

LABWORK 3.1

Write a program that calculates the area of different shapes. The program should be able to calculate the area of a circle, rectangle and triangle. The user should be presented with options to select the shape. Based on which shape is chosen by the user, the program should ask for the appropriate input and print the resulting area on the screen.

Function 1 (15 pts):

- Name of the function: `calculate_area_of_circle`
- Return type: `float`
- Input parameters: 1 number (`int`) (radius)
- This function calculates and returns the area of a circle. The area of a circle is calculated as π multiplied by the radius squared.
- **Do not** print anything in this function

Function 2 (15 pts):

- Name of the function: `calculate_area_of_rectangle`
- Return type: `float`
- Input parameters: 2 numbers (`int`) (width, height)
- This function calculates and returns the area of a rectangle. The area of a rectangle is calculated as the width multiplied by the height.
- **Do not** print anything in this function

Function 3 (15 pts):

- Name of the function: `calculate_area_of_triangle`
- Return type: `float`
- Input parameters: 2 numbers (`int`) (base, height)
- This function calculates and returns the area of a triangle. The area of a triangle is calculated as half of the base multiplied by the height.
- **Do not** print anything in this function

Main Function (55 pts):

- Name of the function: `main`
- Return type: `int`

- Input parameters: none
 - Declare a variable to store the type of the shape (char).
 - Ask the user to enter the type of the shape. The user can enter 'c' for circle, 'r' for rectangle and 't' for triangle.
 - **If the user enters a character other than 'c', 'r' or 't', print "Invalid shape type" and ask the user to enter the type of the shape again. Repeat this process until the user enters a valid shape type.**
 - If the user enters 'c', ask the user to enter the radius of the circle. Then, ask the user to enter the unit of the radius. Then, call the calculate_area_of_circle function to calculate the area of the circle. Finally, print the area of the circle in the following format: "The area of the circle is \$area \$unit^2".
 - If the user enters 'r', ask the user to enter the width and height of the rectangle. Then, ask the user to enter the unit of the width and height. Then, call the calculate_area_of_rectangle function to calculate the area of the rectangle. Finally, print the area of the rectangle in the following format: "The area of the rectangle is \$area \$unit^2".
 - If the user enters 't', ask the user to enter the base and height of the triangle. Then, ask the user to enter the unit of the base and height. Then, call the calculate_area_of_triangle function to calculate the area of the triangle. Finally, print the area of the triangle in the following format: "The area of the triangle is \$area \$unit^2".

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.

```

1- /*****
2
3 Welcome to GDB Online.
4 GDB online is an online compiler and debugger tool for C, C++, Python, Java, PHP, Ruby, Perl,
5 C#, VB, Swift, Pascal, Fortran, Haskell, Objective-C, Assembly, HTML, CSS, JS, SQLite, Prolog.
6 Code, Compile, Run and Debug online from anywhere in world.
7
8 *****/
9 #include <stdio.h>
10
11 int main()
12 {
13     printf("Hello World");
14
15     return 0;
16 }
17
  
```

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)