0 | | 514.784 | 55 | 12 | 13 | | |
| 45 | 0 | | 525.583 | 45 | 24 | 25 | | |
| 73 | 0 | | 960.000 | 73 | 0 | 32 | | |

Код программы №3:

KK2 STORAGE 2
KK4 STORAGE 3
KK5 STORAGE 4

GENERATE 7,5

TRANSFER .5,K1,K2

K1 TEST L Q\$LOL1,5,COUNTER

```

        QUEUE LOL1
        SEIZE KK1
        DEPART LOL1
        ADVANCE 10,3
        RELEASE KK1
        TRANSFER ,OUT1
K2      TEST L Q$LOL2,5,COUNTER
        QUEUE LOL2
        ENTER KK2
        DEPART LOL2
        ADVANCE 35,8
        LEAVE KK2
OUT1    TRANSFER .5,K3,K4
K3      TEST L Q$LOL3,5,COUNTER
        QUEUE LOL3
        SEIZE KK3
        DEPART LOL3
        ADVANCE 30,7
        RELEASE KK3
        TRANSFER      ,OUT2
K4      TEST L Q$LOL4,5,COUNTER
        QUEUE LOL4
        ENTER KK4
        DEPART LOL4
        ADVANCE 45,5
        LEAVE KK4
OUT2    TEST L Q$LOL5,5,COUNTER
        QUEUE LOL5
        ENTER KK5
        DEPART LOL5
        ADVANCE 20,5
        LEAVE KK5

```

OUT3 TERMINATE

GENERATE 720

TERMINATE 1

START 3

COUNTER TERMINATE

Результат программы №3:

GPSS World Simulation Report - Untitled Model 1.5.1

Saturday, March 25, 2023 01:10:03

| | | | | |
|------------|----------|--------|------------|----------|
| START TIME | END TIME | BLOCKS | FACILITIES | STORAGES |
| 0.000 | 2160.000 | 39 | 2 | 3 |

| | |
|---------|-----------|
| NAME | VALUE |
| COUNTER | 39.000 |
| K1 | 3.000 |
| K2 | 10.000 |
| K3 | 17.000 |
| K4 | 24.000 |
| KK1 | 10005.000 |
| KK2 | 10000.000 |
| KK3 | 10008.000 |
| KK4 | 10001.000 |
| KK5 | 10002.000 |
| LOL1 | 10004.000 |
| LOL2 | 10003.000 |
| LOL3 | 10007.000 |
| LOL4 | 10006.000 |
| LOL5 | 10009.000 |
| OUT1 | 16.000 |
| OUT2 | 30.000 |
| OUT3 | 36.000 |

| LABEL | LOC | BLOCK TYPE | ENTRY COUNT | CURRENT COUNT | RETRY |
|-------|-----|------------|-------------|---------------|-------|
| K1 | 1 | GENERATE | 320 | 0 | 0 |
| | 2 | TRANSFER | 320 | 0 | 0 |
| | 3 | TEST | 160 | 0 | 0 |
| | 4 | QUEUE | 160 | 0 | 0 |
| | 5 | SEIZE | 160 | 0 | 0 |
| | 6 | DEPART | 160 | 0 | 0 |
| | 7 | ADVANCE | 160 | 1 | 0 |
| | 8 | RELEASE | 159 | 0 | 0 |
| | 9 | TRANSFER | 159 | 0 | 0 |
| K2 | 10 | TEST | 160 | 0 | 0 |
| | 11 | QUEUE | 131 | 5 | 0 |
| | 12 | ENTER | 126 | 0 | 0 |

| | | | | | |
|---------|----|-----------|-----|---|---|
| | 13 | DEPART | 126 | 0 | 0 |
| | 14 | ADVANCE | 126 | 2 | 0 |
| | 15 | LEAVE | 124 | 0 | 0 |
| OUT1 | 16 | TRANSFER | 283 | 0 | 0 |
| K3 | 17 | TEST | 145 | 0 | 0 |
| | 18 | QUEUE | 77 | 4 | 0 |
| | 19 | SEIZE | 73 | 0 | 0 |
| | 20 | DEPART | 73 | 0 | 0 |
| | 21 | ADVANCE | 73 | 1 | 0 |
| | 22 | RELEASE | 72 | 0 | 0 |
| | 23 | TRANSFER | 72 | 0 | 0 |
| K4 | 24 | TEST | 138 | 0 | 0 |
| | 25 | QUEUE | 132 | 1 | 0 |
| | 26 | ENTER | 131 | 0 | 0 |
| | 27 | DEPART | 131 | 0 | 0 |
| | 28 | ADVANCE | 131 | 3 | 0 |
| | 29 | LEAVE | 128 | 0 | 0 |
| OUT2 | 30 | TEST | 200 | 0 | 0 |
| | 31 | QUEUE | 200 | 0 | 0 |
| | 32 | ENTER | 200 | 0 | 0 |
| | 33 | DEPART | 200 | 0 | 0 |
| | 34 | ADVANCE | 200 | 2 | 0 |
| | 35 | LEAVE | 198 | 0 | 0 |
| OUT3 | 36 | TERMINATE | 198 | 0 | 0 |
| | 37 | GENERATE | 3 | 0 | 0 |
| | 38 | TERMINATE | 3 | 0 | 0 |
| COUNTER | 39 | TERMINATE | 103 | 0 | 0 |

| FACILITY | ENTRIES | UTIL. | AVE. TIME | AVAIL. | OWNER | PEND | INTER | RETRY | DELAY |
|----------|---------|-------|-----------|--------|-------|------|-------|-------|-------|
| KK1 | 160 | 0.724 | 9.779 | 1 | 323 | 0 | 0 | 0 | 0 |
| KK3 | 73 | 0.980 | 28.983 | 1 | 301 | 0 | 0 | 0 | 4 |

| QUEUE | MAX | CONT. | ENTRY | ENTRY(0) | AVE.CONT. | AVE.TIME | AVE.(-0) | RETRY |
|-------|-----|-------|-------|----------|-----------|----------|----------|-------|
| LOL2 | 5 | 5 | 131 | 8 | 3.224 | 53.166 | 56.624 | 0 |
| LOL1 | 3 | 0 | 160 | 54 | 0.399 | 5.391 | 8.138 | 0 |
| LOL4 | 5 | 1 | 132 | 31 | 1.682 | 27.522 | 35.969 | 0 |
| LOL3 | 5 | 4 | 77 | 1 | 4.346 | 121.908 | 123.512 | 0 |
| LOL5 | 1 | 0 | 200 | 200 | 0.000 | 0.000 | 0.000 | 0 |

| STORAGE | CAP. | REM. | MIN. | MAX. | ENTRIES | AVL. | AVE.C. | UTIL. | RETRY | DELAY |
|---------|------|------|------|------|---------|------|--------|-------|-------|-------|
| KK2 | 2 | 0 | 0 | 2 | 126 | 1 | 1.956 | 0.978 | 0 | 5 |
| KK4 | 3 | 0 | 0 | 3 | 131 | 1 | 2.685 | 0.895 | 0 | 1 |
| KK5 | 4 | 2 | 0 | 4 | 200 | 1 | 1.863 | 0.466 | 0 | 0 |

| FEC | XN | PRI | BDT | ASSEM | CURRENT | NEXT | PARAMETER | VALUE |
|-----|----|-----|----------|-------|---------|------|-----------|-------|
| 324 | 0 | | 2165.582 | 324 | 0 | 1 | | |
| 294 | 0 | | 2165.688 | 294 | 34 | 35 | | |
| 297 | 0 | | 2169.590 | 297 | 28 | 29 | | |
| 309 | 0 | | 2170.465 | 309 | 14 | 15 | | |
| 301 | 0 | | 2171.936 | 301 | 21 | 22 | | |
| 323 | 0 | | 2172.269 | 323 | 7 | 8 | | |
| 313 | 0 | | 2173.095 | 313 | 14 | 15 | | |
| 300 | 0 | | 2181.904 | 300 | 34 | 35 | | |
| 315 | 0 | | 2185.375 | 315 | 28 | 29 | | |
| 317 | 0 | | 2198.442 | 317 | 28 | 29 | | |
| 325 | 0 | | 2880.000 | 325 | 0 | 37 | | |