

Part-1

11x11

```
"C:\Users\alper\Desktop\EE\EE4-1\EE 441\Programming Assignment 3\Part 1"
MATRIX:
1 0 0 0 0 3 0 19 0 0 0
0 1 0 0 0 0 0 0 0 0 0
0 0 1 0 0 0 0 0 0 0 0
0 0 0 1 0 0 0 0 0 0 0
0 0 0 0 1 11 0 0 0 0 0
0 0 0 0 0 1 0 0 0 0 0
0 0 0 0 0 10 21 16 18 20 0
0 0 0 0 0 0 22 1 21 13 0
0 0 0 0 0 0 19 12 17 24 0
0 0 0 0 0 0 10 19 3 11 0
0 0 0 0 0 0 0 0 0 0 1

The determinant of the 1.matrix is: -8996

MATRIX:
1 0 0 0 0 0 0 0 0 0 0
0 1 0 0 0 0 0 0 0 0 0
0 0 1 0 0 0 0 0 0 0 0
0 0 0 1 0 0 0 0 0 0 0
0 0 0 0 1 0 0 0 0 0 0
0 0 0 0 0 1 0 0 0 0 0
0 0 0 0 0 0 17 9 0 19 20
0 0 11 0 0 0 24 3 8 12 0
0 0 0 0 0 0 14 16 20 6 0
0 0 0 0 0 0 2 2 16 20 0
0 0 0 0 0 0 0 0 0 0 1

The determinant of the 2.matrix is: -135960

MATRIX:
1 0 0 0 0 0 0 0 0 0 0
0 1 0 0 0 0 0 0 0 0 0
0 0 1 0 0 0 0 0 0 0 0
0 0 0 19 0 0 0 0 0 0 0
0 0 0 0 1 0 0 0 6 0 0
0 0 0 0 0 1 0 0 0 0 0
0 0 0 0 0 0 6 1 18 23 0
0 0 0 0 0 0 4 23 9 4 0
0 0 0 0 0 0 14 6 15 16 1 0
0 0 0 0 0 0 6 8 19 14 0
0 0 0 0 0 0 0 0 0 0 1

The determinant of the 3.matrix is: 75240

Used Ram size is 2 MegaByte.

Process returned 0 (0x0)   execution time : 0.324 s
Press any key to continue.
```

12x12

```
"C:\Users\alper\Desktop\EE\EE4-1\EE 441\Programming Assignment 3\Part 1"
MATRIX:
1 0 0 0 20 0 0 0 0 0 0 0
0 1 0 0 0 0 0 0 0 0 0 0
0 0 1 0 0 0 0 0 8 12 0 0
0 0 0 1 0 0 0 0 0 0 0 0
0 0 0 0 1 0 0 0 0 0 0 0
0 0 0 0 0 1 0 0 0 0 0 0
0 0 0 0 0 0 21 6 5 13 0 0
0 0 23 0 0 0 18 0 16 12 0 0
0 0 0 0 0 0 5 10 9 24 0 0
0 0 0 0 0 0 12 23 8 20 0 0
0 0 0 0 0 0 0 0 0 0 1 0
0 0 0 0 0 0 0 0 0 0 0 1

The determinant of the 1.matrix is: -460962

MATRIX:
1 0 0 0 0 12 0 0 0 0 0 0
0 1 0 0 0 0 0 0 0 0 0 0
0 0 1 0 0 0 0 0 0 0 0 0
0 0 0 1 0 0 0 0 0 0 0 0
0 0 0 0 1 0 0 0 0 0 0 0
0 0 0 0 0 12 0 0 0 0 0 0
0 0 0 0 0 0 1 0 0 0 0 0
0 0 0 0 0 0 5 24 6 2 0 0
0 0 0 0 0 0 0 0 0 16 24 0
0 0 0 0 0 0 0 16 5 7 16 0
0 0 0 0 0 0 0 7 12 7 12 0
0 0 0 0 0 0 0 0 0 0 0 1

The determinant of the 2.matrix is: 200352

MATRIX:
1 0 0 0 0 0 0 0 0 0 0 0
0 1 0 0 0 0 0 0 0 0 0 0
0 0 1 0 0 0 0 0 0 0 0 0
0 0 0 1 0 0 0 0 0 0 0 0
0 0 0 0 1 0 0 0 0 0 0 0
0 0 0 0 0 16 10 1 0 0 0 0
0 0 0 0 0 24 19 6 23 0 0 0
0 0 14 0 3 24 8 19 0 0 0 0
0 0 0 0 0 14 2 20 0 0 20 0
0 0 0 0 0 0 0 0 0 1 0 0
0 0 0 2 0 0 0 0 0 0 1 0
0 0 0 0 0 0 0 0 0 0 0 1

The determinant of the 3.matrix is: -24525

Used Ram size is 6 MegaByte.

Process returned 0 (0x0)   execution time : 0.721 s
Press any key to continue.
```

13x13

```
"C:\Users\alper\Desktop\EE\EE4-1\EE 441\Programming Assignment 3\Part 1"
MATRIX:
1 0 0 0 0 0 0 0 0 0 0 0 0
0 1 0 0 0 0 0 0 0 0 0 0 0
0 0 0 10 3 19 0 0 0 0 0 0 0
0 0 11 13 1 14 0 1 0 0 0 0 0
0 0 5 23 2 10 0 0 0 0 0 0 0
0 0 7 10 10 1 0 0 0 0 0 0 0
0 0 0 0 7 0 1 0 0 0 0 0 0
0 0 0 0 0 0 0 1 0 0 0 0 0
0 0 0 0 0 0 0 0 1 0 0 0 0
0 0 0 0 0 0 0 0 0 13 0 0 0
0 0 0 0 0 0 0 0 0 0 1 0 0
0 0 0 0 0 0 0 0 0 0 0 1 0
0 0 0 0 0 0 0 0 0 0 0 0 1

The determinant of the 1.matrix is: -422071

MATRIX:
1 0 0 0 0 0 0 0 0 0 0 0 0
0 1 0 0 0 0 0 0 0 0 0 0 0
0 0 9 22 5 3 0 0 0 0 0 0 0
0 0 21 12 11 0 0 0 0 0 0 0 0
0 0 8 19 17 19 0 0 0 0 0 0 0
0 22 16 6 23 22 0 0 0 0 0 0 0
0 0 0 0 0 0 1 0 0 0 0 0 0
0 0 0 0 0 0 23 1 0 0 0 0 0
0 0 0 0 0 0 0 0 1 0 0 0 0
0 0 0 0 0 0 0 0 0 1 0 0 0
0 0 0 0 0 0 0 0 0 0 1 0 0
0 0 0 0 0 0 0 0 0 16 0 1 0
0 0 0 0 0 0 0 0 0 0 0 0 1

The determinant of the 2.matrix is: -14995

MATRIX:
1 0 0 0 0 0 0 0 0 0 0 0 0
0 1 0 0 0 0 0 0 0 0 5 0 0
0 0 22 16 11 5 0 0 0 0 0 0 13
0 0 13 7 5 9 0 0 0 0 0 0 0
0 0 14 1 16 21 0 0 0 0 0 0 0
0 0 13 13 13 5 0 0 0 0 0 0 0
0 0 0 0 0 0 1 0 0 0 0 0 0
0 0 0 0 0 0 0 1 0 0 0 0 0
0 0 0 0 0 0 0 0 1 0 0 0 0
0 0 0 0 0 0 0 0 0 1 0 0 0
0 0 0 0 0 0 0 0 0 0 1 0 0
0 0 0 0 0 0 0 0 0 0 0 1 0
0 0 0 0 0 0 0 0 0 0 0 0 1

The determinant of the 3.matrix is: -9626

Used Ram size is 12 MegaByte.

Process returned 0 (0x0)   execution time : 5.348 s
Press any key to continue.
```

14x14

```
"C:\Users\alper\Desktop\EE\EE4-1\EE 441\Programming Assignment 3\Part 1"
MATRIX:
1 0 0 0 0 0 0 0 0 0 0 0 0 0
0 1 0 0 0 0 0 0 0 0 0 0 0 0
0 0 1 0 0 0 0 0 0 0 0 0 0 0
0 0 0 1 0 0 0 0 0 0 0 0 0 0
0 0 0 0 20 13 18 17 0 0 0 0 0 23
0 0 0 0 2 5 13 0 0 0 0 0 0 0
0 0 0 0 2 2 24 24 0 0 0 0 0 0
0 0 0 0 18 24 23 0 0 0 0 0 0 0
0 0 0 0 0 0 0 1 0 0 0 0 0 18
0 0 0 0 0 0 0 0 1 0 0 0 0 0
0 0 0 0 0 0 0 0 0 1 0 0 0 0
0 0 0 0 0 0 0 0 0 0 1 0 0 0
0 0 0 0 0 0 0 0 0 0 0 1 0 0
0 0 0 0 0 0 0 0 0 0 0 0 1 0
0 0 0 0 0 0 0 0 0 0 0 0 0 1

The determinant of the 1.matrix is: -63062

MATRIX:
1 0 0 24 0 0 0 0 0 0 0 0 0 0
24 1 0 0 0 0 0 0 0 0 0 0 0 0
0 0 1 0 0 0 0 0 0 0 0 0 0 0
0 0 0 24 22 18 18 0 0 0 9 0 0 0
0 0 0 12 5 8 16 0 0 0 0 0 0 0
0 0 0 2 0 2 14 0 0 0 0 0 0 0
0 0 0 14 24 9 24 0 0 0 0 0 0
0 0 0 0 0 0 0 1 0 0 0 0 0 0
0 0 0 0 0 0 0 0 1 0 0 0 0 0
0 0 0 0 0 0 0 0 0 1 0 0 0 0
0 0 0 0 0 0 0 0 0 0 1 0 0 0
0 0 0 0 0 0 0 0 0 0 0 1 0 0
0 0 0 0 0 0 0 0 0 0 0 0 1 0
0 0 0 0 0 0 0 0 0 0 0 0 0 1

The determinant of the 2.matrix is: -8092

MATRIX:
1 0 0 0 0 0 0 0 0 0 0 0 0 0
0 1 0 0 0 0 0 0 0 0 0 0 0 0
0 0 1 0 0 0 0 0 0 0 0 0 0 0
0 0 0 1 0 0 0 0 0 0 0 0 0 0
0 0 0 0 1 0 0 0 0 0 0 0 0 0
0 0 0 0 0 1 0 0 0 0 0 0 0 0
0 0 0 0 0 0 1 0 0 0 0 0 0 0
0 0 0 0 0 0 0 1 0 0 0 0 0 0
0 0 0 0 0 0 0 0 1 0 0 0 0 0
0 0 0 0 0 0 0 0 0 1 0 0 0 0
0 0 0 0 0 0 0 0 0 0 1 0 0 0
0 0 0 0 0 0 0 0 0 0 0 1 0 0
0 0 0 0 0 0 0 0 0 0 0 0 1 0
0 0 0 0 0 0 0 0 0 0 0 0 0 1

The determinant of the 3.matrix is: 915002

Used Ram size is 16 MegaByte.

Process returned 0 (0x0)   execution time : 8.886 s
Press any key to continue.
```

15x15

```
"C:\Users\alper\Desktop\EE\EE4-1\EE 441\Programming Assignment 3\Part 1"
MATRIX:
1 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 1 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 1 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 1 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 1 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 2 0 8 14 0 0 0 0 0 0
0 0 0 0 0 3 10 7 24 0 0 0 0 0 0
0 0 0 0 0 2 8 13 12 0 0 0 0 0 0
0 0 0 0 0 1 0 10 3 0 0 0 0 0 0
0 10 0 1 0 0 0 0 0 1 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 1 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 1 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 1 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 1 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 1

The determinant of the 1.matrix is: -192

MATRIX:
1 0 0 0 0 0 0 0 0 0 0 0 0 0 13
0 1 0 0 0 0 0 0 0 0 0 0 0 0 0
0 24 1 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 1 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 1 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 1 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 1 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 1 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 1 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 1 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 1 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 1 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 1 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 1 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 1

The determinant of the 2.matrix is: -31283

MATRIX:
9 7 21 5 0 0 0 0 0 0 0 0 0 0 0
3 12 9 9 0 0 0 0 0 0 0 0 0 0 0
4 22 7 8 0 0 0 0 0 0 0 0 0 0 0
7 13 13 8 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 1 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 1 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 1 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 1 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 1 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 1 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 1 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 1 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 1 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 1 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 1

The determinant of the 3.matrix is: -2763

Used Ram size is 26 MegaByte.

Process returned 0 (0x0)   execution time : 14.679 s
Press any key to continue.
```

Part-2

11x11

```
"C:\Users\alper\Desktop\EE\EE4-1\EE 441\Programming Assignment 3\Part 2"
MATRIX:
1 0 0 0 0 0 0 0 0 0 0
0 1 0 0 0 0 0 0 0 0 0
0 0 1 0 0 0 0 0 0 0 0
0 0 0 1 0 0 0 0 0 0 0
0 0 0 0 1 0 0 0 0 0 0
0 0 0 0 0 1 0 0 0 0 0
0 0 0 0 0 0 1 0 0 0 0
0 0 0 0 0 0 0 1 0 0 0
0 0 11 0 0 0 24 3 8 12 0
0 0 0 0 0 0 14 16 20 6 0
0 0 0 0 0 0 2 2 16 20 0
0 0 0 0 0 0 0 0 0 1
The determinant of the 1.matrix is: -135960
MATRIX:
1 0 0 0 8 0 0 0 0 0 0
0 1 0 0 0 0 0 0 0 0 0
0 0 1 0 0 0 0 0 0 0 0
0 0 0 1 0 0 0 0 0 0 0
0 0 0 0 19 0 0 0 0 0 0
0 0 0 0 1 0 0 0 6 0 0
0 0 0 0 0 1 0 0 0 0 0
0 0 0 0 0 0 6 1 18 23 0
0 0 0 0 0 0 4 23 9 4 0
0 0 0 0 0 14 6 15 16 1 0
0 0 0 0 0 0 6 8 19 14 0
0 0 0 0 0 0 0 0 0 1
The determinant of the 2.matrix is: 75240
MATRIX:
1 0 0 0 0 3 0 19 0 0 0
0 1 0 0 0 0 0 0 0 0 0
0 0 1 0 0 0 0 0 0 0 0
0 0 0 1 0 0 0 0 0 0 0
0 0 0 0 1 11 0 0 0 0 0
0 0 0 0 0 1 0 0 0 0 0
0 0 0 0 0 10 21 16 18 20 0
0 0 0 0 0 0 22 1 21 13 0
0 0 0 0 0 0 19 12 17 24 0
0 0 0 0 0 0 10 19 3 11 0
0 0 0 0 0 0 0 0 0 1
The determinant of the 3.matrix is: -8996
Used Ram size is 2 MegaByte.
Process returned 0 (0x0) execution time : 0.199 s
Press any key to continue.
```

12x12

```
"C:\Users\alper\Desktop\EE\EE4-1\EE 441\Programming Assignment 3\Part 2"
MATRIX:
1 0 0 0 0 12 0 0 0 0 0 0
0 1 0 0 0 0 0 0 0 0 0 0
0 0 1 0 0 0 0 0 0 0 0 0
0 0 0 1 0 0 0 0 7 0 0 0
0 0 0 0 1 0 0 0 0 0 0 0
0 0 0 0 0 12 0 0 0 0 0 0
0 0 0 0 0 0 1 0 0 0 0 0
0 0 0 0 0 0 0 5 24 6 2 0
0 0 0 0 0 0 0 0 0 16 24 0
0 0 0 0 0 0 0 16 5 7 16 0
0 0 0 0 0 0 0 7 12 7 12 0
0 0 0 0 0 0 0 0 0 0 1
The determinant of the 1.matrix is: 200352
MATRIX:
1 0 0 0 0 0 0 0 0 0 0 0
0 1 0 0 0 0 0 0 0 0 0 0
0 0 1 0 0 0 0 0 0 0 0 0
0 0 0 1 0 0 0 0 0 0 0 0
0 0 0 0 1 0 0 0 0 0 0 0
0 0 0 0 0 16 10 1 0 0 0 0
0 0 0 0 0 24 19 6 23 0 0
0 0 0 14 0 3 24 8 19 0 0 0
0 0 0 0 9 14 2 20 0 0 20
0 9 0 0 0 0 0 0 1 0 0
0 0 2 0 0 0 0 0 0 1 0
0 0 0 0 0 0 0 0 0 1
The determinant of the 2.matrix is: -24525
MATRIX:
1 0 0 0 20 0 0 0 0 0 0 0
0 1 0 0 0 0 0 0 0 0 0 0
0 0 1 0 0 0 0 0 8 12 0 0
0 0 0 1 0 0 0 0 0 0 0 0
0 0 0 0 1 0 0 0 0 0 0 0
0 0 0 0 0 16 10 1 0 0 0 0
0 0 23 0 0 0 18 0 16 12 0 0
0 0 0 0 0 5 10 9 24 0 0
0 0 0 0 0 12 23 8 20 0 0
0 0 0 0 0 0 0 0 0 1 0
0 0 0 0 0 0 0 0 0 0 1
The determinant of the 3.matrix is: -460962
Used Ram size is 6 MegaByte.
Process returned 0 (0x0) execution time : 0.201 s
Press any key to continue.
```

13x13

```
"C:\Users\alper\Desktop\EE\EE4-1\EE 441\Programming Assignment 3\Part 2"
MATRIX:
1 0 0 0 0 0 0 0 0 0 0 0 0
0 1 0 0 0 0 0 0 0 0 0 0 0
0 0 9 22 5 3 0 0 0 0 0 0 0
0 0 21 12 11 0 0 0 0 0 0 0 0
0 0 8 19 17 19 0 0 0 0 0 0 0
0 22 16 6 23 22 0 0 0 0 0 0 0
0 0 0 0 0 1 0 0 0 0 0 0 0
0 0 0 0 0 23 1 0 0 0 0 0 0
0 0 0 0 0 6 0 1 0 0 0 0 0
0 0 0 0 0 0 0 0 1 0 0 0 0
0 0 0 0 0 0 0 0 0 1 0 0 0
0 0 0 0 0 0 0 7 12 7 12 0 1
0 0 0 0 0 0 0 0 0 0 1
The determinant of the 1.matrix is: -14995
MATRIX:
1 0 0 0 0 0 0 0 0 0 0 0 0
0 1 0 0 0 0 0 0 0 5 0 0 0
0 0 22 16 11 5 0 0 0 0 0 0 13
0 0 13 7 5 9 0 0 0 0 0 0 0
0 0 14 1 16 21 0 0 0 0 0 0 0
0 0 13 13 13 5 0 0 0 0 0 0 0
0 0 0 0 0 1 0 0 0 0 0 0 0
0 0 0 0 0 0 1 0 0 11 0 0
0 0 0 0 0 0 0 1 0 0 0 0
0 0 0 0 0 0 0 0 1 0 0 0
0 0 0 0 0 0 0 0 0 1 0 0
0 0 0 0 0 0 0 0 0 0 1 0
The determinant of the 2.matrix is: -9626
MATRIX:
1 0 0 0 0 0 0 0 0 0 0 0 0
0 1 0 0 0 0 0 0 0 0 0 0 0
0 0 10 3 19 0 0 0 0 0 0 0 0
0 0 11 13 1 14 0 1 0 0 0 0 0
0 0 5 23 2 10 0 0 0 0 0 0 0
0 0 7 10 10 1 0 0 0 0 0 0 0
0 0 0 7 0 1 0 0 0 0 0 0 0
0 0 0 0 0 0 1 0 0 0 0 0
0 0 0 0 0 0 0 1 0 0 0 0
0 0 0 0 0 0 0 0 13 0 0 0
0 0 0 0 0 0 0 0 0 1 0 0
0 0 0 0 0 0 0 0 0 0 1 0
0 0 0 0 0 0 0 0 0 0 0 1
The determinant of the 3.matrix is: -422871
Used Ram size is 12 MegaByte.
Process returned 0 (0x0) execution time : 0.356 s
Press any key to continue.
```

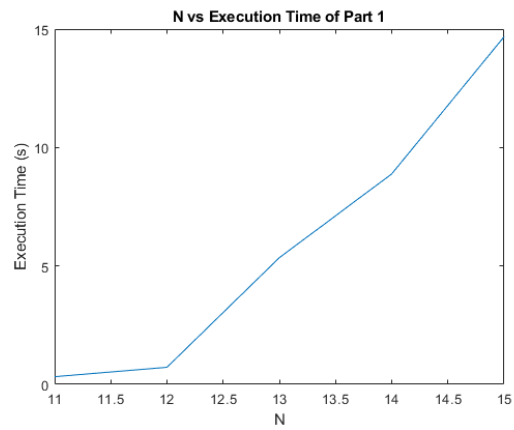
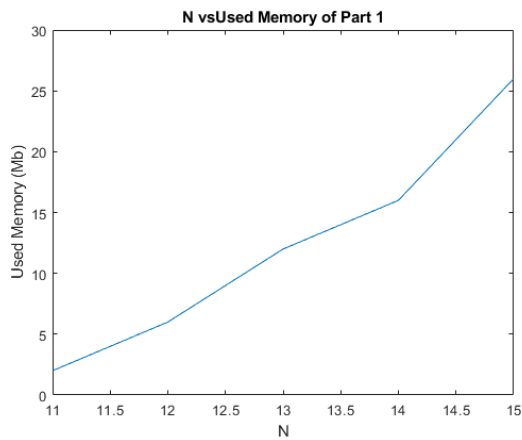
14x14

```
"C:\Users\alper\Desktop\EE\EE4-1\EE 441\Programming Assignment 3\Part 2"
MATRIX:
1 0 0 24 0 0 0 0 0 0 0 0 0 0
24 1 0 0 0 0 0 0 0 0 0 0 0 0
0 0 1 0 0 0 0 0 0 0 0 0 0 0
0 0 0 24 22 18 18 0 0 0 9 0 0
0 0 0 12 5 8 16 0 0 0 0 0 0 0
0 0 0 2 0 2 14 0 0 0 0 0 0 0
0 0 0 0 14 24 0 24 0 0 0 0 0 0
0 0 0 0 0 0 0 1 0 0 0 0 0 0
0 0 0 0 0 0 0 0 1 0 0 0 0 0
0 0 0 0 0 0 0 0 0 1 0 0 0 0
0 0 0 0 0 0 0 0 0 0 1 0 0 0
0 0 0 0 0 0 0 0 0 0 0 1 0 0
0 0 0 0 0 0 0 0 0 0 0 0 1 0
0 0 0 0 0 0 0 0 0 0 0 0 14 1
The determinant of the 1.matrix is: -8092
MATRIX:
1 0 0 0 0 0 0 0 0 0 0 0 0 0
0 1 0 0 0 0 0 0 0 0 0 0 0 0
0 0 1 0 0 0 0 0 0 0 0 0 0 0
0 0 0 1 0 0 0 0 0 0 0 0 0 0
0 0 0 0 1 0 0 0 0 0 0 0 0 0
0 0 0 0 0 1 0 0 0 0 0 0 0 0
0 0 0 0 0 0 1 0 0 0 0 0 0 0
0 0 0 0 0 0 0 1 0 0 0 0 0 0
0 0 0 0 0 0 0 0 19 0 0 0 0 14
0 0 0 0 0 0 0 0 0 1 19 8 0
0 0 0 0 0 0 0 0 0 2 21 16 3 0
0 0 0 0 0 0 0 0 0 18 1 9 18 0
0 0 0 0 0 0 0 0 14 19 2 0 0
0 0 0 0 0 0 0 0 0 0 0 1
The determinant of the 2.matrix is: 915002
MATRIX:
1 0 0 0 0 0 0 0 0 0 0 0 0 0
0 1 0 0 0 0 0 0 0 0 0 0 0 0
0 0 1 0 0 0 0 0 0 0 0 0 0 0
0 0 0 1 0 0 0 0 0 0 0 0 0 0
0 0 0 0 1 0 0 0 0 0 0 0 0 0
0 0 0 0 0 1 0 0 0 0 0 0 0 0
0 0 0 0 0 0 1 0 0 0 0 0 0 0
0 0 0 0 0 0 0 1 0 0 0 0 0 0
0 0 0 0 0 0 0 0 19 0 0 0 0 14
0 0 0 0 0 0 0 0 0 1 19 8 0
0 0 0 0 0 0 0 0 0 2 21 16 3 0
0 0 0 0 0 0 0 0 0 18 1 9 18 0
0 0 0 0 0 0 0 0 14 19 2 0 0
0 0 0 0 0 0 0 0 0 0 0 1
The determinant of the 3.matrix is: -63062
Used Ram size is 14 MegaByte.
Process returned 0 (0x0) execution time : 0.532 s
Press any key to continue.
```

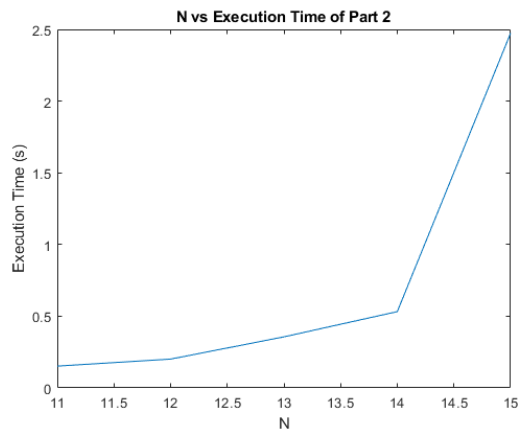
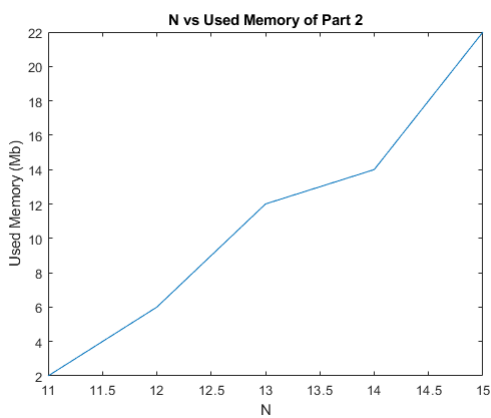
15x15

```
"C:\Users\alper\Desktop\EE\EE4-1\EE 441\Programming Assignment 3\Part 2"
MATRIX:
1 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 1 0 0 0 0 0 0 0 0 3 0 0 0 0
0 0 1 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 1 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 1 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 2 0 8 14 0 0 0 0 0 0
0 0 0 0 0 3 10 7 24 0 0 0 0 0 0
0 0 0 0 0 2 8 13 12 0 0 0 0 0 0
0 0 0 0 0 1 0 10 3 0 0 0 0 0 0
0 10 0 1 0 0 0 0 0 1 0 0 0 0 0
0 0 0 0 0 0 0 0 0 1 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 1 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 1 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 1 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 1 0
The determinant of the 1.matrix is: -192
MATRIX:
1 0 0 0 0 0 0 0 0 0 0 0 0 0 13
0 1 0 0 0 0 0 0 0 0 0 0 0 0 0
0 24 1 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 1 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 1 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 1 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 1 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 1 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 1 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 1 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 1 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 1 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 1 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 1 0
The determinant of the 2.matrix is: -31283
MATRIX:
9 7 21 5 0 0 0 0 0 0 0 0 0 0 0
3 12 9 0 0 0 0 0 0 0 0 0 0 0 0
4 22 7 8 0 0 0 0 0 0 0 0 0 0 0
7 13 13 8 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 1 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 1 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 1 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 1 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 1 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 1 7 0 0 0 0
0 0 0 0 0 0 0 0 0 1 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 1 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 1 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 1 0
The determinant of the 3.matrix is: -2763
Used Ram size is 22 MegaByte.
Process returned 0 (0x0) execution time : 2.474 s
Press any key to continue.
```

Part-3



In part 1, while ram usage increases linearly, we cannot say the same thing for execution time. After N=12, since reaching the nodes of the tree is getting harder, execution time becomes increasing logarithmically.



In part 2, while ram usage increases linearly, we cannot say the same thing for execution time in this part too. After N=14, since Hash Table is wholly filled, more members cannot be added, so the execution time increases logarithmically.