

Saobraćajni fakultet
Univerzitet u Beogradu

SEMINARSKI RAD
PREDMET: Računarska simulacija

Student
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index TC XXXX-X-XXX
TC XXXX-X-

I Zadaci iz diplomskog rada

1. Analiza rada paketskog šaltera

Radno vreme ovog saltera je od 7 do 20.00 casova svakog dana,osim nedelje i praznika. Intezitet ulaznog potoka klijenata je $\lambda=0.123$ kor/min (srednje vreme između nailazaka klijenata je 8.13 min). $\bar{t}$ opsluge je 2.227 min.

```
* Opsluga zahtjeva na paketskom salteru
SIMULATE
EXPO1  FUNCTION RN2,C24
J,0/.1,.104/.2,.222/.3,.355/.4,.509/.5,.69/.6,.915/.7,1.2/0.75,1.38/
.8,1.6/0.84,1.83/0.88,2.12/.9,2.3/0.92,2.52/0.94,2.81/0.95,2.99/
0.96,3.2/0.97,3.5/0.98,3.9/0.99,4.6/0.995,5.3/
0.998,6.2/0.999,7/0.9998,8
EXPO2  FUNCTION RN3,C24
J,0/.1,.104/.2,.222/.3,.355/.4,.509/.5,.69/.6,.915/.7,1.2/0.75,1.38/
.8,1.6/0.84,1.83/0.88,2.12/.9,2.3/0.92,2.52/0.94,2.81/0.95,2.99/
0.96,3.2/0.97,3.5/0.98,3.9/0.99,4.6/0.995,5.3/
0.998,6.2/0.999,7/0.9998,8
GENERATE 488, FN$EXPO1
QUEUE RED1
SEIZE SALT
DEPART RED1
ADVANCE 134, FN$EXPO2
RELEASE SALT
TERMINATE
* Segment tajmera
GENERATE 46800
TERMINATE 1
START 1
END
```

GPSSW/FON Ver. 3.0, Simulating results

Relative clock	46800	Absolute clock	46800
Block counts			
Block Current Total			
1	0	97	
2	0	97	
3	0	97	
4	0	97	
5	0	97	
6	0	97	
7	0	97	
8	0	1	
9	0	1	

Queue	Maximum contents	Average contents	Total entries	Zero entries	Percent zeros	Average time/trans	Current contents
1	6	0.185	97	68	70.103	88.680	0

Facility	Average utilisation	Number entries	Average time/tran	Seizing transact.	Preempting transaction
1	0.270	97	129.773	0	0

U diplomskom iskorišćenost je 0.274, a srednja dužina reda je 0.103

1. Analiza rada pismonosnog šaltera

Radno vreme ovog saltera je od 7 do 20.00 casova svakog dana,osim nedelje i praznika. Intezitet ulaznog potoka klijenata je $\lambda=2.0299$ kor/min (srednje vreme između nailazaka klijenata je 0.49 min).

$\bar{t}$ opsluge je 0.4142. min. Potrebno je formirati korisnički red.

```
* Obrada zahtjeva na pismonosnom salteru
SIMULATE
EXPO1  FUNCTION RN2,C24
0,0/.1,.104/.2,.222/.3,.355/.4,.509/.5,.69/.6,.915/.7,1.2/0.75,1.38/
.8,1.6/0.84,1.83/0.88,2.12/.9,2.3/0.92,2.52/0.94,2.81/0.95,2.99/
0.96,3.2/0.97,3.5/0.98,3.9/0.99,4.6/0.995,5.3/
0.998,6.2/0.999,7/0.9998,8
EXPO2  FUNCTION RN3,C24
0,0/.1,.104/.2,.222/.3,.355/.4,.509/.5,.69/.6,.915/.7,1.2/0.75,1.38/
.8,1.6/0.84,1.83/0.88,2.12/.9,2.3/0.92,2.52/0.94,2.81/0.95,2.99/
0.96,3.2/0.97,3.5/0.98,3.9/0.99,4.6/0.995,5.3/
0.998,6.2/0.999,7/0.9998,8
GENERATE 30,FN$EXPO1
QUEUE 1
GATE NU SALT,URED
SKOK1  SEIZE SALT
DEPART 1
ADVANCE 25,FN$EXPO2
RELEASE SALT
TEST G CH$KRED,0,DALJE
UNLINK KRED,SKOK1,1
DALJE  TERMINATE
URED   LINK KRED,FIFO
* Segment tajmera
GENERATE 46800
TERMINATE 1
START 1
END
```

GPSSW/FON Ver. 3.0, Simulating results

Relative clock	46800	Absolute clock	46800
Block counts			
Block Current Total			
1	0	1548	
2	0	1548	
3	0	1548	
4	0	1548	
5	0	1548	
6	1	1548	

7	0	1547
8	0	1547
9	0	1240
10	0	1547
11	0	1240
12	0	1
13	0	1

Queue	Maximum contents	Average contents	Total entries	Zero entries	Percent zeros	Average time/trans	Current contents
1	17	2.797	1548	316	20.413	84.560	0

Facility	Average utilisation	Number entries	Average time/tran	Seizing transact.	Preempting transaction
1	0.819	1548	24.788	1	0

User chain	Total entries	Average time/trans	Current contents	Average contents	Maximum contents
1	1240	98.807	0	2.618	16

U diplomskom radu iskorišćenost je 0.84, a srednja dužina reda 0.458.

3. Analiza rada novčanih šaltera

Radno vreme dva saltera je od 7 do 20.00 casova svakog dana,osim nedelje i praznika. Intezitet ulaznog potoka klijenata je $\lambda=0.174$ kor/min (srednje vreme između nailazaka klijenata je 0.49 min). $\bar{t}$ opsluge je 1.812. min. Potrebno je šaltere posmatrati kao skladište, a zatim kao uređaje sa nezavisnim redovima čekanja.

```

|* Analiza rada novcanog saltera
      SIMULATE
EXPO1  FUNCTION RN2,C24
0,0/.1,.104/.2,.222/.3,.355/.4,.509/.5,.69/.6,.915/.7,1.2/0.75,1.38/
.8,1.6/0.84,1.83/0.88,2.12/.9,2.3/0.92,2.52/0.94,2.81/0.95,2.99/
0.96,3.2/0.97,3.5/0.98,3.9/0.99,4.6/0.995,5.3/
0.998,6.2/0.999,7/0.9998,8
EXPO2  FUNCTION RN3,C24
0,0/.1,.104/.2,.222/.3,.355/.4,.509/.5,.69/.6,.915/.7,1.2/0.75,1.38/
.8,1.6/0.84,1.83/0.88,2.12/.9,2.3/0.92,2.52/0.94,2.81/0.95,2.99/
0.96,3.2/0.97,3.5/0.98,3.9/0.99,4.6/0.995,5.3/
0.998,6.2/0.999,7/0.9998,8
SALT   STORAGE 2
      GENERATE 345,FN$EXPO1
      QUEUE 1
      ENTER SALT
      DEPART 1
      ADVANCE 109,FN$EXPO2
      LEAVE SALT
      TERMINATE
* Segment tajmera
      GENERATE 46800
      TERMINATE 1
      START 1
      END

```

GPSSW/FON Ver. 3.0, Simulating results

Relative clock 46800 Absolute clock 46800

Block counts

Block Current Total

1	0	132
2	0	132
3	0	132
4	0	132
5	0	132
6	0	132
7	0	132
8	0	1
9	0	1

Storage	Capacity	Average Contents	Average Utilisation	Entries	Average Time/tran	Current Contents	Maximum Contents
1	2	0.306	0.153	132	106.879	0	2

Queue	Maximum contents	Average contents	Total entries	Zero entries	Percent zeros	Average time/trans	Current contents
1	3	0.019	132	124	93.939	6.538	0

U diplomskom radu rezultati su sledeci:iskoriscenost 0.315,a srednja duzina reda 0.145

Drugi deo zadatka!

```
* Analiza rada novcanog saltera
      SIMULATE
EXPO1  FUNCTION RN2,C24
0,0/.1,.104/.2,.222/.3,.355/.4,.509/.5,.69/.6,.915/.7,1.2/0.75,1.38/
.8,1.6/0.84,1.83/0.88,2.12/.9,2.3/0.92,2.52/0.94,2.81/0.95,2.99/
0.96,3.2/0.97,3.5/0.98,3.9/0.99,4.6/0.995,5.3/
0.998,6.2/0.999,7/0.9998,8
EXPO2  FUNCTION RN3,C24
0,0/.1,.104/.2,.222/.3,.355/.4,.509/.5,.69/.6,.915/.7,1.2/0.75,1.38/
.8,1.6/0.84,1.83/0.88,2.12/.9,2.3/0.92,2.52/0.94,2.81/0.95,2.99/
0.96,3.2/0.97,3.5/0.98,3.9/0.99,4.6/0.995,5.3/
0.998,6.2/0.999,7/0.9998,8
      GENERATE 345,FN$EXPO1
      GATE NU SALT1,DRUGI
      TRANSFER ,PRVI
      GATE NU SALT2,URED
      TRANSFER ,DRUGI
PRVI   QUEUE 1
      SEIZE SALT1
      DEPART 1
      ADVANCE 109,FN$EXPO2
      RELEASE SALT1
      TRANSFER ,KRAJ
DRUGI  QUEUE 2
      SEIZE SALT2
      DEPART 2
* Segment tajmera
      GENERATE 46800
      TERMINATE 1
      START 1
      END
KRAJ   TERMINATE
```

Simulating results

Relative clock 46800 Absolute clock 46800

Block counts

Block Current Total

1	0	132
2	0	132
3	0	100
4	0	0
5	0	0
6	0	100
7	0	100
8	0	100
9	0	100
10	0	100
11	0	100
12	0	32
13	0	32
14	0	32
15	0	32
16	0	32
17	0	32
18	0	0
19	0	0
20	0	132
21	0	1
22	0	1

Queue	Maximum contents	Average contents	Total entries	Zero entries	Percent zeros	Average time/trans	Current contents
1	1	0.000	100	100	100.000	0.000	0
2	4	0.053	32	25	78.125	71.844	0

Facility	Average utilisation	Number entries	Average time/tran	Seizing transact.	Preempting transaction
1	0.230	100	106.010	0	0
2	0.081	32	109.594	0	0

II Zadaci sa ispita

1. Simulacija rada pošte

```
SIMULATE
EXPO1  FUNCTION RN2,C24
0,0/.1,.104/.2,.222/.3,.355/.4,.509/.5,.69/.6,.915/.7,1.2/0.75,1.38/
.8,1.6/0.84,1.83/0.88,2.12/.9,2.3/0.92,2.52/0.94,2.81/0.95,2.99/
0.96,3.2/0.97,3.5/0.98,3.9/0.99,4.6/0.995,5.3/
0.998,6.2/0.999,7/0.9998,8
EXPO2  FUNCTION RN3,C24
0,0/.1,.104/.2,.222/.3,.355/.4,.509/.5,.69/.6,.915/.7,1.2/0.75,1.38/
.8,1.6/0.84,1.83/0.88,2.12/.9,2.3/0.92,2.52/0.94,2.81/0.95,2.99/
0.96,3.2/0.97,3.5/0.98,3.9/0.99,4.6/0.995,5.3/
0.998,6.2/0.999,7/0.9998,8
EXPO3  FUNCTION RN4,C24
0,0/.1,.104/.2,.222/.3,.355/.4,.509/.5,.69/.6,.915/.7,1.2/0.75,1.38/
.8,1.6/0.84,1.83/0.88,2.12/.9,2.3/0.92,2.52/0.94,2.81/0.95,2.99/
0.96,3.2/0.97,3.5/0.98,3.9/0.99,4.6/0.995,5.3/
0.998,6.2/0.999,7/0.9998,8
SNORM  FUNCTION RN6,C25
0,-5/.00003,-4/.00135,-3/.00621,-2.5/.02275,-2
.06681,-1.5/.11507,-1.2/.15866,-1/.21186,-.8/.27425,-.6
.34458,-.4/.42074,-.2/.5,0/.57926,.2/.65542,.4
.72575,.6/.78814,.8/.84134,1/.88493,1.2/.93319,1.5
.97725,2/.99379,2.5/.99865,3/.99997,4/1,5
USVR  FUNCTION C1,D4
10800,30/21600,25/28800,18/43200,10
MOD    FUNCTION C1,D4
10800,3/21600,5/28800,5.4/43200,2
BRUSL  FUNCTION RN2,D4
.40,1/0.65,2/.90,3/1.0,4
UVROPS VARIABLE P1*(10+(15*RN3)/1000)
ERLANG VARIABLE 200*(FN$EXPO1+FN$EXPO2)
UVRDOL VARIABLE (FN$USVR-FN$MOD)+(2*FN$MOD)*RN4)/1000
VELP   FUNCTION RN5,D3
.25,1/.70,2/1.0,3
PSVR   FUNCTION P3,D3
1,240/2,360/3,480
```

```

STDEV    FUNCTION P3,D3
1,20/2,35/3,45
PVROPS   VARIABLE FN$PSRVR+FN$STDEV*FN$SNORM
TVRDOL   VARIABLE 75*FN$EXPO3
TVROPS   FUNCTION RN6,C4
.15,60/.60,600/.85,900/1.0,1200
* Opsluga na univerzalnim salterima
      GENERATE V$UVRDOL
UNIVS    ASSIGN 1, FN$BRUSL
      TEST LE C1,21600,TRI
      TRANSFER ,OPSL
TRI       TEST LE C1,28800,DVA
      ASSIGN 4,1
      ASSIGN 5,1
      TRANSFER ,OPSL
DVA      ASSIGN 4,1
OPSL     QUEUE RED1
PRVI     GATE NU 1,DRUGI
      SEIZE 1
      ASSIGN 6,1
      TRANSFER ,DALJE
DRUGI    TEST E P4,1,URED
      GATE NU 2,TRECI
      SEIZE 2
      ASSIGN 6,2
      TRANSFER ,DALJE
TRECI    TEST E P5,1,URED
      GATE NU 3,URED
      SEIZE 3
      ASSIGN 6,3
DALJE    DEPART RED1
      TABULATE TAB1
      ADVANCE V$UVROPS
      RELEASE *6
      TEST G CH$KRED,0,IZLAZ
      UNLINK KRED,PRVI,1
IZLAZ    TERMINATE
URED     LINK KRED,FIFO
* Opsluga na salteru za prijem paketa
      GENERATE V$ERLANG
      ASSIGN 3, FN$VELP
      QUEUE RED2
      SEIZE PSALT
      DEPART RED2
      MARK
      ADVANCE V$PVROPS
      RELEASE PSALT
      TABULATE TAB2
      TRANSFER .25,UNIVS
      TERMINATE

```

* Telefonski razgovori clijenata

```

GENERATE V$TVRDOL
TELKAB STORAGE 4
      QUEUE RED3
      TEST G Q$RED3,10,FIN
      ENTER TELKAB
      DEPART RED3
      TABULATE TAB3
      ADVANCE 20,10
      TRANSFER .35,,KRAJ
      ADVANCE FN$TVROPS
      LEAVE TELKAB
      QUEUE RED4
      SEIZE NSALT
      DEPART RED4
      ADVANCE 9,3
      RELEASE NSALT
      TERMINATE
KRAJ LEAVE TELKAB
FIN  TERMINATE
TAB1 TABLE Q$RED1,1,1,30
TAB2 TABLE M1,150,20,20
TAB3 TABLE M1,10,20,20
* Segment tajmera
      GENERATE 43200
      TERMINATE 1
      START 1
      CLEAR
      START 1
      END|

```

GPSSW/FON Ver. 3.0, Simulating results

Relative clock	43200	Absolute clock	43200
Block counts			
Block Current Total			
1	0	2741	
2	0	2818	
3	0	2818	
4	0	843	
5	0	1975	
6	0	432	
7	0	432	
8	0	432	
9	0	1543	
10	0	2818	
11	0	4705	
12	0	1180	
13	0	1180	
14	0	1180	
15	0	3525	

16	0	2343
17	0	571
18	0	571
19	0	571
20	0	1772
21	0	314
22	0	145
23	0	145
24	0	1896
25	0	1896
26	2	1896
27	0	1894
28	0	1894
29	0	1887
30	0	1894
31	922	2809
32	0	103
33	0	103
34	0	103
35	0	103
36	0	103
37	0	103
38	0	103
39	0	103
40	0	103
41	0	103
42	0	26
43	0	564
44	0	564
45	72	564
46	0	482
47	0	482
48	0	482
49	1	482
50	0	481
51	3	322
52	0	319
53	0	319
54	0	319
55	0	319
56	0	319
57	0	319
58	0	319
59	0	159
60	0	169
61	0	1
62	0	1

Storage	Capacity	Average Contents	Average Utilisation	Entries	Average Time/tran	Current Contents	Maximum Contents
1	4	3.831	0.958	482	344.079	4	4

Table	1
Entries in table	Mean argument
1896	313.044
	Standard deviation
	239.643
	Sum of arguments
	593532.000

Upper limit	Observed frequency	Percent of total	Cumulative percentage	Cumulative remainder	Multiple of mean	Deviation from mean
1	11	0.580	0.580	99.420	0.003	-1.302
2	1	0.053	0.633	99.367	0.006	-1.298
3	0	0.000	0.633	99.367	0.010	-1.294
4	2	0.105	0.738	99.262	0.013	-1.290
5	6	0.316	1.055	98.945	0.016	-1.285
6	7	0.369	1.424	98.576	0.019	-1.281
7	12	0.633	2.057	97.943	0.022	-1.277
8	5	0.264	2.321	97.679	0.026	-1.273
9	7	0.369	2.690	97.310	0.029	-1.269
10	1	0.053	2.743	97.257	0.032	-1.265
11	0	0.000	2.743	97.257	0.035	-1.260
12	2	0.105	2.848	97.152	0.038	-1.256
13	5	0.264	3.112	96.888	0.042	-1.252
14	4	0.211	3.323	96.677	0.045	-1.248
15	5	0.264	3.586	96.414	0.048	-1.244
16	2	0.105	3.692	96.308	0.051	-1.240
17	1	0.053	3.745	96.255	0.054	-1.235
18	6	0.316	4.061	95.939	0.057	-1.231
19	4	0.211	4.272	95.728	0.061	-1.227
20	2	0.105	4.378	95.622	0.064	-1.223
21	1	0.053	4.430	95.570	0.067	-1.219
22	1	0.053	4.483	95.517	0.070	-1.214
23	5	0.264	4.747	95.253	0.073	-1.210
24	1	0.053	4.800	95.200	0.077	-1.206
25	3	0.158	4.958	95.042	0.080	-1.202
26	9	0.475	5.432	94.568	0.083	-1.198
27	2	0.105	5.538	94.462	0.086	-1.194
28	1	0.053	5.591	94.409	0.089	-1.189
29	1	0.053	5.643	94.357	0.093	-1.185
30	5	0.264	5.907	94.093	0.096	-1.181
Overflow	1784	94.093	100.000			
Average value of overflow			331.842			

Table 2

Entries in table	Mean argument	Standard deviation	Sum of arguments
103	371.272	106.311	38241.000

Upper limit	Observed frequency	Percent of total	Cumulative percentage	Cumulative remainder	Multiple of mean	Deviation from mean
150	0	0.000	0.000	100.000	0.404	-2.081
170	1	0.971	0.971	99.029	0.458	-1.893
190	0	0.000	0.971	99.029	0.512	-1.705
210	1	0.971	1.942	98.058	0.566	-1.517
230	4	3.883	5.825	94.175	0.619	-1.329
250	12	11.650	17.476	82.524	0.673	-1.141
270	7	6.796	24.272	75.728	0.727	-0.953
290	5	4.854	29.126	70.874	0.781	-0.764
310	4	3.883	33.010	66.990	0.835	-0.576
330	5	4.854	37.864	62.136	0.889	-0.388
350	10	9.709	47.573	52.427	0.943	-0.200
370	5	4.854	52.427	47.573	0.997	-0.012
390	5	4.854	57.282	42.718	1.050	0.176
410	5	4.854	62.136	37.864	1.104	0.364
430	6	5.825	67.961	32.039	1.158	0.552

450	6	5.825	73.786	26.214	1.212	0.741
470	6	5.825	79.612	20.388	1.266	0.929
490	5	4.854	84.466	15.534	1.320	1.117
510	3	2.913	87.379	12.621	1.374	1.305
530	5	4.854	92.233	7.767	1.428	1.493
Overflow	8	7.767	100.000			
Average value of overflow			562.750			

Table 3

Entries in table	Mean argument	Standard deviation	Sum of arguments
482	3040.349	1971.871	1465448.000

Upper limit	Observed frequency	Percent of total	Cumulative percentage	Cumulative remainder	Multiple of mean	Deviation from mean
10	34	7.054	7.054	92.946	0.003	-1.537
30	4	0.830	7.884	92.116	0.010	-1.527
50	2	0.415	8.299	91.701	0.016	-1.517
70	3	0.622	8.921	91.079	0.023	-1.506
90	0	0.000	8.921	91.079	0.030	-1.496
110	1	0.207	9.129	90.871	0.036	-1.486
130	1	0.207	9.336	90.664	0.043	-1.476
150	0	0.000	9.336	90.664	0.049	-1.466
170	1	0.207	9.544	90.456	0.056	-1.456
190	0	0.000	9.544	90.456	0.062	-1.446
210	0	0.000	9.544	90.456	0.069	-1.435
230	1	0.207	9.751	90.249	0.076	-1.425
250	1	0.207	9.959	90.041	0.082	-1.415
270	0	0.000	9.959	90.041	0.089	-1.405
290	1	0.207	10.166	89.834	0.095	-1.395
310	0	0.000	10.166	89.834	0.102	-1.385
330	1	0.207	10.373	89.627	0.109	-1.375
350	0	0.000	10.373	89.627	0.115	-1.364
370	1	0.207	10.581	89.419	0.122	-1.354
390	1	0.207	10.788	89.212	0.128	-1.344
Overflow	430	89.212	100.000			
Average value of overflow			3402.156			

Queue	Maximum contents	Average contents	Total entries	Zero entries	Percent zeros	Average time/trans	Current contents
1	922	268.043	2818	419	14.869	4110.180	922
2	7	1.606	103	16	15.534	666.388	0
3	94	49.128	564	34	6.028	3762.699	82
4	2	0.004	319	296	92.790	0.527	0

Facility	Average utilisation	Number entries	Average time/tran	Seizing transact.	Preempting transaction
1	0.998	1180	36.567	1	0
2	0.464	571	35.137	1	0
3	0.175	145	38.110	0	0
4	0.890	103	371.272	0	0
5	0.066	319	8.890	0	0

User chain	Total entries	Average time/trans	Current contents	Average contents	Maximum contents
1	2809	4123.354	922	268.043	922

Relative clock	43200	Absolute clock	86400
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Block counts

Block	Current	Total
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1	0	2737
2	0	2826
3	0	2826
4	0	853
5	0	1973
6	0	432
7	0	432
8	0	432
9	0	1541
10	0	2826
11	0	4785
12	0	1224
13	0	1224
14	0	1224
15	0	3561
16	0	2357
17	0	586
18	0	586
19	0	586
20	0	1771
21	0	315
22	0	152
23	0	152
24	0	1962
25	0	1962
26	2	1962
27	0	1960
28	0	1960
29	0	1959
30	0	1960
31	864	2823
32	0	111
33	0	111
34	0	111
35	0	111
36	0	111
37	0	111
38	1	111
39	0	110
40	0	110
41	0	110
42	0	21
43	0	615
44	0	615
45	141	615
46	0	464
47	0	464
48	0	464
49	0	464

50	0	464
51	4	298
52	0	294
53	0	294
54	0	294
55	0	294
56	0	294
57	0	294
58	0	294
59	0	166
60	0	176
61	0	1
62	0	1

Storage Capacity	Average Contents	Average Utilisation	Entries	Average Time/tran	Current Contents	Maximum Contents	
1	4	3.861	0.965	468	353.548	4	4

Table 1

Entries in table 1962	Mean argument 295.849	Standard deviation 227.678	Sum of arguments 580455.000
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Upper limit	Observed frequency	Percent of total	Cumulative percentage	Cumulative remainder	Multiple of mean	Deviation from mean
1	3	0.153	0.153	99.847	0.003	-1.295
2	2	0.102	0.255	99.745	0.007	-1.291
3	7	0.357	0.612	99.388	0.010	-1.286
4	1	0.051	0.663	99.337	0.014	-1.282
5	6	0.306	0.968	99.032	0.017	-1.277
6	3	0.153	1.121	98.879	0.020	-1.273
7	4	0.204	1.325	98.675	0.024	-1.269
8	1	0.051	1.376	98.624	0.027	-1.264
9	3	0.153	1.529	98.471	0.030	-1.260
10	8	0.408	1.937	98.063	0.034	-1.255
11	12	0.612	2.548	97.452	0.037	-1.251
12	4	0.204	2.752	97.248	0.041	-1.247
13	1	0.051	2.803	97.197	0.044	-1.242
14	1	0.051	2.854	97.146	0.047	-1.238
15	2	0.102	2.956	97.044	0.051	-1.234
16	5	0.255	3.211	96.789	0.054	-1.229
17	0	0.000	3.211	96.789	0.057	-1.225
18	1	0.051	3.262	96.738	0.061	-1.220
19	2	0.102	3.364	96.636	0.064	-1.216
20	4	0.204	3.568	96.432	0.068	-1.212
21	8	0.408	3.976	96.024	0.071	-1.207
22	6	0.306	4.281	95.719	0.074	-1.203
23	2	0.102	4.383	95.617	0.078	-1.198
24	9	0.459	4.842	95.158	0.081	-1.194
25	4	0.204	5.046	94.954	0.085	-1.190
26	15	0.765	5.810	94.190	0.088	-1.185
27	8	0.408	6.218	93.782	0.091	-1.181
28	5	0.255	6.473	93.527	0.095	-1.176
29	4	0.204	6.677	93.323	0.098	-1.172
30	16	0.815	7.492	92.508	0.101	-1.168
Overflow	1815	92.508	100.000			
Average value of overflow			318.335			

Table 2

Entries in table	Mean argument	Standard deviation	Sum of arguments
110	348.473	93.938	38332.000

Upper limit	Observed frequency	Percent of total	Cumulative percentage	Cumulative remainder	Multiple of mean	Deviation from mean
150	0	0.000	0.000	100.000	0.430	-2.113
170	0	0.000	0.000	100.000	0.488	-1.900
190	0	0.000	0.000	100.000	0.545	-1.687
210	4	3.636	3.636	96.364	0.603	-1.474
230	4	3.636	7.273	92.727	0.660	-1.261
250	13	11.818	19.091	80.909	0.717	-1.048
270	12	10.909	30.000	70.000	0.775	-0.835
290	6	5.455	35.455	64.545	0.832	-0.622
310	1	0.909	36.364	63.636	0.890	-0.410
330	6	5.455	41.818	58.182	0.947	-0.197
350	14	12.727	54.545	45.455	1.004	0.016
370	9	8.182	62.727	37.273	1.062	0.229
390	6	5.455	68.182	31.818	1.119	0.442
410	3	2.727	70.909	29.091	1.177	0.655
430	7	6.364	77.273	22.727	1.234	0.868
450	5	4.545	81.818	18.182	1.291	1.081
470	6	5.455	87.273	12.727	1.349	1.294
490	4	3.636	90.909	9.091	1.406	1.507
510	5	4.545	95.455	4.545	1.464	1.720
530	2	1.818	97.273	2.727	1.521	1.932
Overflow	3	2.727	100.000			
Average value of overflow			546.667			

Table 3

Entries in table	Mean argument	Standard deviation	Sum of arguments
464	3323.668	2419.491	1542182.000

Upper limit	Observed frequency	Percent of total	Cumulative percentage	Cumulative remainder	Multiple of mean	Deviation from mean
10	9	1.940	1.940	98.060	0.003	-1.370
30	1	0.216	2.155	97.845	0.009	-1.361
50	0	0.000	2.155	97.845	0.015	-1.353
70	0	0.000	2.155	97.845	0.021	-1.345
90	3	0.647	2.802	97.198	0.027	-1.337
110	2	0.431	3.233	96.767	0.033	-1.328
130	2	0.431	3.664	96.336	0.039	-1.320
150	3	0.647	4.310	95.690	0.045	-1.312
170	2	0.431	4.741	95.259	0.051	-1.303
190	2	0.431	5.172	94.828	0.057	-1.295
210	4	0.862	6.034	93.966	0.063	-1.287
230	2	0.431	6.466	93.534	0.069	-1.279
250	5	1.078	7.543	92.457	0.075	-1.270
270	3	0.647	8.190	91.810	0.081	-1.262
290	1	0.216	8.405	91.595	0.087	-1.254
310	2	0.431	8.836	91.164	0.093	-1.246
330	0	0.000	8.836	91.164	0.099	-1.237
350	2	0.431	9.267	90.733	0.105	-1.229
370	2	0.431	9.698	90.302	0.111	-1.221
390	1	0.216	9.914	90.086	0.117	-1.213

Overflow 418 90.086 100.000
Average value of overflow 3670.895

Queue	Maximum contents	Average contents	Total entries	Zero entries	Percent zeros	Average time/trans	Current contents
1	865	250.001	3748	426	11.366	2881.487	864
2	5	1.163	111	19	17.117	451.450	0
3	151	59.465	697	9	1.291	3677.836	151
4	1	0.002	294	281	95.578	0.279	0

Facility	Average utilisation	Number entries	Average time/tran	Seizing transact.	Preempting transaction
1	0.999	1225	35.248	1	0
2	0.464	587	34.213	1	0
3	0.171	152	35.322	0	0
4	0.890	111	348.473	1	0
5	0.061	294	8.935	0	0

User chain	Total entries	Average time/trans	Current contents	Average contents	Maximum contents
1	3745	2883.795	864	250.001	865

2. Simulacija paketske mreže

```
SIMULATE
EXPO    FUNCTION RN2,C24
        0,0/.1,.104/.2,.222/.3,.355/.4,.509/.5,.69/.6,.915/.7,1.2/0.75,1.38/
        .8,1.6/0.84,1.83/0.88,2.12/.9,2.3/0.92,2.52/0.94,2.81/0.95,2.99/
        0.96,3.2/0.97,3.5/0.98,3.9/0.99,4.6/0.995,5.3/
        0.998,6.2/0.999,7/0.9998,8
GRES    FUNCTION RN4,D2
        .001,1/1.0,2
        GENERATE 5000, FN$EXPO
        SAVEVALUE GEN+,1
        ASSIGN 2,X$GEN
SKOK1   TEST E X1,0,IDI2
        SAVEVALUE 1,P2
        ASSIGN 3,1
        TRANSFER ,DALJE
IDI2    TEST E X2,0,IDI3
        SAVEVALUE 2,P2
        ASSIGN 3,2
        TRANSFER ,DALJE
IDI3    TEST E X3,0,IDI4
        SAVEVALUE 3,P2
        ASSIGN 3,3
        TRANSFER ,DALJE
IDI4    TEST E X4,0,IDI5
        SAVEVALUE 4,P2
        ASSIGN 3,4
        TRANSFER ,DALJE
IDI5    TEST E X5,0,URED
        SAVEVALUE 5,P2
        ASSIGN 3,5
DALJE   GATE NU KANAL
        SEIZE KANAL
RETRAN  ADVANCE 2200
        TEST NE P5,1,BLOK1
        ASSIGN 4, FN$GRES
        TEST E P4,2,BLOK2
BLOK1   TEST E X6,X$PRIM,PONOVO
        ADVANCE 5
        RELEASE KANAL
        SAVEVALUE PRIM+,1
        SAVEVALUE 6,P2
        TEST NE P6,0,BLOK3
        SAVEVALUE *6,0
BLOK3   TRANSFER ,BRISI
BLOK2   RELEASE KANAL
        SAVEVALUE 6,P2
        SAVEVALUE 7,P3
        TERMINATE
PONOVO  ADVANCE 5
        SAVEVALUE PRIM+,1
        ASSIGN 5,1
        ASSIGN 6,X7
        TRANSFER ,RETRAN
```

```

BRISI    TEST E P3,1,DALJE2
          SAVEVALUE 1,0
          TRANSFER ,KRAJ
DALJE2   TEST E P3,2,DALJE3
          SAVEVALUE 2,0
          TRANSFER ,KRAJ
DALJE3   TEST E P3,3,DALJE4
          SAVEVALUE 3,0
          TRANSFER ,KRAJ
DALJE4   TEST E P3,4,DALJE5
          SAVEVALUE 4,0
          TRANSFER ,KRAJ
DALJE5   TEST E P3,5,KRAJ
          SAVEVALUE 5,0
KRAJ     TEST G CH$KRED,0,FIN
          UNLINK KRED,SKOK1,1
FIN      TERMINATE 1
URED     LINK KRED,FIFO
          INITIAL X$GEN,0
          INITIAL X$PRIM,0
          INITIAL X1,0
          INITIAL X2,0
          INITIAL X3,0
          INITIAL X4,0
          INITIAL X5,0
          INITIAL X6,0
          INITIAL X7,0
          START 1000
          END

```

GPSSW/FON Ver. 3.0, Simulating results

Relative clock 5068816 Absolute clock 5068816

Block counts

Block Current Total

1	0	1003
2	0	1003
3	0	1003
4	0	1007
5	0	681
6	0	681
7	0	681
8	0	326
9	0	243
10	0	243
11	0	243
12	0	83
13	0	63
14	0	63
15	0	63
16	0	20
17	0	13

18	0	13
19	0	13
20	0	7
21	0	3
22	0	3
23	0	1003
24	0	1003
25	0	1006
26	0	1006
27	0	1003
28	0	1003
29	0	1003
30	0	1000
31	0	1000
32	0	1000
33	0	1000
34	0	1000
35	0	3
36	0	1000
37	0	3
38	0	3
39	0	3
40	0	3
41	0	3
42	0	3
43	0	3
44	0	3
45	0	3
46	0	1000
47	0	679
48	0	679
49	0	321
50	0	242
51	0	242
52	0	79
53	0	63
54	0	63
55	0	16
56	0	13
57	0	13
58	0	3
59	0	3
60	0	1000
61	0	4
62	0	1000
63	0	4

Facility	Average utilisation	Number entries	Average time/tran	Seizing transact.	Preempting transaction
1	0.438	1003	2211.580	0	0

User chain	Total entries	Average time/trans	Current contents	Average contents	Maximum contents
1	4	1762.250	0	0.298	2

SaveValues

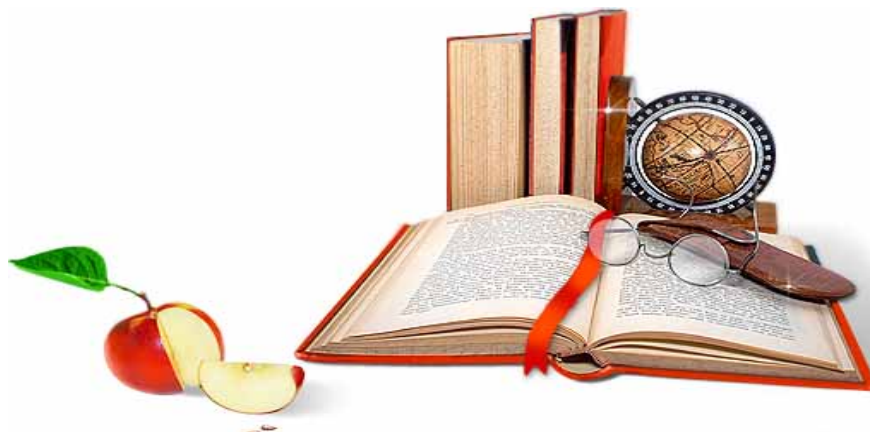
X\$6 = 1003

X\$7 = 2

X\$8 = 1003

X\$9 = 1003

BESPLATNI GOTOVI SEMINARSKI, DIPLOMSKI I MATURSKI RAD.
RADOVI IZ SVIH OBLASTI, POWERPOINT PREZENTACIJE I DRUGI
EDUKATIVNI MATERIJALI.



WWW.SEMINARSKIRAD.ORG
WWW.MATURSKIRADOVI.NET
WWW.MATURSKI.NET
WWW.SEMINARSKIRAD.INFO
WWW.MATURSKI.ORG
WWW.ESSAYSX.COM
WWW.FACEBOOK.COM/DIPLOMSKIRADOVI

NA NAŠIM SAJTOVIMA MOŽETE PRONAĆI SVE, BILO DA JE TO [SEMINARSKI](#), [DIPLOMSKI](#) ILI [MATURSKI](#) RAD, POWERPOINT PREZENTACIJA I DRUGI EDUKATIVNI MATERIJAL. ZA RAZLIKU OD OSTALIH MI VAM PRUŽAMO DA POGLEDATE SVAKI RAD, NJEGOV SADRŽAJ I PRVE TRI STRANE TAKO DA MOŽETE TAČNO DA ODABERETE ONO ŠTO VAM U POTPUNOSTI ODGOVARA. U BAZI SE NALAZE [GOTOVI SEMINARSKI, DIPLOMSKI I MATURSKI RADOVI](#) KOJE MOŽETE SKINUTI I UZ NJIHOVU POMOĆ NAPRAVITI JEDINSTVEN I UNIKATAN RAD. AKO U [BAZI](#) NE NAĐETE RAD KOJI VAM JE POTREBAN, U SVAKOM MOMENTU MOŽETE NARUČITI DA VAM SE IZRADI NOVI, UNIKATAN SEMINARSKI ILI NEKI DRUGI RAD RAD NA LINKU [IZRADA RADOVA](#). PITANJA I ODGOVORE MOŽETE DOBITI NA NAŠEM [FORUMU](#) ILI NA MATURSKIRADOVI.NET@GMAIL.COM