CSE102 – Computer Programming
Homework #4
Functions and Selection
Due Date: 12/04/2023 23:59

Hand in: A student with number 20180000001 should hand in a zip file named 20180000001.zip for this homework.

Part 1: [60 pts] You have been asked to provide a single C file containing a main function as well as several other functions. This homework will give you hands-on experience with variables, input/output operations, selections, loops, and functions.

This program will create a menu and calculate the prices for the dishes that users choose. It will also calculate student discounts and VAT rates.

- Create a sample menu and price. Your menu should have at least 10 options and values should include pennies.
- Write this menu you created in a txt file. Then read it from this txt file and output it. You must perform this operation without a String.

The menu is as follows:

Product	Price (TL)
Kebap	75.99
Lahmacun	21.50
Pide	40.00
Döner	55.60
Kola	15.00
Su	5.00
Künefe	60.00
Sütlaç	32.50

Program Stages

- The user will be shown the menu and asked to choose a dish.

- The user will enter the number and quantity of the selected dish.

- The program will calculate the prices of selected meals and add VAT. (VAT = 18% to be calculated)

- If the user is a student, the program will offer a 12.5% discount on the price.

- If the total price is 150 TL or more, the program will make an additional 10% discount on the price.

- A txt file will be created and the menus you receive and the amount paid will be saved in this txt file. The total price paid should be included in this txt file.

- Output the receipt image of the user.

- The program will be written using functions that perform the above operations.

- When '0' is written, the menu will be exited. The food order is complete.

- The program should warn the user about the values entered, except for the answers that must be given. (Are you a student? (Y/N) 1 --> Please enter a valid answer!)

- You can get the output in a specific date and time format by using the 'strftime()' function in the C programming language. You need to add the 'time.h' library before you do the operation.

Example Output:

Yemek Listesi:

1. Kebap

2. Lahmacun

3. Pide

4. Döner

5. Kola

6. Su

7. Künefe

8. Sütlaç

Please choose a product (1-8): 2

How many servings do you want? 2

Please choose a product (1-8): 5

How many servings do you want? 1

Please choose a product (1-8): 8

How many servings do you want? 0

Are you student? (Y/N): Y

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     Product   Price (TL)

     2* Lahmacun   43.00

     Kola   15.00

     Sütlaç   32.50

     Total: 90.50

     Student discount: -11,31

     Price: 79,19

     Price + VAT: 93,44

- The customer will be able to request food until he presses 0. No distinction will be made as a dessert, beverage, or main course.
- Apply discounts directly to the total price. Do not discount on the discount (student discount --> 150 TL discount)
- Calculate the VAT rate on the price payable.
- Prices will not be on the output screen, only in the txt file and on the receipt.

Part 2: [40 pts] You are asked to write a rock paper scissors game. Ask the user to choose rock, paper or scissors. Your computer should make a random selection each time. Compare both answers and indicate whether they won, lost or tied as a result. Also give the user an option to ask if they want to play the Game again. Perform these operations in a loop.

Example Output:

    Please make a choice!

    1: Stone, 2: Paper, 3: Scissors

    1

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You chose Stone. I chose Stone. It's a tie!

Do you want to play again? (Y/N): Y

Please make a choice!

1: Stone, 2: Paper, 3: Scissors

3

You chose Scissors. I chose Paper. You won!

Do you want to play again? (Y/N): N
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Note:Make sure to include appropriate comments and variable names in your code to make it easy to understand.

**Attach the photos of the outputs of the code to your file.

**Do not forget to prepare a makefile (-50 points)

** Do not use Arrays in questions. (-50 points)

** To avoid receiving a lower grade, it is important to use if-else and switch-case appropriately according to their respective needs, rather than using them interchangeably.

General Rules:

1. We do not give you any function prototypes. We expect that you are experienced enough to understand when to use methods and name them. These will also be graded.
2. The program must be developed on given version of OS and must be compiled with GCC compiler, any problem which rises due to using another OS or compiler won't be tolerated.
3. Note that if any part of your program is not working as expected, then you can get zero from the related part, even if it is working partially.
4. Zip your homework files before uploading them to MS Teams. The zip file must contain the C file with your solution and screenshots of the valid outputs of the program.
5. Put all the output screens in a pdf file by running your code.
6. You can ask any question about the homework by sending an email to zbilici@gtu.edu.tr or by using the homework channel on the MS Teams page of the course.