Lab 4.1

> Write a program to perform the following tasks. The user should be able to enter the necessary inputs.

Function 1 **(20 pts)**:

- Name of the function: print_square
- Return type: void
- Input parameters: 1 integer (side)
- This function prints a square of asterisks (*) with the side length provided by the user. The pattern is printed as follows:

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

Use **for** loop to print the pattern

Function 2 **(20 pts)**:

- Name of the function: print_right_triangle
- Return type: void
- Input parameters: 1 integer (height)
- This function prints a right-angled triangle of asterisks (*) with the height provided by the user. The pattern is printed as follows:

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

Use **for** loop to print the pattern

Function 3 **(20 pts)**:

- Name of the function: print_number_pattern
- Return type: void
- Input parameters: 1 integer (rows)
- This function prints a pattern of numbers. The number of rows is provided by the user. The pattern is printed as follows:

```
1
22
```

```
333
4444
55555
```

Use **for** loop to print the pattern

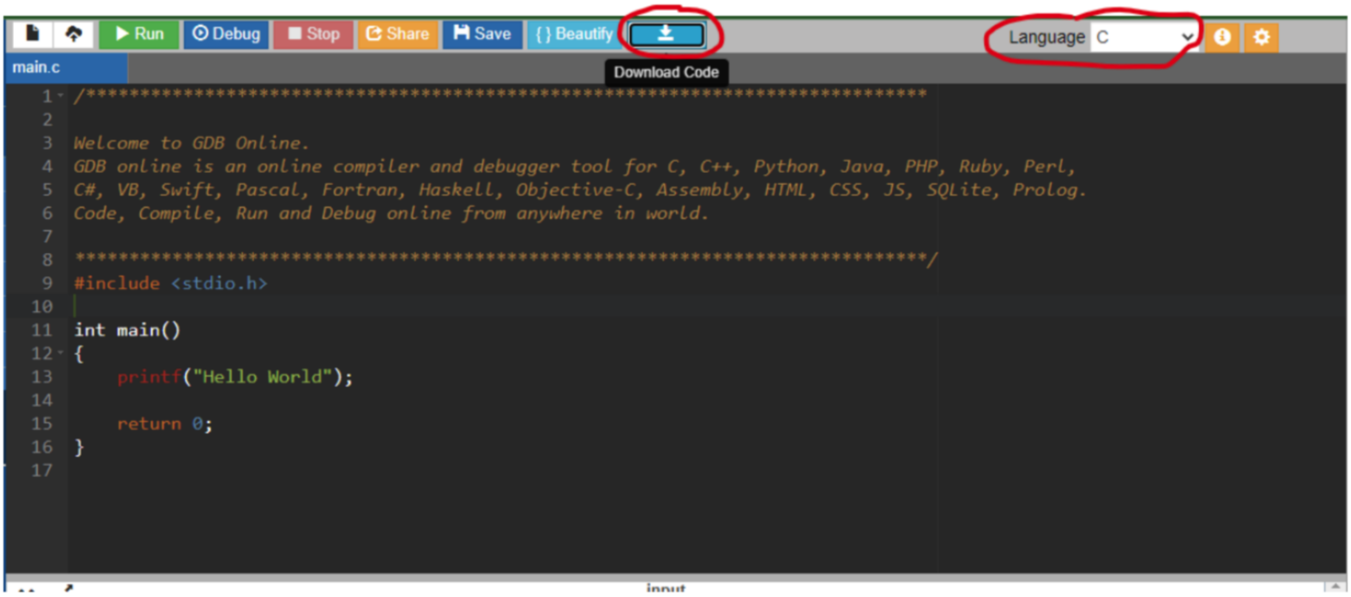
Main Function **(40 pts)**:

- Name of the function: main
- Return type: int
- Input parameters: none
    - Declare a variable to store the type of the pattern (char).
    - Ask the user to enter the type of the pattern. The user can enter 's' for square, 't' for right-angled triangle and 'n' for number pattern.
    - **If the user enters a character other than 's', 't' or 'n', print "Invalid pattern type" and ask the user to enter the type of the pattern again. Repeat this process until the user enters a valid pattern type.**
    - If the user enters 's', ask the user to enter the side length of the square. Then, call the print_square function to print the square.
    - If the user enters 't', ask the user to enter the height of the right-angled triangle. Then, call the print_right_triangle function to print the right-angled triangle.
    - If the user enters 'n', ask the user to enter the number of rows in the number pattern. Then, call the print_number_pattern function to print the number pattern.

Use **while** loop to ask the user to enter the number of rows and the type of the pattern.

Restrictions

- If you are not sure something is free to use or not please ask your assistant
- You have to do your job by the functions given to you. If you complete the labwork without using functions, your work will not be graded.
- Mobile phone and internet usage are not allowed.
- You can only access yulearn and online c-compiler https://www.onlinegdb.com/
- Do not forget to select language if you use onlinegdb. When you finish your work, you can download your code by using download code button on top of the window.



```
/******************************************************************************

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Code, Compile, Run and Debug online from anywhere in world.

*******************************************************************************/
#include <stdio.h>

int main()
{
    printf("Hello World");

    return 0;
}
```

Submission

- Submit your C file with the format "name_surname.c" (use your name and surname)
- Do not submit a word document, text file or executable (a.out)