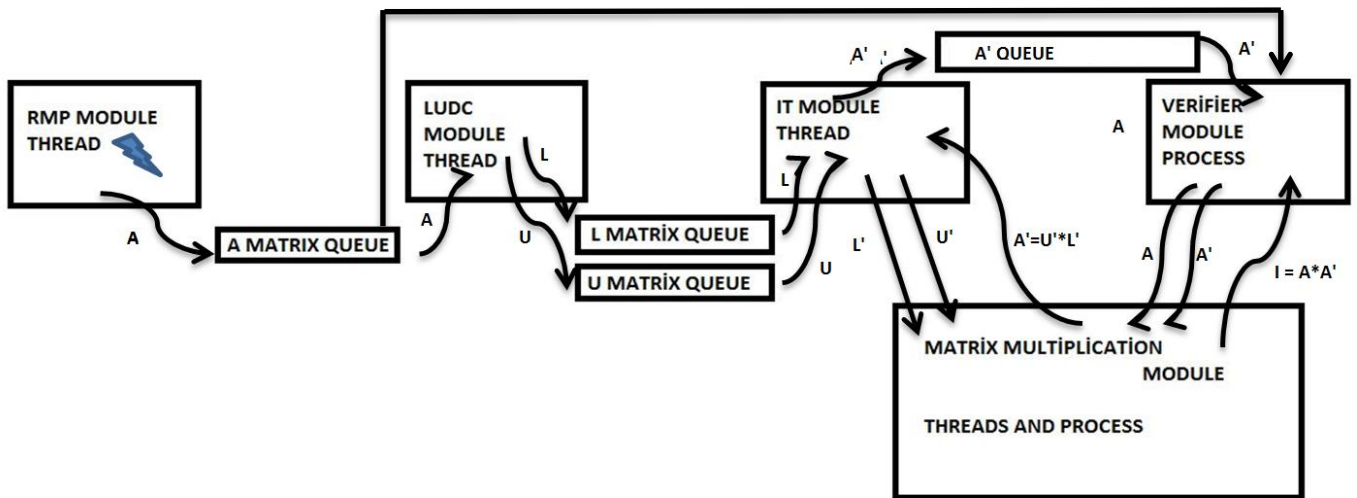


**Gebze Institute of Technology**  
**Department of Computer Engineering**  
**CSE 244 System Programming**  
**Spring-2014**  
**Final Project Test Report**

**PROJENİN GENEL TASARIM TABLOSU;**



**PROJENİN ÇALIŞMA PRENSİBİ;**

❖ **RMP MODÜLÜ;**

- ✓ Girilen size boyutunda ve sayısında matris üretir,
- ✓ Verilen L sayısı kadar LUDC ile arasındaki kuyruk için yer alır ve doldurmaya başlar(LUDC için producer),
- ✓ Ve LUDC ile arasındaki kuyruk ta boşalma olursa tekrar ora için yeni matris oluşturur.

❖ **LUDC MODÜLÜ;**

- ✓ RMP ile arasındaki kuyruk dan matrisi alır,(RMP için consumer),
- ✓ Aldığı A matrisinin Lower ve Upper matrisini bulur ve bu matrisleri IT Modülü ile arasındaki kuyruklara doldurur.( ITM için producer).

❖ **IT MODÜLÜ;**

- ✓ LUDC Modülü ile arasındaki L matris kuyruğundan L yi alır(LUDC için consumer),
- ✓ LUDC Modülü İle arasındaki U matris kuyruğundan U yi alır,
- ✓ Aldığı U ve L matrislerinin tersini alıp bunları MMM Modülüne gönderir ve çarpım sonucunu alır(MMM için Boss),
- ✓ Gelen matrisi( $A' = U' * L'$ ) Verifier Modül ile arasındaki A' matris kuyruğuna ekler

❖ **VERIFIER MODÜLÜ**

- ✓ IT Modülü ile arasındaki A' matris kuyruğundan A' nü ve IT Modülünden RMP Modülünü oluşturduğu kuyruktan A yi alır.
- ✓ Çarpma işlemi için MMM Modülüne gönderir(MMM için Boss),
- ✓ MMM Modülünden gelen sonuç matrisini birim matrisle kontrol eder,
- ✓ Eğer eşitseler matris tersi alınabilir matristir,
- ✓ Eşit değilseler matris tersi alınmayan matristir.

❖ **MMM MODÜLÜ(worker);**

- ✓ IT Modülünden gelen U' ve L' yi işleme koyarak sonuçta oluşan A' matrisini IT Modülüne gönderir,
- ✓ Verifier Modülünden gelen A ve A' yi işleme koyarak sonuçta oluşan Birim matrisi Verifier Modülüne Gönderir.

## MODÜLLERİN ÇALIŞMASI VE SONUÇLARI

- Programların derlenmesi için makefile üretilmiştir.
- Usage için usage.txt dosyası mevcuttur.

### **AYNI BİLGİSAYAR ÜZERİNDE ÇALIŞMA SONUÇLARI;**

OS: Ubuntu 13.10 x64 Processor: intel i7

Main argümanları: N:8, K=30, L=100, P=70,Trace=0;

[illegible]

Main argümanları: N=21, K=10, L=20, P=35, Trace=1;

The image displays three terminal windows on a Kali Linux desktop, each showing the execution of a program named 'matris'. The desktop background features the Kali Linux logo. The left terminal window shows the program running on a VM module, the middle on a MAIN module, and the right on an MM module. Each terminal displays a series of matrix operations and their results, along with a total elapsed time.

**Left Terminal (VM Module):**

```
alican@alican-NS0VZ:~/Desktop/final$ ./mm
MAIN Module socket is ready port:5001
VM Module socket is ready port:5002
Waiting for VM Module connection
VM Module connected;
Waiting for MAIN Module connection
MAIN Module Connected port:5000
Running...
GELEN SIZE:21_ThreadNumber:35__TRACEMODE:1
1->MATRIS ISLEML BITTL
2->MATRIS ISLEML BITTL
3->MATRIS ISLEML BITTL
4->MATRIS ISLEML BITTL
5->MATRIS ISLEML BITTL
6->MATRIS ISLEML BITTL
7->MATRIS ISLEML BITTL
8->MATRIS ISLEML BITTL
9->MATRIS ISLEML BITTL
10->MATRIS ISLEML BITTL
Exiting Properly[0]...
Total Elapsed time 50.00 seconds.
alican@alican-NS0VZ:~/Desktop/finals$
```

**Middle Terminal (MAIN Module):**

```
alican@alican-NS0VZ:~/Desktop/finals$ ./vm 192.168.1.3
Connected to Main port:5000
VM Module socket is ready port:5002
Waiting for MAIN Module connection
MAIN Module Connected port:5000
Running...
GELEN SIZE:21_TRACEMODE:1
>>>MATRIS DOGRULANDI[Invertable]<<<
1->MATRIS ISLEML BITTL
>>>MATRIS DOGRULANDI[Invertable]<<<
2->MATRIS ISLEML BITTL
>>>MATRIS DOGRULANDI[Invertable]<<<
3->MATRIS ISLEML BITTL
>>>MATRIS DOGRULANDI[Invertable]<<<
4->MATRIS ISLEML BITTL
>>>MATRIS DOGRULANDI[Invertable]<<<
5->MATRIS ISLEML BITTL
>>>MATRIS DOGRULANDI[Invertable]<<<
6->MATRIS ISLEML BITTL
>>>MATRIS DOGRULANDI[Invertable]<<<
7->MATRIS ISLEML BITTL
>>>MATRIS DOGRULANDI[Invertable]<<<
8->MATRIS ISLEML BITTL
>>>MATRIS DOGRULANDI[Invertable]<<<
9->MATRIS ISLEML BITTL
>>>MATRIS DOGRULANDI[Invertable]<<<
10->MATRIS ISLEML BITTL
Exiting Properly[0]...
Number of Inverted Matrix:10 non-Invertable Matrix:0
Total Elapsed time 48.00 seconds.
alican@alican-NS0VZ:~/Desktop/finals$
```

**Right Terminal (MM Module):**

```
alican@alican-NS0VZ:~/Desktop/finals$ ./main 192.168.1.3 192.168.1.3 21 10 20 35 1
Connected to MM port:5001
Connected to VM module:5000
Running...
1->MATRIS ISLEML BITTL
KUYRUKLARAOKI MATRIS SAVISI:9
2->MATRIS ISLEML BITTL
KUYRUKLARAOKI MATRIS SAVISI:8
3->MATRIS ISLEML BITTL
KUYRUKLARAOKI MATRIS SAVISI:7
4->MATRIS ISLEML BITTL
KUYRUKLARAOKI MATRIS SAVISI:6
5->MATRIS ISLEML BITTL
KUYRUKLARAOKI MATRIS SAVISI:5
6->MATRIS ISLEML BITTL
KUYRUKLARAOKI MATRIS SAVISI:4
7->MATRIS ISLEML BITTL
KUYRUKLARAOKI MATRIS SAVISI:3
8->MATRIS ISLEML BITTL
KUYRUKLARAOKI MATRIS SAVISI:2
9->MATRIS ISLEML BITTL
KUYRUKLARAOKI MATRIS SAVISI:1
10->MATRIS ISLEML BITTL
KUYRUKLARAOKI MATRIS SAVISI:0
TOPLAM 10 TANE MATRIS UZERINDE ISLEM YAPILDI.
Exiting Properly[0]...
Total Elapsed time 11.00 seconds.
alican@alican-NS0VZ:~/Desktop/finals$
```

Main argümanları:N=33, K=12, L=6, P=40,Trace=1;

```
Terminal
alican@alican-N56VZ: ~/Desktop/final
alican@alican-N56VZ:~/Desktop/final$ ./mmm
MAIN Module socket is ready port:5001
VM Module socket is ready port:5002
Waiting for VM Module connection
VM Module connected.
Waiting for MAIN Module connection
MAIN Module connected.
Running...
GELEN SIZE:33_ThreadNumber:40__TRACEMODE:1
1->MATRİS İSLEMİ BİTTİ
2->MATRİS İSLEMİ BİTTİ
3->MATRİS İSLEMİ BİTTİ
4->MATRİS İSLEMİ BİTTİ
5->MATRİS İSLEMİ BİTTİ
6->MATRİS İSLEMİ BİTTİ
7->MATRİS İSLEMİ BİTTİ
8->MATRİS İSLEMİ BİTTİ
9->MATRİS İSLEMİ BİTTİ
10->MATRİS İSLEMİ BİTTİ
11->MATRİS İSLEMİ BİTTİ
12->MATRİS İSLEMİ BİTTİ
Exiting Properly[P]...
Total Elapsed time 26.00 seconds.
alican@alican-N56VZ:~/Desktop/final$

alican@alican-N56VZ:~/Desktop/final$ ./vm 192.168.1.3
Connected to Main port:5000
VM Module socket is ready port:5002
Waiting for MAIN Module connection
MAIN Module Connected port:5000
Running...
GELEN SIZE:33_TRACEMODE:1
>>>MATRİS DOGRULANDI[Invertable]-<<<
1->MATRİS İSLEMİ BİTTİ
>>>MATRİS DOGRULANDI[Invertable]-<<<
2->MATRİS İSLEMİ BİTTİ
>>>MATRİS DOGRULANDI[Invertable]-<<<
3->MATRİS İSLEMİ BİTTİ
>>>MATRİS DOGRULANDI[Invertable]-<<<
4->MATRİS İSLEMİ BİTTİ
>>>MATRİS DOGRULANDI[Invertable]-<<<
5->MATRİS İSLEMİ BİTTİ
>>>MATRİS DOGRULANDI[Invertable]-<<<
6->MATRİS İSLEMİ BİTTİ
>>>MATRİS DOGRULANDI[Invertable]-<<<
7->MATRİS İSLEMİ BİTTİ
>>>MATRİS DOGRULANDI[Invertable]-<<<
8->MATRİS İSLEMİ BİTTİ
>>>MATRİS DOGRULANDI[Invertable]-<<<
9->MATRİS İSLEMİ BİTTİ
>>>MATRİS DOGRULANDI[Invertable]-<<<
10->MATRİS İSLEMİ BİTTİ
>>>MATRİS DOGRULANDI[Invertable]-<<<
11->MATRİS İSLEMİ BİTTİ
>>>MATRİS DOGRULANDI[Invertable]-<<<
12->MATRİS İSLEMİ BİTTİ
Exiting Properly[C*0]...
Number of Inverted Matrix:12 non-Invertable Matrix:0
Total Elapsed time 24.00 seconds.
alican@alican-N56VZ:~/Desktop/final$

alican@alican-N56VZ:~/Desktop/final$ ./main 192.168.1.3 192.168.1.3 33 12 6 40 1
MMM Module socket is ready port:5001
Connected to VM module:5000
Running...
1->MATRİS İSLEMİ BİTTİ
KUYRUKLARDAKİ MATRİS SAYISI:6
2->MATRİS İSLEMİ BİTTİ
KUYRUKLARDAKİ MATRİS SAYISI:6
3->MATRİS İSLEMİ BİTTİ
KUYRUKLARDAKİ MATRİS SAYISI:6
4->MATRİS İSLEMİ BİTTİ
KUYRUKLARDAKİ MATRİS SAYISI:6
5->MATRİS İSLEMİ BİTTİ
KUYRUKLARDAKİ MATRİS SAYISI:6
6->MATRİS İSLEMİ BİTTİ
KUYRUKLARDAKİ MATRİS SAYISI:6
7->MATRİS İSLEMİ BİTTİ
KUYRUKLARDAKİ MATRİS SAYISI:5
8->MATRİS İSLEMİ BİTTİ
KUYRUKLARDAKİ MATRİS SAYISI:4
9->MATRİS İSLEMİ BİTTİ
KUYRUKLARDAKİ MATRİS SAYISI:3
10->MATRİS İSLEMİ BİTTİ
KUYRUKLARDAKİ MATRİS SAYISI:2
11->MATRİS İSLEMİ BİTTİ
KUYRUKLARDAKİ MATRİS SAYISI:1
12->MATRİS İSLEMİ BİTTİ
KUYRUKLARDAKİ MATRİS SAYISI:0
TOPLAM 12 TANE MATRİS ÜZERİNDE İSLEM YAPILDI.
Exiting Properly[C*0]...
Total Elapsed time 13.00 seconds.
alican@alican-N56VZ:~/Desktop/final$
```

OS: Ubuntu 12.04 x32 Processor: intel i7

Main argümanları: N:40, K=30, L=300, P=100,Trace=0;

```
Terminal
ubuntu@ubuntu: ~/Desktop/final
ubuntu@ubuntu:~/Desktop/final$ ./mmm
MAIN Module socket is ready port:5001
VM Module socket is ready port:5002
Waiting for VM Module connection
VM Module connected.
Waiting for MAIN Module connection
MAIN Module connected.
Running...
GELEN SIZE:40_ThreadNumber:100__TRACEMODE:0
Exiting Properly[P]...
Total Elapsed time 59.00 seconds.
ubuntu@ubuntu:~/Desktop/final$

ubuntu@ubuntu:~/Desktop/final$ ./vm 192.168.1.3
Connected to Main port:5000
VM Module socket is ready port:5002
Waiting for MAIN Module connection
MAIN Module Connected port:5000
Running...
GELEN SIZE:40_TRACEMODE:0
>>>MATRİS DOGRULANDI[1][Invertable]-<<<
>>>MATRİS DOGRULANDI[2][Invertable]-<<<
>>>MATRİS DOGRULANDI[3][Invertable]-<<<
>>>MATRİS DOGRULANDI[4][Invertable]-<<<
>>>MATRİS DOGRULANDI[5][Invertable]-<<<
>>>MATRİS DOGRULANDI[6][Invertable]-<<<
>>>MATRİS DOGRULANDI[7][Invertable]-<<<
>>>MATRİS DOGRULANDI[8][Invertable]-<<<
>>>MATRİS DOGRULANDI[9][Invertable]-<<<
>>>MATRİS DOGRULANDI[10][Invertable]-<<<
>>>MATRİS DOGRULANDI[11][Invertable]-<<<
>>>MATRİS DOGRULANDI[12][Invertable]-<<<
>>>MATRİS DOGRULANDI[13][Invertable]-<<<
>>>MATRİS DOGRULANDI[14][Invertable]-<<<
>>>MATRİS DOGRULANDI[15][Invertable]-<<<
>>>MATRİS DOGRULANDI[16][Invertable]-<<<
>>>MATRİS DOGRULANDI[17][Invertable]-<<<
>>>MATRİS DOGRULANDI[18][Invertable]-<<<
>>>MATRİS DOGRULANDI[19][Invertable]-<<<
>>>MATRİS DOGRULANDI[20][Invertable]-<<<
>>>MATRİS DOGRULANDI[21][Invertable]-<<<
>>>MATRİS DOGRULANDI[22][Invertable]-<<<
>>>MATRİS DOGRULANDI[23][Invertable]-<<<
>>>MATRİS DOGRULANDI[24][Invertable]-<<<
>>>MATRİS DOGRULANDI[25][Invertable]-<<<
>>>MATRİS DOGRULANDI[26][Invertable]-<<<
>>>MATRİS DOGRULANDI[27][Invertable]-<<<
>>>MATRİS DOGRULANDI[28][Invertable]-<<<
>>>MATRİS DOGRULANDI[29][Invertable]-<<<
>>>MATRİS DOGRULANDI[30][Invertable]-<<<
Exiting Properly[C*0]...
Number of Inverted Matrix:30 non-Invertable Matrix:0
Total Elapsed time 57.00 seconds.
ubuntu@ubuntu:~/Desktop/final$

ubuntu@ubuntu:~/Desktop/final$ ./main 192.168.1.3 192.168.1.3 40 30 300 100 0
MMM Module socket is ready port:5001
Connected to VM module:5000
Running...
TOPLAM 30 TANE MATRİS ÜZERİNDE İSLEM YAPILDI.
Exiting Properly[C*0]...
Total Elapsed time 33.00 seconds.
ubuntu@ubuntu:~/Desktop/final$
```

Main argümanları: N:33, K=12, L=6, P=40,Trace=1;

```
Terminal
ubuntu@ubuntu: ~/Desktop/final$ ./mmm
MAIN Module socket is ready port:5001
VM Module socket is ready port:5002
Waiting for VM Module connection
VM Module connected.
Waiting for MAIN Module connection
MAIN Module connected.
Running...
GELEN SIZE:33 ThreadNumber:40_TRACEMODE:1
1->MATRIS ISLEMLI BITTL
2->MATRIS ISLEMLI BITTL
3->MATRIS ISLEMLI BITTL
4->MATRIS ISLEMLI BITTL
5->MATRIS ISLEMLI BITTL
6->MATRIS ISLEMLI BITTL
7->MATRIS ISLEMLI BITTL
8->MATRIS ISLEMLI BITTL
9->MATRIS ISLEMLI BITTL
10->MATRIS ISLEMLI BITTL
11->MATRIS ISLEMLI BITTL
12->MATRIS ISLEMLI BITTL
Exiting Properly[P]...
Total Elapsed time 39.00 seconds.
ubuntu@ubuntu:~/Desktop/final$

ubuntu@ubuntu:~/Desktop/final$ ./vm 192.168.1.3
Connected to Main port:5000
VM Module socket is ready port:5002
Waiting for MAIN Module connection
MAIN Module Connected port:5000
Running...
GELEN SIZE:33 TRACEMODE:1
>>>MATRIS DOGRULANDI[1][Invertable]-<<<
1->MATRIS ISLEMLI BITTL
>>>MATRIS DOGRULANDI[2][Invertable]-<<<
2->MATRIS ISLEMLI BITTL
>>>MATRIS DOGRULANDI[3][Invertable]-<<<
3->MATRIS ISLEMLI BITTL
>>>MATRIS DOGRULANDI[4][Invertable]-<<<
4->MATRIS ISLEMLI BITTL
>>>MATRIS DOGRULANDI[5][Invertable]-<<<
5->MATRIS ISLEMLI BITTL
>>>MATRIS DOGRULANDI[6][Invertable]-<<<
6->MATRIS ISLEMLI BITTL
>>>MATRIS DOGRULANDI[7][Invertable]-<<<
7->MATRIS ISLEMLI BITTL
>>>MATRIS DOGRULANDI[8][Invertable]-<<<
8->MATRIS ISLEMLI BITTL
>>>MATRIS DOGRULANDI[9][Invertable]-<<<
9->MATRIS ISLEMLI BITTL
>>>MATRIS DOGRULANDI[10][Invertable]-<<<
10->MATRIS ISLEMLI BITTL
>>>MATRIS DOGRULANDI[11][Invertable]-<<<
11->MATRIS ISLEMLI BITTL
>>>MATRIS DOGRULANDI[12][Invertable]-<<<
12->MATRIS ISLEMLI BITTL
Exiting Properly[C^O]...
Number of Inverted Matrix:12 non-Invertable Matrix:0
Total Elapsed time 35.00 seconds.
ubuntu@ubuntu:~/Desktop/final$

ubuntu@ubuntu:~/Desktop/final$ ./main 192.168.1.3 192.168.1.3 33 12 6 40 1
MMM Module socket is ready port:5001
Connected to VM port:5000
Connected to VM module:5000
Running...
1->MATRIS ISLEMLI BITTL
KUYRUKLARDAKI MATRIS SAYISI:6
2->MATRIS ISLEMLI BITTL
KUYRUKLARDAKI MATRIS SAYISI:6
3->MATRIS ISLEMLI BITTL
KUYRUKLARDAKI MATRIS SAYISI:6
4->MATRIS ISLEMLI BITTL
KUYRUKLARDAKI MATRIS SAYISI:6
5->MATRIS ISLEMLI BITTL
KUYRUKLARDAKI MATRIS SAYISI:6
6->MATRIS ISLEMLI BITTL
KUYRUKLARDAKI MATRIS SAYISI:6
7->MATRIS ISLEMLI BITTL
KUYRUKLARDAKI MATRIS SAYISI:5
8->MATRIS ISLEMLI BITTL
KUYRUKLARDAKI MATRIS SAYISI:4
9->MATRIS ISLEMLI BITTL
KUYRUKLARDAKI MATRIS SAYISI:3
10->MATRIS ISLEMLI BITTL
KUYRUKLARDAKI MATRIS SAYISI:2
11->MATRIS ISLEMLI BITTL
KUYRUKLARDAKI MATRIS SAYISI:1
12->MATRIS ISLEMLI BITTL
KUYRUKLARDAKI MATRIS SAYISI:0
TOPLAM 12 TANE MATRIS UZERINDE ISLEM YAPILDI.
Exiting Properly[C^O]...
Total Elapsed time 14.00 seconds.
ubuntu@ubuntu:~/Desktop/final$
```

Main argümanları: N:20, K=15, L=40, P=40,Trace=1;

```
Terminal
ubuntu@ubuntu:~/Desktop/final$ gcc -c main.c -g
gcc -o main main.o -pthread
gcc -c mm.c -g
gcc -o mm mm.o -pthread
gcc -c vn.c
gcc -o vn vn.o -pthread
cat usage.txt
##-USAGE INFORMATION-##
[1]MMModule->". /mm"
[2]VMModule->". /vm <MM-IP>"
[3]MainModule->". /main <MM-IP> <VM-IP> <N> <K> <L> <P>"
#####
rm *.log
ubuntu@ubuntu:~/Desktop/final$ ./mmm
MAIN Module socket is ready port:5001
VM Module socket is ready port:5002
Waiting for VM Module connection
VM Module connected.
Waiting for MAIN Module connection
MAIN Module connected.
Running...
GELEN SIZE:20 ThreadNumber:40_TRACEMODE:1
1->MATRIS ISLEMLI BITTL
2->MATRIS ISLEMLI BITTL
3->MATRIS ISLEMLI BITTL
4->MATRIS ISLEMLI BITTL
5->MATRIS ISLEMLI BITTL
6->MATRIS ISLEMLI BITTL
7->MATRIS ISLEMLI BITTL
8->MATRIS ISLEMLI BITTL
9->MATRIS ISLEMLI BITTL
10->MATRIS ISLEMLI BITTL
11->MATRIS ISLEMLI BITTL
12->MATRIS ISLEMLI BITTL
13->MATRIS ISLEMLI BITTL
14->MATRIS ISLEMLI BITTL
15->MATRIS ISLEMLI BITTL
Exiting Properly[P]...
Total Elapsed time 10739.00 seconds.
ubuntu@ubuntu:~/Desktop/final$

ubuntu@ubuntu:~/Desktop/final$ ./vm 192.168.1.3
Connected to Main port:5000
VM Module socket is ready port:5002
Waiting for MAIN Module connection
MAIN Module Connected port:5000
Running...
GELEN SIZE:20 TRACEMODE:1
>>>MATRIS DOGRULANDI[1][Invertable]-<<<
1->MATRIS ISLEMLI BITTL
>>>MATRIS DOGRULANDI[2][Invertable]-<<<
2->MATRIS ISLEMLI BITTL
>>>MATRIS DOGRULANDI[3][Invertable]-<<<
3->MATRIS ISLEMLI BITTL
>>>MATRIS DOGRULANDI[4][Invertable]-<<<
4->MATRIS ISLEMLI BITTL
>>>MATRIS DOGRULANDI[5][Invertable]-<<<
5->MATRIS ISLEMLI BITTL
>>>MATRIS DOGRULANDI[6][Invertable]-<<<
6->MATRIS ISLEMLI BITTL
>>>MATRIS DOGRULANDI[7][Invertable]-<<<
7->MATRIS ISLEMLI BITTL
>>>MATRIS DOGRULANDI[8][Invertable]-<<<
8->MATRIS ISLEMLI BITTL
>>>MATRIS DOGRULANDI[9][Invertable]-<<<
9->MATRIS ISLEMLI BITTL
>>>MATRIS DOGRULANDI[10][Invertable]-<<<
10->MATRIS ISLEMLI BITTL
>>>MATRIS DOGRULANDI[11][Invertable]-<<<
11->MATRIS ISLEMLI BITTL
>>>MATRIS DOGRULANDI[12][Invertable]-<<<
12->MATRIS ISLEMLI BITTL
>>>MATRIS DOGRULANDI[13][Invertable]-<<<
13->MATRIS ISLEMLI BITTL
>>>MATRIS DOGRULANDI[14][Invertable]-<<<
14->MATRIS ISLEMLI BITTL
>>>MATRIS DOGRULANDI[15][Invertable]-<<<
15->MATRIS ISLEMLI BITTL
Exiting Properly[C^O]...
Number of Inverted Matrix:15 non-Invertable Matrix:0
Total Elapsed time 52.00 seconds.
ubuntu@ubuntu:~/Desktop/final$

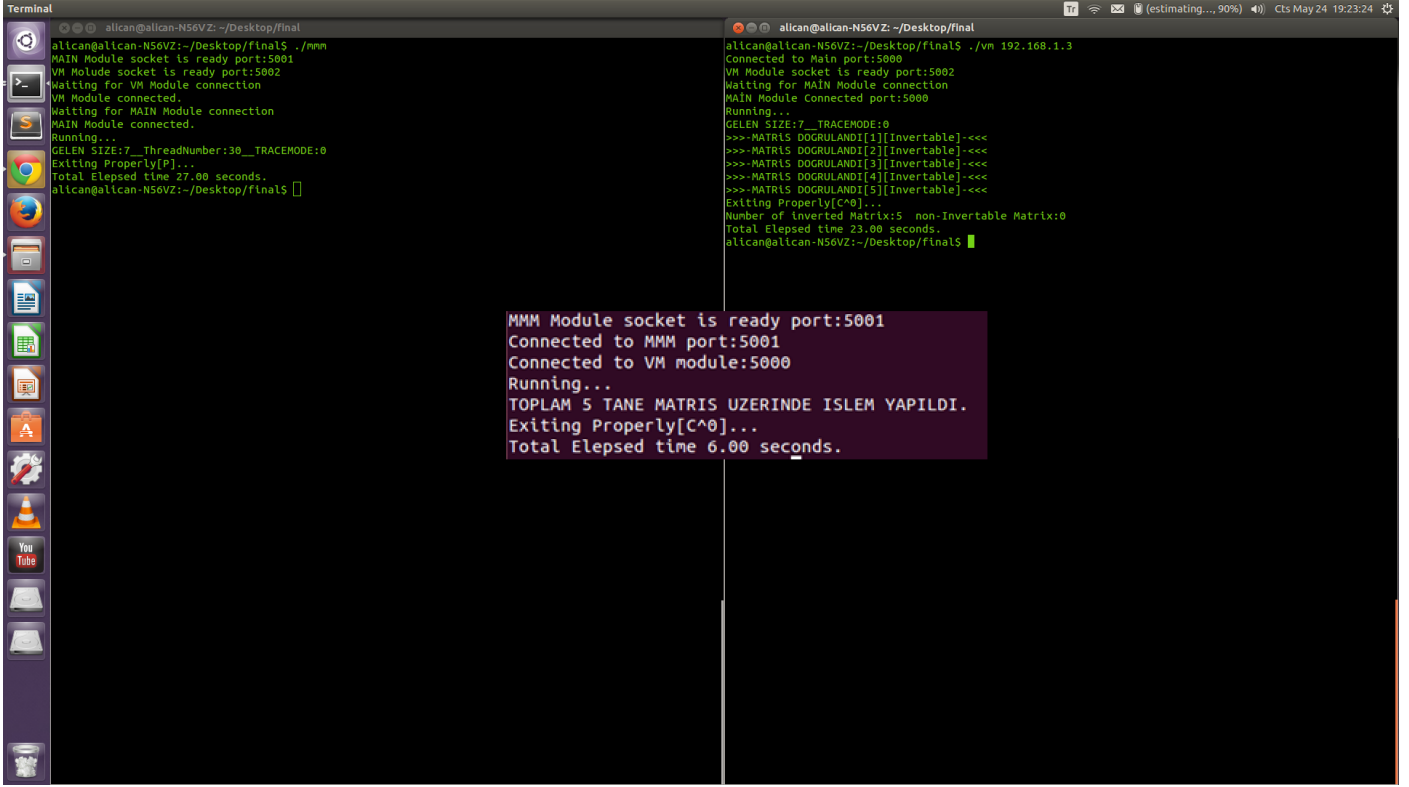
ubuntu@ubuntu:~/Desktop/final$ ./main 192.168.1.3 192.168.1.3 20 15 40 40 1
MMM Module socket is ready port:5001
Connected to VM port:5000
Connected to VM module:5000
Running...
1->MATRIS ISLEMLI BITTL
KUYRUKLARDAKI MATRIS SAYISI:14
2->MATRIS ISLEMLI BITTL
KUYRUKLARDAKI MATRIS SAYISI:13
3->MATRIS ISLEMLI BITTL
KUYRUKLARDAKI MATRIS SAYISI:12
4->MATRIS ISLEMLI BITTL
KUYRUKLARDAKI MATRIS SAYISI:11
5->MATRIS ISLEMLI BITTL
KUYRUKLARDAKI MATRIS SAYISI:10
6->MATRIS ISLEMLI BITTL
KUYRUKLARDAKI MATRIS SAYISI:9
7->MATRIS ISLEMLI BITTL
KUYRUKLARDAKI MATRIS SAYISI:8
8->MATRIS ISLEMLI BITTL
KUYRUKLARDAKI MATRIS SAYISI:7
9->MATRIS ISLEMLI BITTL
KUYRUKLARDAKI MATRIS SAYISI:6
10->MATRIS ISLEMLI BITTL
KUYRUKLARDAKI MATRIS SAYISI:5
11->MATRIS ISLEMLI BITTL
KUYRUKLARDAKI MATRIS SAYISI:4
12->MATRIS ISLEMLI BITTL
KUYRUKLARDAKI MATRIS SAYISI:3
13->MATRIS ISLEMLI BITTL
KUYRUKLARDAKI MATRIS SAYISI:2
14->MATRIS ISLEMLI BITTL
KUYRUKLARDAKI MATRIS SAYISI:1
15->MATRIS ISLEMLI BITTL
KUYRUKLARDAKI MATRIS SAYISI:0
TOPLAM 15 TANE MATRIS UZERINDE ISLEM YAPILDI.
Exiting Properly[C^O]...
Total Elapsed time 16.00 seconds.
ubuntu@ubuntu:~/Desktop/final$
```

## FARKLI BİLGİSAYAR ÜZERİNDE ÇALIŞMA SONUÇLARI:

OS: Ubuntu 12.04 x32 – Ubuntu 13.10 x64

Processor: intel i7 2nd – intel i7 3rd

Main argümanları: N:7, K=5, L=25, P=30,Trace=0;



```
alican@alican-N56VZ: ~/Desktop/final
MAIN Module socket is ready port:5001
VM Module socket is ready port:5002
Waiting for VM Module connection
VM Module connected.
Waiting for MAIN Module connection
MAIN Module connected.
Running...
GELEN SIZE:7 ThreadNumber:30 TRACEMODE:0
Exiting Properly[P]...
Total Elepsed time 27.00 seconds.
alican@alican-N56VZ:~/Desktop/final$

alican@alican-N56VZ:~/Desktop/final$ ./vm 192.168.1.3
Connected to Main port:5000
VM Module socket is ready port:5002
Waiting for MAIN Module connection
MAIN Module Connected port:5000
Running...
GELEN SIZE:7 TRACEMODE:0
>>>-MATRİS DOGRULANDI[1][Invertable]-<<<
>>>-MATRİS DOGRULANDI[2][Invertable]-<<<
>>>-MATRİS DOGRULANDI[3][Invertable]-<<<
>>>-MATRİS DOGRULANDI[4][Invertable]-<<<
>>>-MATRİS DOGRULANDI[5][Invertable]-<<<
Exiting Properly[C^0]...
Number of Inverted Matrix:5 non-Invertable Matrix:0
Total Elepsed time 23.00 seconds.
alican@alican-N56VZ:~/Desktop/final$

MMM Module socket is ready port:5001
Connected to MMM port:5001
Connected to VM module:5000
Running...
TOPLAM 5 TANE MATRİS ÜZERİNDE İŞLEM YAPILDI.
Exiting Properly[C^0]...
Total Elepsed time 6.00 seconds.
```

- Her Program Kendi için log dosyası oluşturmaktadır,
- Bu log dosyalarında hangi matris üzerinde işlem yapıldığı ve hangi işlemlerin yapıldığı ayrıntılı olarak yer almaktadır.



## ÖRNEK LOG DOSYASI GÖRÜNTÜLERİ:

### MAIN PROGRAMI LOG DOSYASI:

1	MAIN-5316.log x MMM-5312.log x VM-5314.log x							
2	Bilgi:MMM-YE GIDEN U-1							
3	0.02	0.30	0.11	0.03	-0.08	-0.04	-0.00	-0.00
4	0.00	-0.37	-0.13	-0.03	0.09	0.11	0.01	0.02
5	-0.00	-0.00	-0.01	-0.01	-0.02	-0.08	-0.01	-0.00
6	0.00	0.00	0.00	0.00	0.01	-0.05	-0.01	0.01
7	0.00	0.00	0.00	0.00	0.06	0.03	0.00	-0.04
8	0.00	0.00	0.00	0.00	0.00	0.09	0.01	0.03
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.05
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
11								
12								
13	Bilgi:MMM-YE GIDEN L-1							
14	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	-0.39	1.00	0.00	0.00	0.00	0.00	0.00	0.00
16	1.09	-3.99	1.00	0.00	0.00	0.00	0.00	0.00
17	-0.78	4.29	-3.84	1.00	0.00	0.00	0.00	0.00
18	-0.64	-0.36	-0.69	0.66	1.00	0.00	0.00	0.00
19	1.35	0.55	2.14	-1.03	-4.19	1.00	0.00	0.00
20	-9.13	-2.89	-14.24	6.08	30.63	-9.12	1.00	0.00
21	-0.17	-0.02	-0.72	0.02	1.28	-1.51	0.17	1.00
22								
23								
24	Bilgi:MMM-DEN GELEN U-1*L-1							
25	0.02	-0.01	0.01	-0.00	-0.00	-0.01	-0.00	-0.00
26	0.03	0.00	0.02	-0.03	-0.04	-0.02	0.01	0.02
27	0.01	0.01	0.04	-0.02	-0.06	0.03	-0.01	-0.00
28	-0.03	0.00	-0.06	0.03	0.06	-0.01	-0.00	0.01
29	-0.02	-0.02	-0.00	0.03	-0.00	0.06	-0.00	-0.04
30	0.03	0.02	0.03	-0.03	-0.04	-0.04	0.01	0.03
31	-0.01	-0.01	0.00	0.01	0.01	0.06	-0.01	-0.05
32	-0.01	-0.00	-0.03	0.00	0.06	-0.07	0.01	0.05
33								
34								
35	Bilgi:VM YE GIDEN A							
36	56.00	45.00	31.00	53.00	11.00	18.00	37.00	15.00
37	22.00	15.00	36.00	60.00	10.00	51.00	45.00	15.00
38	27.00	11.00	42.00	10.00	35.00	30.00	42.00	56.00
39	53.00	13.00	31.00	50.00	55.00	43.00	12.00	24.00
40	27.00	33.00	41.00	29.00	15.00	17.00	59.00	53.00
41	22.00	59.00	52.00	47.00	24.00	10.00	53.00	41.00
42	11.00	59.00	15.00	36.00	53.00	48.00	56.00	45.00
43	25.00	52.00	59.00	44.00	34.00	10.00	32.00	51.00
44								
45								
46	Bilgi:VM YE GIDEN A-1							
47	0.02	-0.01	0.01	-0.00	-0.00	-0.01	-0.00	-0.00
48	0.03	0.00	0.02	-0.03	-0.04	-0.02	0.01	0.02
49	0.01	0.01	0.04	-0.02	-0.06	0.03	-0.01	-0.00
50	-0.03	0.00	-0.06	0.03	0.06	-0.01	-0.00	0.01
51	-0.02	-0.02	-0.00	0.03	-0.00	0.06	-0.00	-0.04
52	0.03	0.02	0.03	-0.03	-0.04	-0.04	0.01	0.03
53	-0.01	-0.01	0.00	0.01	0.01	0.06	-0.01	-0.05
54	-0.01	-0.00	-0.03	0.00	0.06	-0.07	0.01	0.05
55								
56	1->MATRİS İŞLEMİ BİTTİ							
57								
58	Bilgi:MMM-YE GIDEN U-1							
59	0.02	-0.19	0.00	-0.04	-0.09	-0.02	0.19	-0.01
60	0.00	0.23	-0.02	0.05	0.04	0.01	-0.07	0.00
61	0.00	0.00	0.03	0.02	0.03	0.01	-0.36	0.02
62	0.00	0.00	0.00	-0.01	-0.02	-0.00	0.26	-0.01
63	0.00	0.00	0.00	0.00	0.07	0.02	0.23	-0.01
64	0.00	0.00	0.00	0.00	0.00	-0.01	0.25	-0.01

# MMM PROGRAMI LOG DOSYASI:

MAIN-5316.log x								
MMM-5312.log x								
VM-5314.log x								
GELEN SIZE:8 ThreadNumber:35 TRACEMODE:1								
Bilgi:MAİNDEN GELEN U-1								
0.02	0.30	0.11	0.03	-0.08	-0.04	-0.00	-0.00	
0.00	-0.37	-0.13	-0.03	0.09	0.11	0.01	0.02	
-0.00	-0.00	-0.01	-0.01	-0.02	-0.00	-0.01	-0.00	
0.00	0.00	0.00	0.00	0.01	-0.05	-0.01	0.01	
0.00	0.00	0.00	0.00	0.06	0.03	0.00	-0.04	
0.00	0.00	0.00	0.00	0.00	0.09	0.01	0.03	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.05	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	
Bilgi:MAİNDEN GELEN L-1								
1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
-0.39	1.00	0.00	0.00	0.00	0.00	0.00	0.00	
1.09	-3.99	1.00	0.00	0.00	0.00	0.00	0.00	
-0.78	4.29	-3.84	1.00	0.00	0.00	0.00	0.00	
-0.64	-0.36	-0.69	0.66	1.00	0.00	0.00	0.00	
1.35	0.55	2.14	-1.03	-4.19	1.00	0.00	0.00	
-9.13	-2.89	-14.24	6.00	30.63	-9.12	1.00	0.00	
-0.17	-0.02	-0.72	0.02	1.28	-1.51	0.17	1.00	
Bilgi:U-1*L-1								
0.02	-0.01	0.01	-0.00	-0.00	-0.01	-0.00	-0.00	
0.03	0.00	0.02	-0.03	-0.04	-0.02	0.01	0.02	
0.01	0.01	0.04	-0.02	-0.06	0.03	-0.01	-0.00	
-0.03	0.00	-0.06	0.03	0.06	-0.01	-0.00	0.01	
-0.02	-0.02	-0.00	0.03	-0.00	0.06	-0.00	-0.04	
0.03	0.02	0.03	-0.03	-0.04	-0.04	0.01	0.03	
-0.01	-0.01	0.00	0.01	0.01	0.06	-0.01	-0.05	
-0.01	-0.00	-0.03	0.00	0.06	-0.07	0.01	0.05	
Bilgi:MAİNE GİDEN U-1*L-1								
0.02	-0.01	0.01	-0.00	-0.00	-0.01	-0.00	-0.00	
0.03	0.00	0.02	-0.03	-0.04	-0.02	0.01	0.02	
0.01	0.01	0.04	-0.02	-0.06	0.03	-0.01	-0.00	
-0.03	0.00	-0.06	0.03	0.06	-0.01	-0.00	0.01	
-0.02	-0.02	-0.00	0.03	-0.00	0.06	-0.00	-0.04	
0.03	0.02	0.03	-0.03	-0.04	-0.04	0.01	0.03	
-0.01	-0.01	0.00	0.01	0.01	0.06	-0.01	-0.05	
-0.01	-0.00	-0.03	0.00	0.06	-0.07	0.01	0.05	
Bilgi:VM DEN GELEN A								
56.00	45.00	31.00	53.00	11.00	18.00	37.00	15.00	
22.00	15.00	36.00	60.00	10.00	51.00	45.00	15.00	
27.00	11.00	42.00	10.00	35.00	30.00	42.00	56.00	
53.00	13.00	31.00	50.00	55.00	43.00	12.00	24.00	
27.00	33.00	41.00	29.00	15.00	17.00	59.00	53.00	
22.00	59.00	52.00	47.00	24.00	10.00	53.00	41.00	
11.00	59.00	15.00	36.00	53.00	48.00	56.00	45.00	
25.00	52.00	59.00	44.00	34.00	10.00	32.00	51.00	
Bilgi:VM DEN GELEN A-1								
0.02	-0.01	0.01	-0.00	-0.00	-0.01	-0.00	-0.00	
0.03	0.00	0.02	-0.03	-0.04	-0.02	0.01	0.02	
0.01	0.01	0.04	-0.02	-0.06	0.03	-0.01	-0.00	
-0.03	0.00	-0.06	0.03	0.06	-0.01	-0.00	0.01	
-0.02	-0.02	-0.00	0.03	-0.00	0.06	-0.00	-0.04	
0.03	0.02	0.03	-0.03	-0.04	-0.04	0.01	0.03	
-0.01	-0.01	0.00	0.01	0.01	0.06	-0.01	-0.05	
-0.01	-0.00	-0.03	0.00	0.06	-0.07	0.01	0.05	



## VM PROGRAMI LOG DOSYASI:

```
MAIN-5316.log x MMM-5312.log x VM-5314.log x
1 GELEN SIZE:8 TRACE MODE:1
2
3 Bilgi:MAINDEN GELEN A
4 56.00 45.00 31.00 53.00 11.00 18.00 37.00 15.00
5 22.00 15.00 36.00 60.00 10.00 51.00 45.00 15.00
6 27.00 11.00 42.00 10.00 35.00 30.00 42.00 56.00
7 53.00 13.00 31.00 50.00 55.00 43.00 12.00 24.00
8 27.00 33.00 41.00 29.00 15.00 17.00 59.00 53.00
9 22.00 59.00 52.00 47.00 24.00 10.00 53.00 41.00
10 11.00 59.00 15.00 36.00 53.00 48.00 56.00 45.00
11 25.00 52.00 59.00 44.00 34.00 10.00 32.00 51.00
12
13
14 Bilgi:MAINDEN GELEN A-1
15 0.02 -0.01 0.01 -0.00 -0.00 -0.01 -0.00 -0.00
16 0.03 0.00 0.02 -0.03 -0.04 -0.02 0.01 0.02
17 0.01 0.01 0.04 -0.02 -0.06 0.03 -0.01 -0.00
18 -0.03 0.00 -0.06 0.03 0.06 -0.01 -0.00 0.01
19 -0.02 -0.02 -0.00 0.03 -0.00 0.06 -0.00 -0.04
20 0.03 0.02 0.03 -0.03 -0.04 -0.04 0.01 0.03
21 -0.01 -0.01 0.00 0.01 0.01 0.06 -0.01 -0.05
22 -0.01 -0.00 -0.03 0.00 0.06 -0.07 0.01 0.05
23
24
25 Bilgi:MMM E GIDEN A
26 56.00 45.00 31.00 53.00 11.00 18.00 37.00 15.00
27 22.00 15.00 36.00 60.00 10.00 51.00 45.00 15.00
28 27.00 11.00 42.00 10.00 35.00 30.00 42.00 56.00
29 53.00 13.00 31.00 50.00 55.00 43.00 12.00 24.00
30 27.00 33.00 41.00 29.00 15.00 17.00 59.00 53.00
31 22.00 59.00 52.00 47.00 24.00 10.00 53.00 41.00
32 11.00 59.00 15.00 36.00 53.00 48.00 56.00 45.00
33 25.00 52.00 59.00 44.00 34.00 10.00 32.00 51.00
34
35
36 Bilgi:MMM E GIDEN A-1
37 0.02 -0.01 0.01 -0.00 -0.00 -0.01 -0.00 -0.00
38 0.03 0.00 0.02 -0.03 -0.04 -0.02 0.01 0.02
39 0.01 0.01 0.04 -0.02 -0.06 0.03 -0.01 -0.00
40 -0.03 0.00 -0.06 0.03 0.06 -0.01 -0.00 0.01
41 -0.02 -0.02 -0.00 0.03 -0.00 0.06 -0.00 -0.04
42 0.03 0.02 0.03 -0.03 -0.04 -0.04 0.01 0.03
43 -0.01 -0.01 0.00 0.01 0.01 0.06 -0.01 -0.05
44 -0.01 -0.00 -0.03 0.00 0.06 -0.07 0.01 0.05
45
46
47 Bilgi:MMM DEN GELEN A*A-1(~BIRIM)
48 1.00 -0.00 0.00 -0.00 -0.00 0.00 0.00 -0.00
49 0.00 1.00 -0.00 -0.00 -0.00 0.00 0.00 -0.00
50 0.00 -0.00 1.00 -0.00 -0.00 0.00 0.00 -0.00
51 -0.00 -0.00 0.00 1.00 -0.00 0.00 0.00 -0.00
52 -0.00 -0.00 -0.00 -0.00 1.00 0.00 0.00 -0.00
53 -0.00 -0.00 -0.00 -0.00 -0.00 1.00 -0.00 0.00
54 0.00 -0.00 -0.00 -0.00 -0.00 -0.00 1.00 0.00
55 0.00 -0.00 0.00 -0.00 -0.00 -0.00 0.00 1.00
56
57 >>>MATRİS DOGRULANDI[1][Invertable]<<<
58 1->MATRİS İSLEMİ BİTTİ
59
```