Faculty of Engineering, University of Jaffna
Department of Computer Engineering
EC2010 – Computer Programming
Lab 03

Date : 29 oct 2020 **Duration : 3 hours**

Instructions

- Any plagiarized work will be given 0 marks.
- Submit your lab work as a zip file named ***Lab03_20YYEXXX*** *(20YYEXXX – Your Registration Number)* **on/before the given deadline** via teams.
- The zip file should contain all ".cpp" code files and your report
- The report should contain all codes in text format and outputs as screenshots.
- The cpp file **MUST** be named 'Q1', 'Q2', 'Q3', 'Q4' and 'Q5' appropriately. Do not modify these names in any manner. **Do not** even annex your index number to the file name. **Do not** change case.

Note: ***Read the questions carefully and write the program according to the question. The Examples are given only for your understanding. When you use constant, define it as constant.***

Q1) Following table shows the membership type, code and the corresponding membership fee for a month of a health club.

Membership type	code	Monthly fees (Rs.)
Standard Adult Membership	1	500
Child Membership	2	300
Senior Citizen Membership	3	350

Write a program that displays a menu allowing the user to select the membership type by enter the corresponding code. After the user has made a selection, the program will then display the **total membership fees** for next 6 months and display an error message when user enter the incorrect code. Use **switch statement** for your program.

Q2) Write a program that utilizes looping and the tab escape sequence **\t** to print the following table of values. Use **while loop** for your program.

N	2^N	3^N	5^N
1	2	3	5
2	4	9	25
3	8	27	125
4	16	81	625
5	32	243	3125

Q3) Write a program that displays a table of speeds in kilometers per hour with their values converted to miles per hour. The table should display the speeds from 60 kilometers per hour through 130 kilometers per hour, in increments of 5 kilometers per hour. (In other words, it should display 60 kph, 65 kph, 70 kph and so forth, up through 130 kph. Use **while loop** for your program)

***MPH = KPH* * 0.6214**

```
KPH                 MPH
-----------------------
60                  37.284
65                  40.391
70                  43.498
75                  46.605
80                  49.712
```

Q4) Write a program that calculates how much a person earns in a month if the salary is one rupee the first day, two rupees the second day, four rupees the third day, and so on with the daily pay doubling each day the employee works. The program should ask the user for **the number of days** the employee worked during the month and should display a table showing how much the salary was for each day worked, as well as the **total pay** earned for the month. Use **while loop** for your program.

```
How many day the employee worked : 10

        Day             Salary
        ------------------------
        1               1
        2               2
        3               4
        4               8
        5               16
        6               32
        7               64
        8               128
        9               256
        10              512

the total salary is 1023 Rs.
```

Q5) Given a number, write a program using while loop to reverse the digits of the number. For example, the number 12345 should be written as 54321

Hint: *Use a* ***do-while statement*** *and continuously strip off and display the number's unit digit. If the variable 'num' initially contains the number entered, the unit digit is obtained as (num % 10)). After a unit digit is displayed, dividing the number by 10 sets up the number for the next iteration. Therefore, (8735 % 10) is 5 and (8735 / 10) is 873. The do-while statement should continue as long as the remaining number is not 0.*