

**UNIVERSITY OF RUHUNA  
FACULTY OF TECHNOLOGY  
DEPARTMENT OF ICT**

**ICT1142 – Programming Practicum  
Mid Examination (Practical)**

Time Allowed – **01 hour**

May 2023

**IMPORTANT INSTRUCTIONS**

- This paper has **two** questions on 03 pages.
- Answer **all** the questions.
- This examination accounts for 15% of the module assessment.
- Create a directory with your index number (TGXXX). Save your all programs inside this directory.
- Your answers should be saved as **Q1.c** and **Q2.c**
- At end of the examination, upload your directory as **a zip file** to the given submission link on LMS.

**Question 01**

Write a C program to print the following pattern using a **for loop**. Save your program as **Q1.c** under the directory that you created.

```
*
**
***
****
*****
****
***
**
*
```

## Question 02

Write a C program to calculate the total bill of a customer for the service taken from an Araliya holiday resort. Customers can reserve rooms and order meals at this resort. Implement the program by considering following details.

- The three types of available rooms in the resort and their **prices per day** are given below.

Room type	Room with meals	Room only
Single	Rs. 8000	Rs. 5000
Double	Rs. 15000	Rs. 10000
Triple	Rs. 20000	Rs. 15000

- All the customers will get a discount for their total bill according to the following criteria based on both; the number of rooms reserved and the total bill amount.

Number of rooms	Total bill in Rs	Discount
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> 1 (more than 1)	and >=30000	15% discount from the total bill

- At the beginning, the program should **repeatedly** display a **screen with options** to the customer as given in the following screenshot.

```
Welcome to Araliya Holiday Resort Room Reservation System

Select the room type:
- Single
- Double
- Triple
Enter Choice: S
Do you want to order meals? y? n? : y
Enter number of days: 2

Do you want to reserve another room? y? n? y

Select the room type:
- Single
- Double
- Triple
Enter Choice: D
Do you want to order meals? y? n? : n
Enter number of days: 2

Do you want to reserve another room? y? n? n

-----
Total Bill: 36000.00
Discount: 5400.00
Payable Amount: 30600.00
```

According to the screenshot, the order of the user inputs are;

- i. **Get room type** (S/s, D/d, T/t, error message for other letters) (*Use a **switch case** for selection*)
- ii. **Get the choice of with meal or without meal** (y, n, error message for other letters) (*use **if-else if** for selection*)
- iii. **Get number of days** (only integers)
- iv. **Get the choice of continuing the room reservation screen** (y – continue to the option menu to reserve another room, n – stop execution of the menu and display calculated values for the current reservations)

Finally, the program should output the **total bill**, **discount amount** and the **payable amount** according to the preview given above screenshot.

Consider the following information as well.

- Room type should be entered using the **first letter of the type**.  
Ex: if user wants to reserve a Double room → user input is ‘d’ and must accept **both upper case and lower** case letters.
- Give suitable **error messages** when user entered incorrect **room types** and **meal option**.
- Number of days should be entered as full days (**integers**).
- Use a **do-while loop** to repeat the reservation screen.

Save your program as **Q2.c** under the directory that you created.

----- End of Paper -----