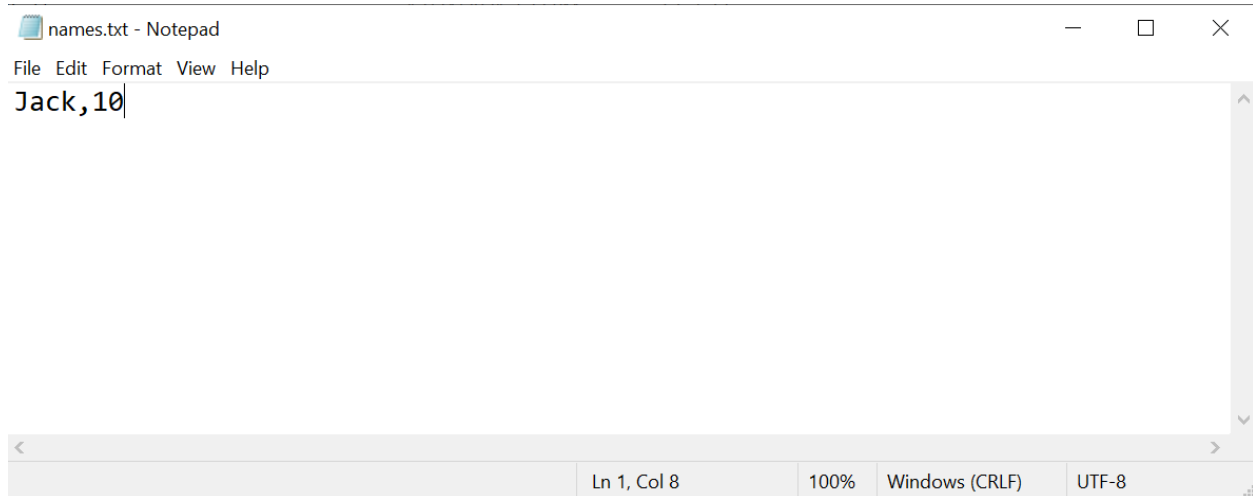# Department of Computer Science

University of Engineering and Technology, Lahore

_____

Write the C++ Functions of the following problems.

Problem 1:

Create a function which constructs a rectangular birthday cake, based on someone's name and age!
Name and age is given in a text file named names.txt in the following format.

```
names.txt - Notepad                                              —    □    ✕
File  Edit  Format  View  Help
Jack,10

                                                                              ∧




                                                                              ∨
<                                                                         >
                    Ln 1, Col 8        100%    Windows (CRLF)    UTF-8
```

Read the file to get the name and age of the person and make sure to surround the birthday message with
the character that fits the rule:

1. If the age is an even number, surround the message with "#".
2. If the age is an odd number, surround the message with "*".

Store the output in another file.

Other important rules:

1. The output message should be in the format:

    {age} HB {name}! {age}
2. Leave a space between the edge of the cake and the age numbers.
3. The number of characters (# or *) in the banner should be 15

Test Cases

Input	Output
getBirthdayCake("Jack", 10)	"###############" "# 10 HB Jack! 10 #"

	"###############"
getBirthdayCake("John", 19)	"***************" "* 19 HB John! 19 *" "***************"
getBirthdayCake("Mary", 20)	"###############" "# 20 HB Mary! 20 #" "###############"

Problem 2:

Create a function that takes a string str containing only letters from a to z from a file named **alphabets.txt** in lowercase and appends the missing letter(s) in alphabetical order a-z in the next line of the file.

A set of letters is given by

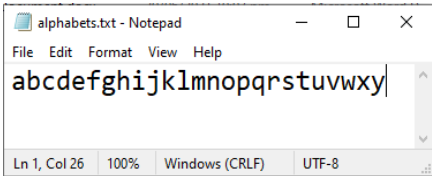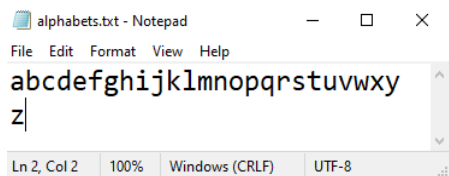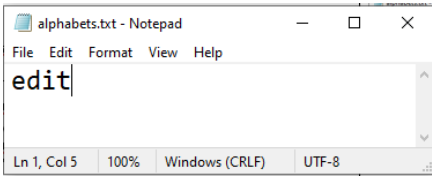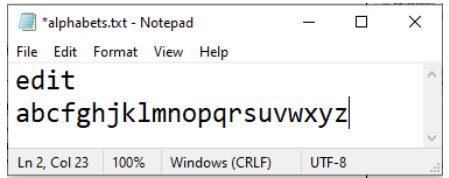**abcdefghijklmnopqrstuvwxyz**

Notes

If the string contains all letters from a-z, then an empty string will be appended.

Hint: You can convert int to char by writing

char(97) → a

Test Cases

Input	Output

Problem 3:

Suppose you are working for Secret Services. You have to write a function that takes a string and convert that into morseCode. The function outputs an encrypted letter string with Morse code.

      Note:

- There will be a space in the output string after each letter's morse code.

Alphabets	MorseCode
A	.-
B	-...
C	-.-.
D	-..
E	.
F	..-.
G	--.
H	....
I	..
J	.---
K	-.-
L	.-..
M	--
N	-.
O	---
P	.--.
Q	--.-
R	.-.
S	...
T	-

U	..-
V	...-
W	.--
X	-..-
Y	-.--
Z	--..
(Space)	-.-.-.-

Test Cases

Input	Output
morse("F Mueller")	"..-. ..... -- ..- . .-.. .-.. . .-."
morse("Barack Obama")	"-... .- .-. .- -.-. -.- ..... --- -... .- -- .-"
morse("JOHN F KENNEDY")	".--- --- .... -. ....-. ..... -.- . -. -. . -.. -.--"

Problem 4:

John has made a mistake and overwrote a text file with some weird data, thankfully he had no back-up and he's too lazy to fix it so now you guys can solve it for him!
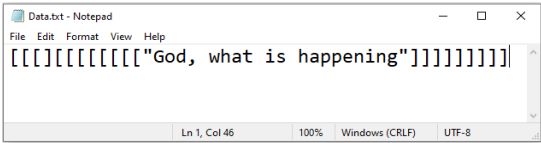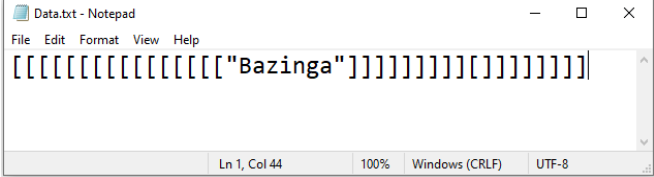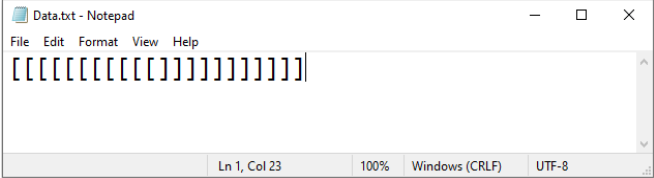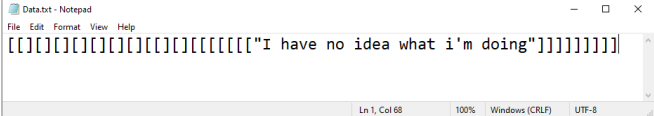Get the text strings out of those files.
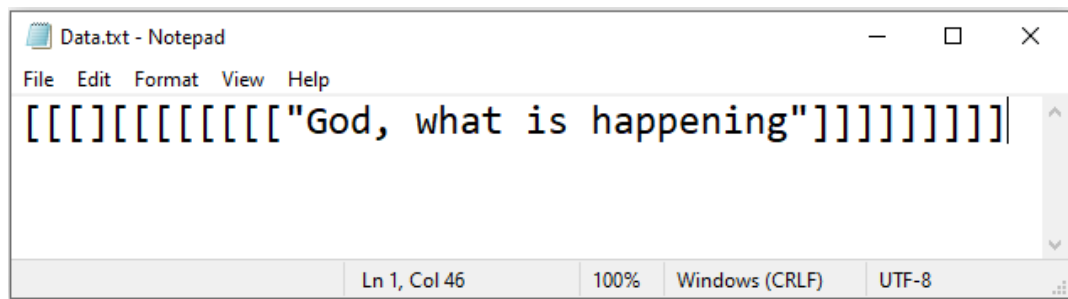
Note:

- if there *is no string*, you should return a pre-defined string (see Test Case 3).

Your task is to make a function that reads the **data.txt** file and then returns only the text string from the data.
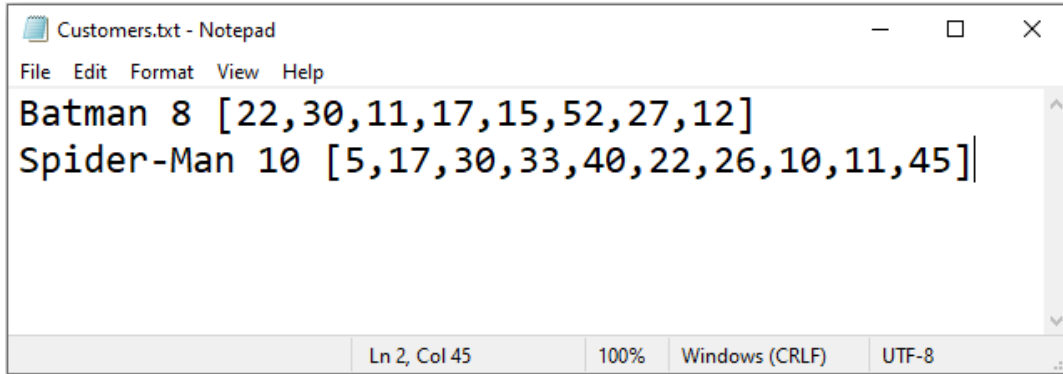
Test Cases

Input	Output
Data.txt - Notepad File Edit Format View Help `[[[][[[[[[[["God, what is happening"]]]]]]]]]` Ln 1, Col 46 100% Windows (CRLF) UTF-8	"God, what is happening"
Data.txt - Notepad File Edit Format View Help `[[[[[[[[[[[[[[["Bazinga"]]]]]]]]]][]]]]]]]]` Ln 1, Col 44 100% Windows (CRLF) UTF-8	"Bazinga"
Data.txt - Notepad File Edit Format View Help `[[[[[[[[[[[])]]]]]]]]]]]` Ln 1, Col 23 100% Windows (CRLF) UTF-8	"What... why did you make this?"
Data.txt - Notepad File Edit Format View Help `[[][][][][][][[[][[[[[["I have no idea what i'm doing"]]]]]]]]]` Ln 1, Col 68 100% Windows (CRLF) UTF-8	"I have no idea what i'm doing"

Problem 5:

KamyabLife is launching a network of autonomous pizza delivery drones and wants you to create a flexible rewards system (Pizza Points) that can be tweaked in the future. The rules are simple:
if a customer has made at least N orders of at least Y price, they get a FREE pizza!
The information of the customers is stored in a file **Customers.txt** in the following format. First the name of the customer is given then after the space the number of orders are given then after the space within the brackets all the orders prices are given.

```
Customers.txt - Notepad                    —    □    ×

File  Edit  Format  View  Help

Batman 8 [22,30,11,17,15,52,27,12]
Spider-Man 10 [5,17,30,33,40,22,26,10,11,45]


                    Ln 2, Col 45     100%   Windows (CRLF)    UTF-8
```

Your task is to create a function that takes a minimum number of orders and a minimum order price then cout the names of the customers that are eligible for a free pizza.

Test Cases

Input	Output
pizza_points(5, 20)	"Spider-Man"
pizza_points(3, 10)	"Batman" "Spider-Man"
pizza_points(5, 100)	""