

Question #1

Student GPSS/H Release 3.70 (EC236) 17 Feb 2022 14:09:43 File: assn2_1.gps

Line#	Stmnt#	If Do	Block#	*Loc	Operation	A,B,C,D,E,F,G	Comments
1	1				SIMULATE		
2	2			*	Define Ampervariables		
3	3				INTEGER	&LIMIT	
4	4				LET	&LIMIT=10000	
5	5			*	Block Statements		
6	6		1		GENERATE	RVEXPO(1,5)	
7	7		2		QUEUE	LINE	
8	8		3		SEIZE	TELLER	
9	9		4		DEPART	LINE	
10	10		5		ADVANCE	RVEXPO(2,3)	
11	11		6		RELEASE	TELLER	
12	12		7		TERMINATE	1	
13	13				START	&LIMIT	
14	14				END		

Entity Dictionary (in ascending order by entity number; "*" => value conflict.)

Facilities: 1=TELLER

Queues: 1=LINE

Random Numbers: 1 2

Integer &Vars: 1=LIMIT

Symbol	Value	EQU Defns	Context	References by Statement Number
TELLER	1		Facility	8 11
LINE	1		Queue	7 9
1	1		Random Nmbr	6
2	2		Random Nmbr	10
LIMIT	1	3	Integer	4 13

Storage Requirements (Bytes)

Compiled Code:	298
Compiled Data:	40
Miscellaneous:	0
Entities:	464
Common:	10000

Total:	10802

GPSS/H Model Size:

Control Statements 4
Blocks 7

Simulation begins.

•

Relative Clock: 50306.2413 Absolute Clock: 50306.2413

Block	Current	Total
1		10001
2	1	10001
3		10000
4		10000
5		10000
6		10000
7		10000

--Avg-Util-During--

Facility	Total	Avail	Unavl	Entries	Average	Current	Percent	Seizing
Preempting	Time	Time	Time		Time/Xact	Status	Avail	Xact
	Xact							
TELLER	0.595			10000	2.994	AVAIL		

Queue	Maximum	Average	Total	Zero	Percent
Average	\$Average	Qtable	Current		
	Contents	Contents	Entries	Entries	Zeros
Time/Unit	Time/Unit	Number	Contents		
LINE	17	0.938	10001	3997	40.0
4.720	7.862		1		

Random	Antithetic	Initial	Current	Sample	Chi-Square
Stream	Variates	Position	Position	Count	Uniformity
1	OFF	100000	110002	10002	1.00
2	OFF	200000	210000	10000	0.84

Status of Common Storage

9608 bytes available
392 in use
2552 used (max)

•
Simulation complete. Absolute Clock: 50306.2413

Total Block Executions: 70002

Blocks / second: 29771029

Microseconds / Block: 0.03

Elapsed Time Used (Sec)

Pass1: 0.00
Sym/Xref 0.00
Pass2: 0.00
Load/Ctrl: 0.00
Execution: 0.00
Output: 0.00

Total: 0.00

Student GPSS/H Release 3.70 (EC236) 17 Feb 2022 14:11:50 File:
assn2_1.gps

Line#	Stmt#	If Do	Block#	*Loc	Operation	A,B,C,D,E,F,G	Comments
1	1				SIMULATE		
2	2			*	Define Ampervariables		
3	3				INTEGER	&LIMIT	
4	4				LET	&LIMIT=10000	
5	5			*	Block Statements		
6	6		1		GENERATE	RVEXPO(1,4)	
7	7		2		QUEUE	LINE	
8	8		3		SEIZE	TELLER	
9	9		4		DEPART	LINE	
10	10		5		ADVANCE	RVEXPO(2,3)	
11	11		6		RELEASE	TELLER	
12	12		7		TERMINATE	1	
13	13				START	&LIMIT	
14	14				END		

•
Entity Dictionary (in ascending order by entity number; "*" => value conflict.)

Facilities: 1=TELLER

Queues: 1=LINE

Random Numbers: 1 2

Integer &Vars: 1=LIMIT

•

Symbol	Value	EQU Defns	Context	References by Statement Number
TELLER	1		Facility	8 11

LINE	1	Queue	7	9
1	1	Random Nubr	6	
2	2	Random Nubr	10	
LIMIT	1	3 Integer	4	13

Storage Requirements (Bytes)

Compiled Code:	298
Compiled Data:	40
Miscellaneous:	0
Entities:	464
Common:	10000

Total:	10802

GPSS/H Model Size:

Control Statements	4
Blocks	7

Simulation begins.

•

Relative Clock: 40250.2984 Absolute Clock: 40250.2984

Block	Current	Total
1		10003
2	3	10003
3		10000
4		10000
5		10000
6		10000
7		10000

--Avg-Util-During--

Facility	Total	Avail	Unavl	Entries	Average	Current	Percent	Seizing
Preempting								
	Time	Time	Time		Time/Xact	Status	Avail	Xact
Xact								
TELLER	0.744			10000	2.994	AVAIL		

Queue	Maximum	Average	Total	Zero	Percent
Average	\$Average	Qtable	Current		

Time/Unit	Contents Time/Unit	Contents Number	Entries Contents	Entries	Zeros
LINE	27	2.355	10003	2481	24.8
9.477	12.603		3		

Random Stream	Antithetic Variates	Initial Position	Current Position	Sample Count	Chi-Square Uniformity
1	OFF	100000	110004	10004	1.00
2	OFF	200000	210000	10000	0.84

Status of Common Storage

9352 bytes available
648 in use
3832 used (max)

•
Simulation complete. Absolute Clock: 40250.2984

Total Block Executions: 70006

Blocks / second: 27549431

Microseconds / Block: 0.04

Elapsed Time Used (Sec)

Pass1:	0.00
Sym/Xref	0.00
Pass2:	0.00
Load/Ctrl:	0.00
Execution:	0.00
Output:	0.00

Total:	0.00

Student GPSS/H Release 3.70 (EC236) 17 Feb 2022 14:13:43 File:
assn2_1.gps

Line#	Stmt#	If Do	Block#	*Loc	Operation	A,B,C,D,E,F,G	Comments
1	1				SIMULATE		
2	2			*	Define Ampervariables		
3	3				INTEGER	&LIMIT	
4	4				LET	&LIMIT=10000	
5	5			*	Block Statements		
6	6		1		GENERATE	RVEXPO(1,10)	
7	7		2		QUEUE	LINE	
8	8		3		SEIZE	TELLER	
9	9		4		DEPART	LINE	

10	10	5	ADVANCE	RVEXPO(2,3)
11	11	6	RELEASE	TELLER
12	12	7	TERMINATE	1
13	13		START	&LIMIT
14	14		END	

•

Entity Dictionary (in ascending order by entity number; "*" => value conflict.)

Facilities: 1=TELLER

Queues: 1=LINE

Random Numbers: 1 2

Integer &Vars: 1=LIMIT

•

Symbol	Value	EQU Defns	Context	References by Statement Number
TELLER	1		Facility	8 11
LINE	1		Queue	7 9
1	1		Random Nmbr	6
2	2		Random Nmbr	10
LIMIT	1	3	Integer	4 13

Storage Requirements (Bytes)

Compiled Code:	298
Compiled Data:	40
Miscellaneous:	0
Entities:	464
Common:	10000

Total:	10802

GPSS/H Model Size:

Control Statements	4
Blocks	7

Simulation begins.

•

Relative Clock: 1.0061E+05 Absolute Clock: 1.0061E+05

Block	Current	Total
1		10000
2		10000
3		10000

4	10000
5	10000
6	10000
7	10000

--Avg-Util-During--

Facility	Total	Avail	Unavl	Entries	Average	Current	Percent	Seizing
Preempting								
	Time	Time	Time		Time/Xact	Status	Avail	Xact
Xact								
TELLER	0.298			10000	2.994	AVAIL		

Queue	Maximum	Average	Total	Zero	Percent
Average	\$Average	Qtable	Current		
	Contents	Contents	Entries	Entries	Zeros
Time/Unit	Time/Unit	Number	Contents		
LINE	7	0.130	10000	7018	70.2
1.304	4.374		0		

Random	Antithetic	Initial	Current	Sample	Chi-Square
Stream	Variates	Position	Position	Count	Uniformity
1	OFF	100000	110001	10001	0.99
2	OFF	200000	210000	10000	0.84

Status of Common Storage

9736 bytes available
264 in use
1272 used (max)

•
simulation complete. Absolute Clock: 1.0061E+05

Total Block Executions: 70000

Blocks / second: 32142666

Microseconds / Block: 0.03

Elapsed Time Used (Sec)

Pass1:	0.00
Sym/Xref	0.00
Pass2:	0.00
Load/Ctrl:	0.00
Execution:	0.00

Output: 0.00

Total: 0.00

Student GPSS/H Release 3.70 (EC236) 17 Feb 2022 14:16:23 File:
assn2_1.gps

Line#	Stmt#	If Do	Block#	*Loc	Operation	A,B,C,D,E,F,G	Comments
1	1				SIMULATE		
2	2			*	Define Ampervariables		
3	3				INTEGER	&LIMIT	
4	4				LET	&LIMIT=10000	
5	5			*	Block Statements		
6	6		1		GENERATE	RVEXPO(1,5)	
7	7		2		QUEUE	LINE	
8	8		3		ENTER	1,1	
9	9		4		DEPART	LINE	
10	10		5		ADVANCE	RVEXPO(2,4)	
11	11		6		LEAVE	1,1	
12	12				STORAGE	S1,2	
13	13		7		TERMINATE	1	
14	14				START	&LIMIT	
15	15				END		

Entity Dictionary (in ascending order by entity number; "*" => value conflict.)

Queues: 1=LINE

Storages: 1

Random Numbers: 1 2

Integer &Vars: 1=LIMIT

Symbol	Value	EQU Defns	Context	References by Statement Number	
LINE	1		Queue	7	9
1	1	12	Storage	8	11
1	1		Random Nmbr	6	
2	2		Random Nmbr	10	
LIMIT	1	3	Integer	4	14

Storage Requirements (Bytes)

Compiled Code:	330
Compiled Data:	40
Miscellaneous:	0
Entities:	464
Common:	10000

Total:	10834

GPSS/H Model Size:

Control Statements	5
Blocks	7

Simulation begins.

•

Relative Clock: 50306.5806 Absolute Clock: 50306.5806

Block	Current	Total
1		10001
2		10001
3		10001
4		10001
5	1	10001
6		10000
7		10000

--Avg-Util-During--

Storage Capacity	Total Average Time	Avail Average Time	Unavl Current Time	Entries Maximum Contents	Average Time/Unit	Current Status	Percent Avail
	Contents	Contents	Contents	Contents			
1	0.397			10001	3.992	AVAIL	100.0
2	0.794		1	2			

Queue Average	Maximum \$Average Contents	Average Qtable Contents	Total Current Entries	Zero Entries	Percent Zeros
Time/Unit	Time/Unit	Number	Contents		
LINE	9	0.158	10001	7734	77.3
0.795	3.505		0		

Random Stream	Antithetic Variates	Initial Position	Current Position	Sample Count	Chi-Square Uniformity
1	OFF	100000	110002	10002	1.00
2	OFF	200000	210001	10001	0.85

Status of Common Storage

9624 bytes available
376 in use

1640 used (max)

•
simulation complete. Absolute Clock: 50306.5806

Total Block Executions: 70005

Blocks / second: 30577919

Microseconds / Block: 0.03

Elapsed Time Used (Sec)

Pass1:	0.00
Sym/Xref	0.00
Pass2:	0.00
Load/Ctrl:	0.00
Execution:	0.00
Output:	0.00

Total:	0.00

Question #2

Student GPSS/H Release 3.70 (EC236) 17 Feb 2022 13:27:46 File:
assn2_2.gps

Line#	Stmt#	If Do	Block#	*Loc	Operation	A,B,C,D,E,F,G	Comments
1	1				SIMULATE		
2	2				INITIAL	X2,15	
3	3			* Define	Ampervariables		
4	4				INTEGER	&LIMIT	
5	5				LET	&LIMIT=60000	
6	6			* Block	Statements		
7	7		1		GENERATE	RVEXPO(1,X2)	
8	8		2		TRANSFER	.25,FEM,MAL	
9	9		3	FEM	QUEUE	FEMALE	
10	10		4		ENTER	1,1	
11	11		5		DEPART	FEMALE	
12	12		6		ADVANCE	10,3	
13	13		7		LEAVE	1,1	
14	14		8		TRANSFER	,SKIP	
15	15		9	MAL	QUEUE	MALE	
16	16		10		SEIZE	MALE	
17	17		11		DEPART	MALE	
18	18		12		ADVANCE	8,2	
19	19		13		RELEASE	MALE	
20	20		14	SKIP	TERMINATE		
21	21			*			
22	22				STORAGE	S1,2	
23	23			*			

24	24	15	GENERATE	&LIMIT
25	25	16	TERMINATE	1
26	26		START	1
27	27		END	

Entity Dictionary (in ascending order by entity number; "*" => value conflict.)

Facilities: 2=MALE

Queues: 1=FEMALE 2=MALE

Storages: 1

Fullword Savexes: 2

Random Numbers: 1

Integer &Vars: 1=LIMIT

Symbol	Value	EQU Defns	Context	References by Statement Number
FEM	3	9	Block	8
MAL	9	15	Block	8
SKIP	14	20	Block	14
MALE	2		Facility	16 19
FEMALE	1		Queue	9 11
MALE	2		Queue	15 17
1	1	22	Storage	10 13
2	2		Fullword SvX	2 7
1	1		Random Nmbr	7
LIMIT	1	4	Integer	5 24

Storage Requirements (Bytes)

Compiled Code:	546
Compiled Data:	80
Miscellaneous:	0
Entities:	596
Common:	10000

Total:	11222

GPSS/H Model Size:

Control Statements	6
Blocks	16

Simulation begins.

•

Relative clock: 60000.0000 Absolute clock: 60000.0000

Block	Current	Total	Block	Current	Total
1		4028	11		994
2		4028	12		994
FEM		3034	13		994
4		3034	SKIP		4028
5		3034	15		1
6		3034	16		1
7		3034			
8		3034			
MAL		994			
10		994			

--Avg-Util-During--

Facility	Total	Avail	Unavl	Entries	Average	Current	Percent	Seizing
Preempting	Time	Time	Time		Time/Xact	Status	Avail	Xact
Xact								
MALE	0.133			994	8.052	AVAIL		

--Avg-Util-During--

Storage	Total	Avail	Unavl	Entries	Average	Current	Percent
Capacity	Average	Current	Maximum				
	Time	Time	Time		Time/Unit	Status	Avail
	Contents	Contents	Contents				
1	0.252			3034	9.981	AVAIL	100.0
2	0.505		0	2			

Queue	Maximum	Average	Total	Zero	Percent
Average	\$Average	Qtable	Current		
	Contents	Contents	Entries	Entries	Zeros
Time/Unit	Time/Unit	Number	Contents		
FEMALE	4	0.021	3034	2726	89.8
0.417	4.109		0		
MALE	2	0.009	994	875	88.0
0.532	4.444		0		

Non-zero Fullword Savevalues: (NAME : VALUE)

2: 15

Random Stream	Antithetic Variates	Initial Position	Current Position	Sample Count	Chi-Square Uniformity
1	OFF	100000	112085	12085	0.97

Status of Common Storage

9560 bytes available
440 in use
1176 used (max)

•
Simulation complete. Absolute Clock: 60000.0000

Total Block Executions: 35260

Blocks / second: 38241104

Microseconds / Block: 0.03

Elapsed Time Used (Sec)

Pass1:	0.00
Sym/Xref	0.00
Pass2:	0.00
Load/Ctrl:	0.00
Execution:	0.00
Output:	0.00

Total:	0.00

Student GPSS/H Release 3.70 (EC236) 17 Feb 2022 13:39:45 File: assn2_2.gps

Line#	Stmt#	If Do	Block#	*Loc	Operation	A,B,C,D,E,F,G	Comments
1	1				SIMULATE		
2	2				INITIAL	X2,15	
3	3				* Define Ampervariables		
4	4				INTEGER	&LIMIT	
5	5				LET	&LIMIT=60000	
6	6				* Block Statements		
7	7		1		GENERATE	RVEXPO(1,X2)	
8	8		2		TRANSFER	.50,FEM,MAL	
9	9		3	FEM	QUEUE	FEMALE	
10	10		4		ENTER	1,1	
11	11		5		DEPART	FEMALE	
12	12		6		ADVANCE	10,3	
13	13		7		LEAVE	1,1	
14	14		8		TRANSFER	,SKIP	
15	15		9	MAL	QUEUE	MALE	
16	16		10		SEIZE	MALE	

17	17	11	DEPART	MALE
18	18	12	ADVANCE	8,2
19	19	13	RELEASE	MALE
20	20	14	SKIP	TERMINATE
21	21	*		
22	22		STORAGE	S1,2
23	23	*		
24	24	15	GENERATE	&LIMIT
25	25	16	TERMINATE	1
26	26		START	1
27	27		END	

Entity Dictionary (in ascending order by entity number; "*" => value conflict.)

Facilities: 2=MALE

Queues: 1=FEMALE 2=MALE

Storages: 1

Fullword Savexes: 2

Random Numbers: 1

Integer &Vars: 1=LIMIT

Symbol	Value	EQU Defns	Context	References by Statement Number
FEM	3	9	Block	8
MAL	9	15	Block	8
SKIP	14	20	Block	14
MALE	2		Facility	16 19
FEMALE	1		Queue	9 11
MALE	2		Queue	15 17
1	1	22	Storage	10 13
2	2		Fullword SvX	2 7
1	1		Random Nmbr	7
LIMIT	1	4	Integer	5 24

Storage Requirements (Bytes)

Compiled Code:	546
Compiled Data:	80
Miscellaneous:	0
Entities:	596
Common:	10000

Total:	11222

GPSS/H Model Size:

Control Statements 6
Blocks 16

Simulation begins.

•
Relative Clock: 60000.0000 Absolute Clock: 60000.0000

Block	Current	Total	Block	Current	Total
1		4030	11		1991
2		4030	12		1991
FEM		2039	13		1991
4		2039	SKIP		4030
5		2039	15		1
6		2039	16		1
7		2039			
8		2039			
MAL		1991			
10		1991			

--Avg-Util-During--

Facility	Total	Avail	Unavl	Entries	Average	Current	Percent	Seizing
Preempting	Time	Time	Time		Time/Xact	Status	Avail	Xact
Xact								
MALE	0.267			1991	8.033	AVAIL		

--Avg-Util-During--

Storage	Total	Avail	Unavl	Entries	Average	Current	Percent
Capacity	Average	Current	Maximum				
	Time	Time	Time		Time/Unit	Status	Avail
Contents	Contents	Contents					
1	0.170			2039	9.985	AVAIL	100.0
2	0.339		0	2			

Queue	Maximum	Average	Total	Zero	Percent
Average	\$Average	Qtable	Current		
	Contents	Contents	Entries	Entries	Zeros
Time/Unit	Time/Unit	Number	Contents		
FEMALE	2	0.005	2039	1946	95.4
0.158	3.456		0		
MALE	3	0.045	1991	1473	74.0
1.370	5.267		0		

Non-zero Fullword Savevalues: (NAME : VALUE)

2: 15

Random Stream	Antithetic Variates	Initial Position	Current Position	Sample Count	Chi-Square Uniformity
1	OFF	100000	112091	12091	0.97

Status of Common Storage

9560 bytes available

440 in use

1160 used (max)

•

Simulation complete. Absolute Clock: 60000.0000

Total Block Executions: 34281

Blocks / second: 29755186

Microseconds / Block: 0.03

Elapsed Time Used (Sec)

Pass1:	0.00
Sym/Xref	0.00
Pass2:	0.00
Load/Ctrl:	0.00
Execution:	0.00
Output:	0.00

Total:	0.00

Student GPSS/H Release 3.70 (EC236) 17 Feb 2022 13:52:56 File:
assn2_2.gps

Line#	Stmt#	If Do	Block#	*Loc	Operation	A,B,C,D,E,F,G	Comments
1	1				SIMULATE		
2	2				INITIAL	X2,15	
3	3				* Define Ampervariables		
4	4				INTEGER	&LIMIT	
5	5				LET	&LIMIT=60000	
6	6				* Block Statements		
7	7		1		GENERATE	RVEXPO(1,X2)	
8	8		2		TRANSFER	.75,FEM,MAL	
9	9		3	FEM	QUEUE	FEMALE	

10	10	4		ENTER	1,1
11	11	5		DEPART	FEMALE
12	12	6		ADVANCE	10,3
13	13	7		LEAVE	1,1
14	14	8		TRANSFER	,SKIP
15	15	9	MAL	QUEUE	MALE
16	16	10		SEIZE	MALE
17	17	11		DEPART	MALE
18	18	12		ADVANCE	8,2
19	19	13		RELEASE	MALE
20	20	14	SKIP	TERMINATE	
21	21	*			
22	22			STORAGE	S1,2
23	23	*			
24	24	15		GENERATE	&LIMIT
25	25	16		TERMINATE	1
26	26			START	1
27	27			END	

Entity Dictionary (in ascending order by entity number; "*" => value conflict.)

Facilities: 2=MALE

Queues: 1=FEMALE 2=MALE

Storages: 1

Fullword Savexes: 2

Random Numbers: 1

Integer &Vars: 1=LIMIT

Symbol	Value	EQU Defns	Context	References by Statement Number	
FEM	3	9	Block	8	
MAL	9	15	Block	8	
SKIP	14	20	Block	14	
MALE	2		Facility	16	19
FEMALE	1		Queue	9	11
MALE	2		Queue	15	17
1	1	22	Storage	10	13
2	2		Fullword SvX	2	7
1	1		Random Nmbr	7	
LIMIT	1	4	Integer	5	24

Storage Requirements (Bytes)

Compiled Code: 546

Compiled Data: 80

```

Miscellaneous:      0
Entities:           596
Common:             10000
-----
Total:              11222

```

GPSS/H Model Size:

```

Control Statements      6
Blocks                  16

```

Simulation begins.

```

•
Relative Clock: 60000.0000   Absolute Clock: 60000.0000

```

Block	Current	Total	Block	Current	Total
1		4011	11		2992
2		4011	12	1	2992
FEM		1019	13		2991
4		1019	SKIP		4010
5		1019	15		1
6		1019	16		1
7		1019			
8		1019			
MAL		2992			
10		2992			

--Avg-Util-During--

Facility	Total	Avail	Unavl	Entries	Average	Current	Percent	Seizing
Preempting								
	Time	Time	Time		Time/Xact	Status	Avail	Xact
Xact								
MALE	0.401			2992	8.036	AVAIL		4012

--Avg-Util-During--

Storage	Total	Avail	Unavl	Entries	Average	Current	Percent
Capacity	Average		Current	Maximum			
	Time	Time	Time		Time/Unit	Status	Avail
Contents		Contents	Contents				
1	0.084			1019	9.889	AVAIL	100.0
2	0.168		0	2			

Queue	Maximum	Average	Total	Zero	Percent
Average	\$Average	Qtable	Current		

Time/Unit	Contents Time/Unit	Contents Number	Entries Contents	Entries	Zeros
FEMALE	1	0.000	1019	1009	99.0
0.024	2.417		0		
MALE	6	0.132	2992	1812	60.6
2.654	6.730		0		

Non-zero Fullword Savevalues: (NAME : VALUE)

2: 15

Random Stream	Antithetic Variates	Initial Position	Current Position	Sample Count	Chi-Square Uniformity
1	OFF	100000	112034	12034	0.97

Status of Common Storage

9448 bytes available
552 in use
1320 used (max)

• simulation complete. Absolute Clock: 60000.0000

Total Block Executions: 33107

Blocks / second: 35849051

Microseconds / Block: 0.03

Elapsed Time Used (Sec)

Pass1:	0.00
Sym/Xref	0.00
Pass2:	0.00
Load/Ctrl:	0.00
Execution:	0.00
Output:	0.00

Total:	0.00

Question #3:

Student GPSS/H Release 3.70 (EC236) 17 Feb 2022 14:32:30 File: assn2_3.gps

Line#	Stmt#	If Do	Block#	*Loc	Operation	A,B,C,D,E,F,G	Comments
1	1				SIMULATE		
2	2				* Define Ampervariables		
3	3				INTEGER	&LIMIT	
4	4				REAL	&IAT	
5	5				LET	&LIMIT=100	
6	6				LET	&IAT=.208333	
7	7				* Block Statements		
8	8		1		GENERATE	RVEXPO(1,&IAT)	
9	9		2		QUEUE	TOTAL	
10	10		3		TRANSFER	.6,NEW,OLD	
11	11		4	NEW	QUEUE	NEWER	
12	12		5		ENTER	1,1	
13	13		6		SEIZE	TUG	
14	14		7		ADVANCE	.0208333,.00694444	
15	15		8		RELEASE	TUG	
16	16		9		ADVANCE	.8,.1	
17	17		10		DEPART	NEWER	
18	18		11		LEAVE	1,1	
19	19		12		TRANSFER	,FIN	
20	20		13	OLD	QUEUE	OLDER	
21	21		14		ENTER	2,1	
22	22		15		SEIZE	TUG	
23	23		16		ADVANCE	.0208333,.00694444	
24	24		17		RELEASE	TUG	
25	25		18		ADVANCE	1.5,.2	
26	26		19		DEPART	OLDER	
27	27		20		LEAVE	2,1	
28	28		21	FIN	DEPART	TOTAL	
29	29		22		TERMINATE		
30	30			*			
31	31				STORAGE	S1,2/S2,4	
32	32			*			
33	33		23		GENERATE	&LIMIT	
34	34		24		TERMINATE	1	
35	35				START	1	
36	36				END		

Entity Dictionary (in ascending order by entity number; "*" => value conflict.)

Facilities: 1=TUG

Queues: 1=TOTAL 2=NEWER 3=OLDER

Storages: 1 2

Random Numbers: 1

Integer &Vars: 1=LIMIT

Real &Vars: 1=IAT

Symbol	value	EQU Defns	Context	References by Statement Number
FIN	21	28	Block	19
NEW	4	11	Block	10
OLD	13	20	Block	10

TUG	1		Facility	13	15	22	24
NEWER	2		Queue	11	17		
OLDER	3		Queue	20	26		
TOTAL	1		Queue	9	28		
1	1	31	Storage	12	18		
2	2	31	Storage	21	27		
1	1		Random Nmbr	8			
LIMIT	1	3	Integer	5	33		
IAT	1	4	Real	6	8		

Storage Requirements (Bytes)

Compiled Code:	724
Compiled Data:	80
Miscellaneous:	0
Entities:	640
Common:	10000

Total:	11444

GPSS/H Model Size:

Control Statements	6
Blocks	24

Simulation begins.

•

Relative Clock: 100.0000 Absolute Clock: 100.0000

Block	Current	Total	Block	Current	Total	Block	Current	Total
1		459	11		188	FIN		438
2		459	12		188	22		438
3		459	OLD	17	271	23		1
NEW		188	14		254	24		1
5		188	15		254			
6		188	16		254			
7		188	17		254			
8		188	18	4	254			
9		188	19		250			
10		188	20		250			

--Avg-Util-During--

Facility	Total	Avail	Unavl	Entries	Average	Current	Percent	Seizing
Preempting	Time	Time	Time		Time/Xact	Status	Avail	Xact
Xact								
TUG	0.092			442	0.021	AVAIL		

--Avg-Util-During--

Storage	Total	Avail	Unavl	Entries	Average	Current	Percent
Capacity	Average		Current	Maximum			
	Time	Time	Time		Time/Unit	Status	Avail
	Contents	Contents	Contents				
1	0.773			188	0.822	AVAIL	100.0
2	1.546		0	2			
2	0.960			254	1.513	AVAIL	100.0
4	3.842		4	4			

Queue	Maximum	Average	Total	Zero	Percent
Average	\$Average	Qtable	Current		
	Contents	Contents	Entries	Entries	Zeros
Time/Unit	Time/Unit	Number	Contents		
TOTAL	22	13.524	459	0	
2.946	2.946		21		
NEWER	10	2.525	188	0	
1.343	1.343		0		
OLDER	21	10.999	271	0	
4.059	4.059		21		

Random	Antithetic	Initial	Current	Sample	Chi-Square
Stream	Variates	Position	Position	Count	Uniformity
1	OFF	100000	101803	1803	0.65

Status of Common Storage

6536 bytes available
3464 in use
3608 used (max)

Simulation complete. Absolute Clock: 100.0000

Total Block Executions: 5988

Blocks / second: 27701863

Microseconds / Block: 0.04

Elapsed Time Used (Sec)

Pass1:	0.00
Sym/Xref	0.00
Pass2:	0.00
Load/Ctrl:	0.00
Execution:	0.00
Output:	0.00

Total:	0.00

Question #4:

Student GPSS/H Release 3.70 (EC236) 17 Feb 2022 14:25:04 File: assn2_4.gps

Line#	Stmt#	If Do	Block#	*Loc	Operation	A,B,C,D,E,F,G	Comments
1	1				SIMULATE		
2	2				INITIAL	X4,32/X5,25/X6,28	
3	3				* Define Ampervariables		
4	4				INTEGER	&LIMIT	
5	5				REAL	&IAT	
6	6				LET	&LIMIT=120000	
7	7				LET	&IAT=6	
8	8				* Block Statements		
9	9		1		GENERATE	RVEXPO(1,&IAT)	
10	10		2		SEIZE	TRIAGE	
11	11		3		ADVANCE	5,2	
12	12		4		RELEASE	TRIAGE	
13	13		5		TRANSFER	.7,ERR,REG	
14	14		6	ERR	SEIZE	SERIOUS	
15	15		7		ADVANCE	20,3	
16	16		8		RELEASE	SERIOUS	
17	17		9		TRANSFER	,DIS	
18	18		10	REG	SELECT MIN	5,4,6,,Q	
19	19		11		QUEUE	*5	
20	20		12		SEIZE	*5	
21	21		13		DEPART	*5	
22	22		14		ADVANCE	RVEXPO(2,X*5)	
23	23		15		RELEASE	*5	
24	24		16	DIS	SEIZE	DISCHARG	
25	25		17		ADVANCE	7,1	
26	26		18		RELEASE	DISCHARG	
27	27		19		TABULATE	RES	
28	28		20		TERMINATE		
29	29						
30	30		21		GENERATE	&LIMIT	
31	31			RES	TABLE	M1,60,30,10	
32	32		22		TERMINATE	1	
33	33				START	1	
34	34				END		

Entity Dictionary (in ascending order by entity number; "*" => value conflict.)

Facilities: 1=TRIAGE 2=SERIOUS 3=DISCHARG

Queues: 4 6

Tables: 1=RES

Fullword Savexes: 4 5 6

Parameters: 5

Random Numbers: 1 2

Integer &Vars: 1=LIMIT

Real &Vars: 1=IAT

•

Symbol	Value	EQU Defns	Context	References by Statement Number				
DIS	16	24	Block	17				
ERR	6	14	Block	13				
REG	10	18	Block	13				
DISCHARG	3		Facility	24	26			
SERIOUS	2		Facility	14	16			
TRIAGE	1		Facility	10	12			
4	4		Queue	18				
6	6		Queue	18				
RES	1	31	Table	27				
4	4		Fullword SvX	2				
5	5		Fullword SvX	2				
6	6		Fullword SvX	2				
5	5		Parameter	18	19	20	21	23
1	1		Random Nmbr	9				
2	2		Random Nmbr	22				
LIMIT	1	4	Integer	6	30			
IAT	1	5	Real	7	9			

Storage Requirements (Bytes)

Compiled Code: 1080
 Compiled Data: 80
 Miscellaneous: 0
 Entities: 3586
 Common: 10000

 Total: 14746

GPSS/H Model Size:

Control Statements 7
Blocks 22

Simulation begins.

•
Relative Clock: 1.2000E+05 Absolute Clock: 1.2000E+05

Block	Current	Total	Block	Current	Total	Block	Current	Total
1		15641	11	7	10867	21		1
2		15641	12		10860	22		1
3	1	15641	13		10860			
4		15640	14	3	10860			
5		15640	15	1	10857			
ERR		4773	DIS		15628			
7		4773	17	1	15628			
8		4773	18		15627			
9	1	4773	19		15627			
REG		10867	20		15627			

--Avg-Util-During--								
Facility	Total	Avail	Unavl	Entries	Average	Current	Percent	Seizing
Preempting	Time	Time	Time		Time/Xact	Status	Avail	Xact
Xact								
TRIAGE	0.651			15641	4.994	AVAIL		15642
SERIOUS	0.795			4773	19.992	AVAIL		
DISCHARG	0.912			15628	7.002	AVAIL		15632
4	0.963			3677	31.437	AVAIL		15624
5	0.872			4138	25.292	AVAIL		15636
6	0.715			3045	28.175	AVAIL		15635

Queue	Maximum	Average	Total	Zero	Percent
Average	\$Average	Qtable	Current		
	Contents	Contents	Entries	Entries	Zeros
Time/Unit	Time/Unit	Number	Contents		
4	12	1.821	3680	467	12.7
59.374	68.004		3		
5	12	1.431	4141	880	21.3
41.468	52.658		3		
6	12	1.148	3046	797	26.2
45.226	61.253		1		

Table RES

Entries in Table	Mean Argument	Standard Deviation	Sum of Arguments	
15627.0000	105.8021	62.5662	1.6534E+06	Non-weighted

Upper Deviation Limit Mean	Observed Frequency	Percent of Total	Cumulative Percentage	Cumulative Remainder	Multiple of Mean	From
60.0000	3711.0000	23.7474	23.75	76.25	0.5671	
-0.7321						
90.0000	3813.0000	24.4001	48.15	51.85	0.8506	
-0.2526						
120.0000	3136.0000	20.0678	68.22	31.78	1.1342	
0.2269						
150.0000	2045.0000	13.0863	81.30	18.70	1.4177	
0.7064						
180.0000	1214.0000	7.7686	89.07	10.93	1.7013	
1.1859						
210.0000	702.0000	4.4922	93.56	6.44	1.9848	
1.6654						
240.0000	400.0000	2.5597	96.12	3.88	2.2684	
2.1449						
270.0000	247.0000	1.5806	97.70	2.30	2.5519	
2.6244						
300.0000	135.0000	0.8639	98.57	1.43	2.8355	
3.1039						
overflow	224.0000	1.43	100.00	0.00		

Average value of overflow is 363.9743

•

Non-zero Fullword Savevalues: (NAME : VALUE)

4:	32,	5:	25,	6:	28
----	-----	----	-----	----	----

Random Stream	Antithetic Variates	Initial Position	Current Position	Sample Count	Chi-Square Uniformity
1	OFF	100000	167324	67324	0.92
2	OFF	200000	210860	10860	0.73

Status of Common Storage

7880 bytes available
2120 in use
5688 used (max)

•

Simulation complete. Absolute Clock: 1.2000E+05

Total Block Executions: 240605

Blocks / second: 19007038

Microseconds / Block: 0.05

Elapsed Time Used (Sec)

Pass1:	0.00
Sym/Xref	0.00
Pass2:	0.00
Load/Ctrl:	0.00
Execution:	0.01
Output:	0.00

Total:	0.01