

BRAC UNIVERSITY

Department of Electrical and Electronic Engineering
CSE162/EEE103IL/ECE103IL: Computer Programming Laboratory
Final Project, Spring 2022

Submission Deadline: 25.04.2022 05:00 PM

Full Marks: (10+15 = 25)

General instructions:

- You will need to format your paper ready for submission. To make this easier, a Word template is available here ([Click Here](#)), ready for you to download and apply to your document.
- The project report must be submitted in PDF format
- Provide detailed explanations in your code as comments. Codes with no explanations will be treated as copy and marks will be deducted.
- Copy your codes with proper indentation and paste them into your report. Provide clear screenshots of your outputs.
- The deadline is rigid and will not be extended.
- 10% of the total marks will be on the clarity of your report.
- Submission link: <https://forms.gle/BX89xHHtRERNHNL59>. Any submission through email or any other medium will not be accepted.
- Make a folder on your pc- name format "Student ID" and save all your codes there. Code file name format – Problem 1, Problem 2. Upload it to your google drive. Share the link. Make sure you select "Anyone with the link".

Problem 1. Suppose you have to design software for the Oscar Jury members where they can rate the nominated movies on a scale of 1-10. Here is the movie list

- Belfast
- CODA
- Don't Look Up
- Drive My Car
- Dune
- King Richard
- Licorice Pizza
- Nightmare Alley
- The Power of the Dog

The program will ask the jury to rate movies one by one. After completing the rating the output window will show the movie name and its rating in

- a. ascending order of rating if your ID is even.
- b. descending order of rating if your ID is odd.

Note: Use of Pointer is mandatory.

Problem 2. An electricity board charges the following rates mentioned in the table for the use of electricity. All users are charged Taka 50 as a meter charge for every month. If any user wants to change/replace his meter, he will be charged taka 2000. The monthly bill will be generated based on

- Customer Category
- Consumed Units
- Phase
- **For Category 3 and 5 along with other parameters, you need to also consider flat rate, peak time, and off-peak time. Take input from the user, how many units were consumed during flat rate, peak, or off-peak time.**
- Meter Charge

Write a program to read the name of the user, Customer Category, Phase, number of units consumed and print out the monthly bill.

Note that

- Phase, flat rate, peak time and off-peak time will be appeared based on the customer category.
- The monthly bill will be calculated following the number of Days in a month

Tariff Rate

| SL | Customer Category and Slab | New Tariff Per Unit Rate (Tk.) Effective from Bill month September, 2015 | Service Charge (Tk./Month) |
|----|--|---|----------------------------------|
| 1 | Category A: Residential | | |
| | Life Line: 1-50 Units | | 1-Phase: 10.00 3-Phase: 30.00 |
| | a | First Step: From 00 to 75 units | |
| | b | Second Step: From 76 to 200 units | |
| | c | Third Step: From 201 to 300 units | |
| | d | Fourth Step: From 301 to 400 units | |
| | e | Fifth Step: From 401 to 600 units | |
| | f | Sixth Step: From 601 to above | |
| 2 | Category B: Agricultural pumping | 3.82 | 30.00 |
| 3 | Category C: Small Industries | | |
| | a | Flat Rate | 70.00 |
| | b | Off-Peak Time | |
| | c | Peak Time | |
| 4 | Category D: Non-Residential (Light & Power) | 5.22 | 1-Phase: 10.00 3-Phase: 30.00 |
| 5 | Category E: Commercial & Office | | |
| | a | Flat Rate | 1-Phase: 10.00 3-Phase: 30.00 |
| | b | Off-Peak Time | |
| | c | Peak Time | |

The output shall look like this:

~~~~~Check Your Electricity Bill~~~~~

Enter the name of the customer:

ABCD

Customer Number:

XXXXX

1. Monthly Bill
2. Meter Replacement
3. Main Menu
4. Exit

1

1. Residential
2. Agricultural Pumping
3. Small Industries
4. Non-Residential
5. Commercial and Office

1

|   |                                    |
|---|------------------------------------|
| a | First Step: From 00 to 75 units    |
| b | Second Step: From 76 to 200 units  |
| c | Third Step: From 201 to 300 units  |
| d | Fourth Step: From 301 to 400 units |
| e | Fifth Step: From 401 to 600 units  |
| f | Sixth Step: From 601 to above      |

Units Consumed: b

- a. 1 Phase
- b. 3 Phase

a

MS. ABCD

XXXX

Monthly Electricity Bill is ----- Taka

Thank you

Please Enter your choice:

1. Monthly Bill

2. Meter Replacement
3. Main Menu
4. Exit

4

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