You will design information desk program for a neighborhood with hospitals and police stations.

- There are addition parts of buildings, user enters the number of structure and program creates random locations then adds it to the neighborhood.
- The searching parts finds the nearest structure to user's location which will be given by user. Also it gives the distance to user. (Each unit is 100 m)
  HINT: Use the Euclidean distance formula:

$$d_{ij} = \sqrt{(x_i - x_j)^2 + (y_i - y_j)^2}$$
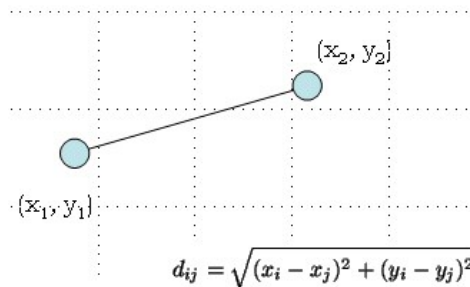
- The third searching finds the nearest hospital to user's location and then, nearest police station to that hospital.

You can use the .c file in the zipped file. The neighborhood and print function are already defined. You don't need to define them again, use them. Advanced level structure will get more points. So use the functions, switch, while, for, etc.

See the examples and use the exe file to understand the question. If you have a question about quiz, please contact me. Follow the instructions to send your quiz. I will count the higher quiz point of you. I suggest to do this quiz for practice of final exam.

EXAMPLES :

C:\Users\Selçuk\Dropbox\Okul\Site\cmp1401\20142015f\Quiz_2\Answer.exe

```
Welcome to Information Desk
1. Add hospital(s)
2. Add police station(s)
3. Find nearest hospital
4. Find nearest police
5. Find nearest hospital then police
6. Show the current map
0. Exit
Select an option :
```

C:\Users\Selçuk\Dropbox\Okul\Site\cmp1401\20142015f\Quiz_2\Answer.exe

```
Select an option : 6
```

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
0																				
1																				
2																				
3																				
4																				
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```
C:\Users\Selçuk\Dropbox\Okul\Site\cmp1401\20142015f\Quiz_2\Answer.exe

Welcome to Information Desk
1. Add hospital(s)
2. Add police station(s)
3. Find nearest hospital
4. Find nearest police
5. Find nearest hospital then police
6. Show the current map
0. Exit
Select an option : 2

How many police stations do you want to add :12
Addition completed
```

```
C:\Users\Selçuk\Dropbox\Okul\Site\cmp1401\20142015f\Quiz_2\Answer.exe

Welcome to Information Desk
1. Add hospital(s)
2. Add police station(s)
3. Find nearest hospital
4. Find nearest police
5. Find nearest hospital then police
6. Show the current map
0. Exit
Select an option : 1

How many hospitals do you want to add :7
Addition completed
```
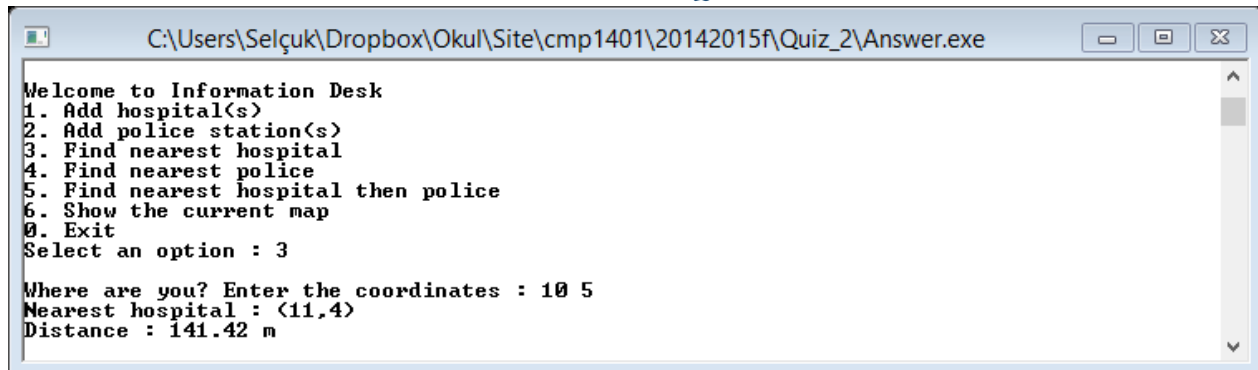
C:\Users\Selçuk\Dropbox\Okul\Site\cmp1401\20142015f\Quiz_2\Answer.exe

Select an option : 6

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
0																				
1												P	P							
2																		P		
3		P															P			
4																				
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12				H																
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14						P					H		P							
15																P				
16											P									
17																				
18																				
19																		H	P	

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```
C:\Users\Selçuk\Dropbox\Okul\Site\cmp1401\20142015f\Quiz_2\Answer.exe

Welcome to Information Desk
1. Add hospital(s)
2. Add police station(s)
3. Find nearest hospital
4. Find nearest police
5. Find nearest hospital then police
6. Show the current map
0. Exit
Select an option : 3

Where are you? Enter the coordinates : 10 5
Nearest hospital : (11,4)
Distance : 141.42 m
```
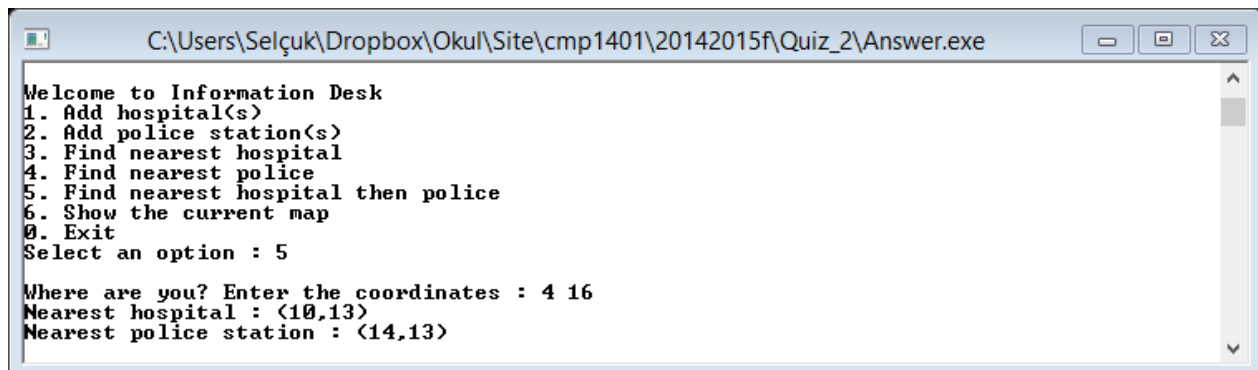
```
C:\Users\Selçuk\Dropbox\Okul\Site\cmp1401\20142015f\Quiz_2\Answer.exe

Welcome to Information Desk
1. Add hospital(s)
2. Add police station(s)
3. Find nearest hospital
4. Find nearest police
5. Find nearest hospital then police
6. Show the current map
0. Exit
Select an option : 4

Where are you? Enter the coordinates : 7 19
Nearest police station : (7,18)
Distance : 100.00 m
```
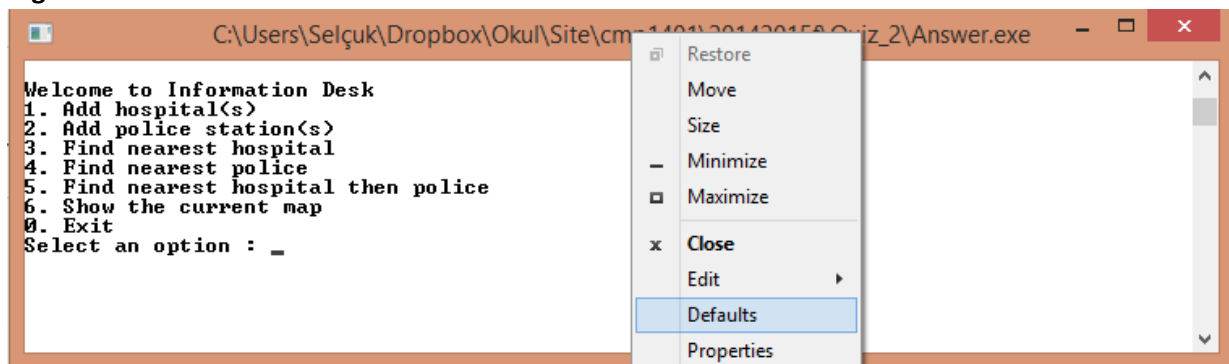
```
C:\Users\Selçuk\Dropbox\Okul\Site\cmp1401\20142015f\Quiz_2\Answer.exe

Welcome to Information Desk
1. Add hospital(s)
2. Add police station(s)
3. Find nearest hospital
4. Find nearest police
5. Find nearest hospital then police
6. Show the current map
0. Exit
Select an option : 5

Where are you? Enter the coordinates : 4 16
Nearest hospital : (10,13)
Nearest police station : (14,13)
```

**INSTRUCTION FOR EXE FILE:** To see the examples better do the next instructions

1- **Right click on the window and select Defaults**

```
C:\Users\Selçuk\Dropbox\Okul\Site\cmp1401\20142015f\Quiz_2\Answer.exe

Welcome to Information Desk          ⊡  Restore
1. Add hospital(s)
2. Add police station(s)                Move
3. Find nearest hospital
4. Find nearest police                  Size
5. Find nearest hospital then police
6. Show the current map              —  Minimize
0. Exit
Select an option : _                 ⊡  Maximize

                                     x  Close

                                        Edit            ▶
                                        Defaults
                                        Properties
```

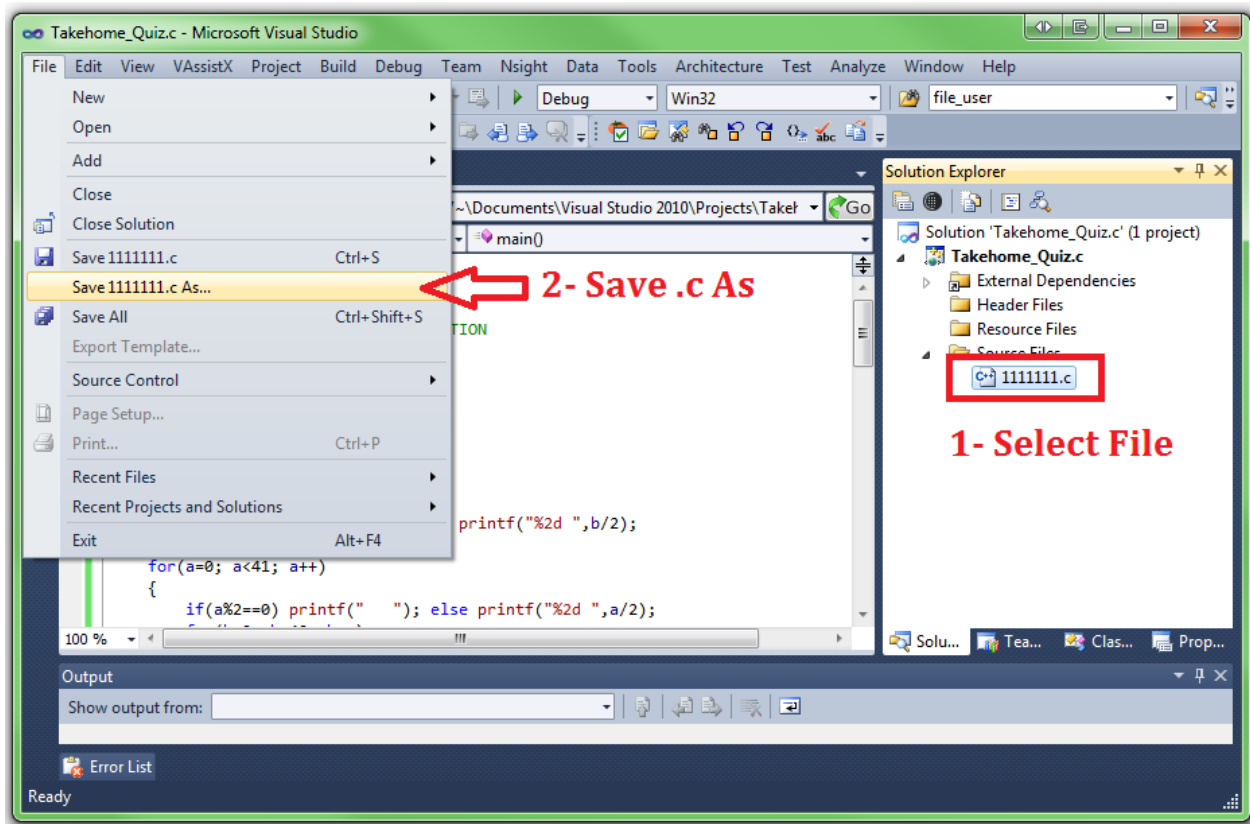**THE HOMEWORK IS DUE BY 11:59 pm THURSDAY, 15th JANUARY 2015**

2- Select the Raster fonts (font) and 8x12 (size). Change the sizes from Layout menu. Then OK.
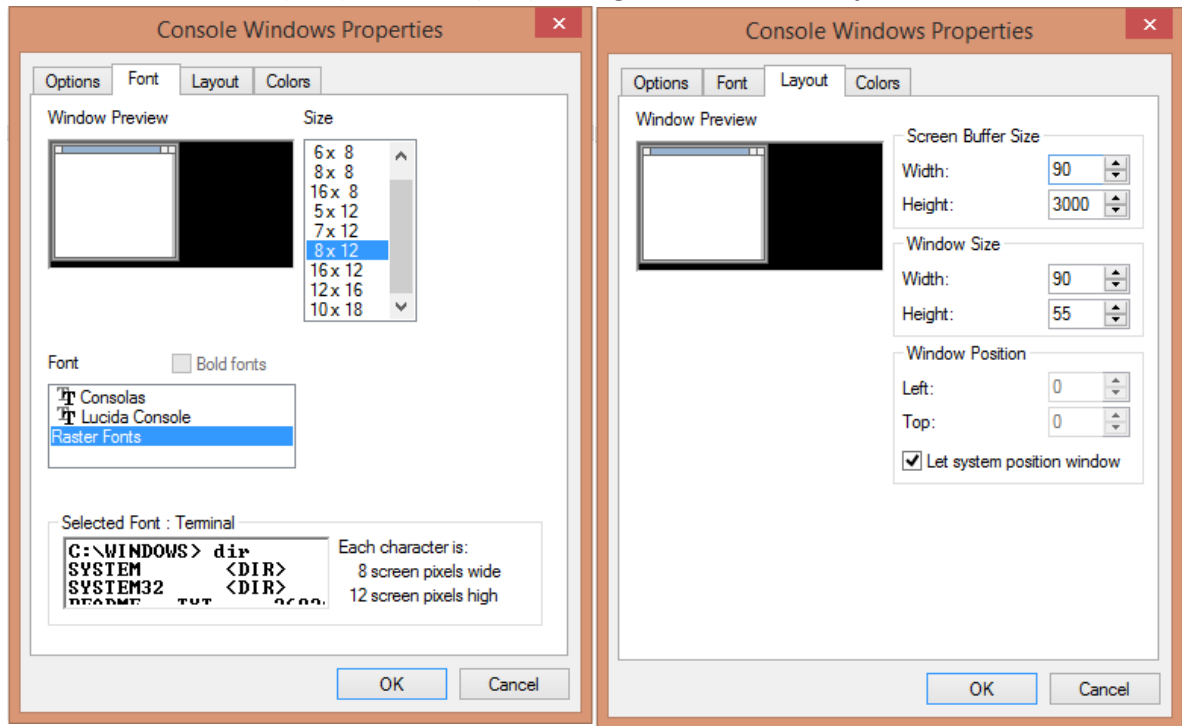
INSTRUCTION FOR UPLOADING :

1- Save your file to the desktop

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2- Change the file name as your student ID
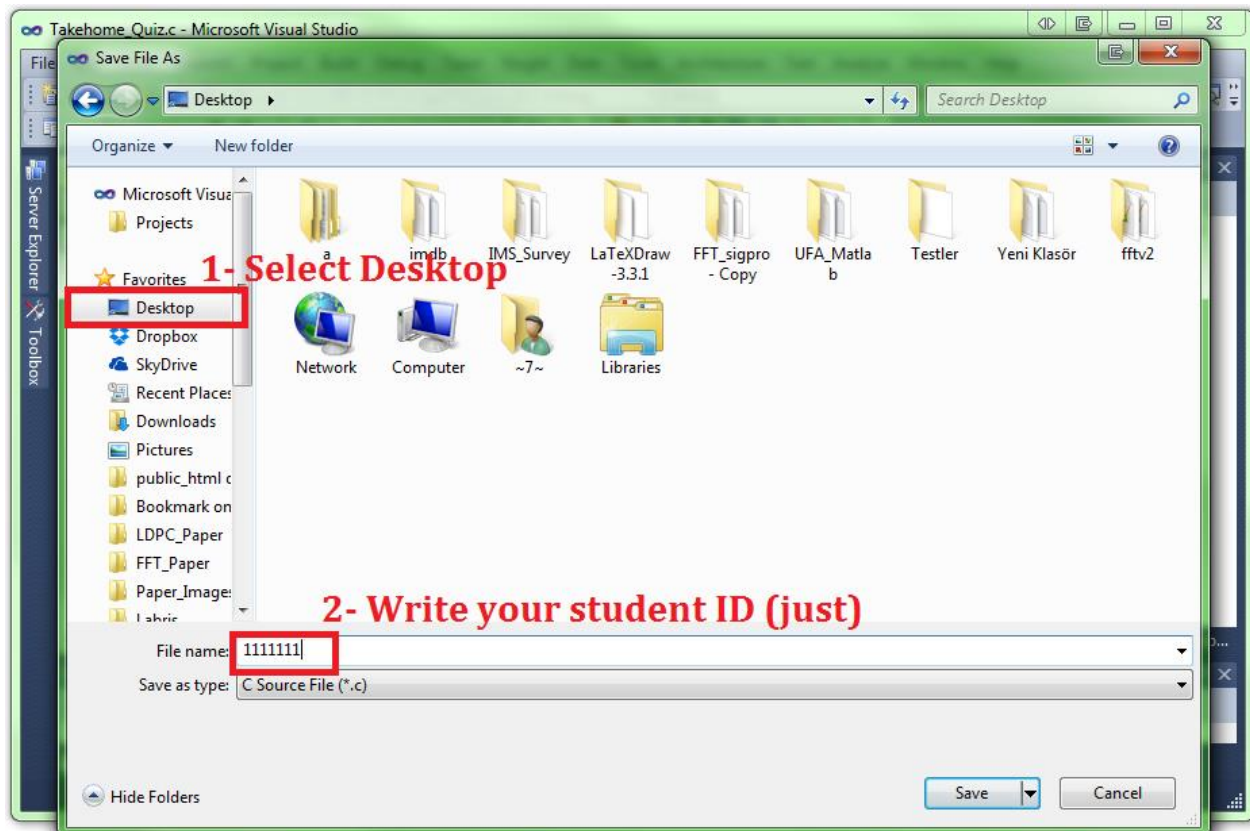
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3- Compress your file with WinRAR or similar program.
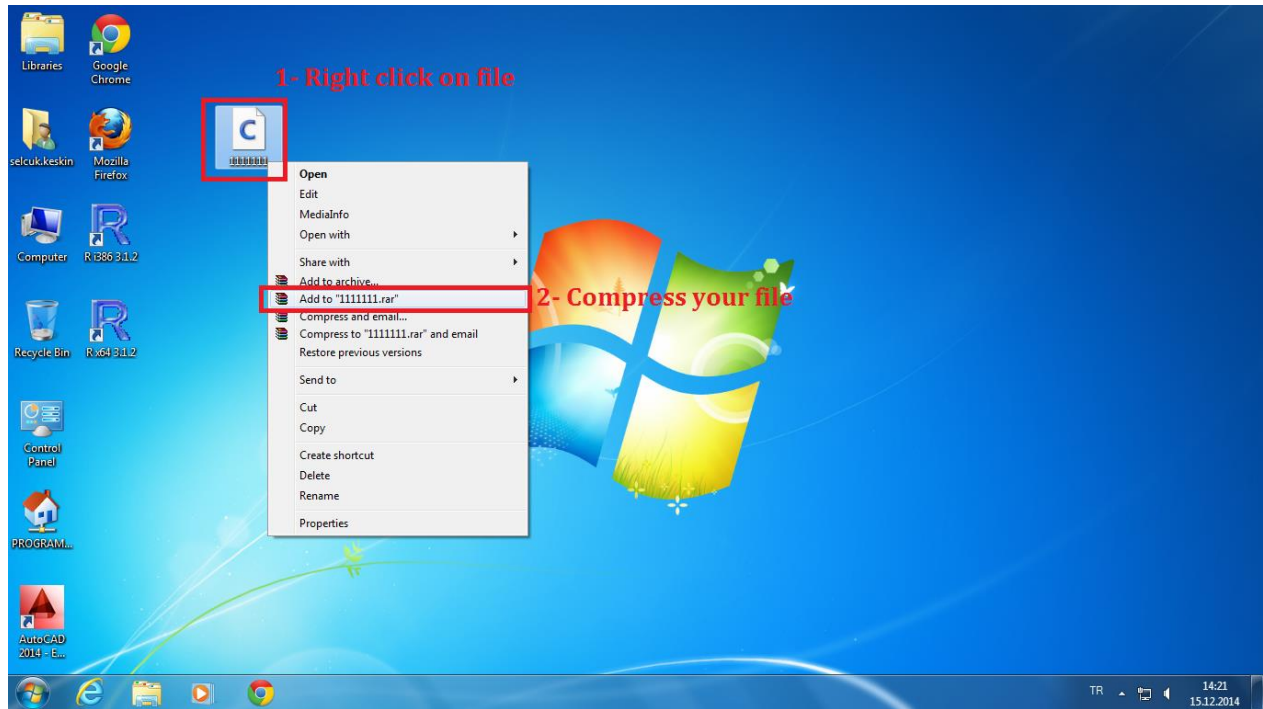
4- Enter the LMS of lecture. In the Homework part, you will see the homework and use the operation to send your zipped file.

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