



CSC 122 Introduction to Computer Programming

Assignment-4

Assignment is Due on Sunday 24-01-2021 11:59pm

Late submission not allowed , assignment submitted after 11:59 graded zero

Assignment Instructions:

1. Review the functions lecture slides and the online study material in the link <https://wakelet.com/i/invite?code=c341466>
2. Read each question carefully, make sure you understand what is required from you.
3. Make sure you read the programs instructions carefully as your program logic should cover all the required rules
4. Make sure you test your programs and that they work correctly without any errors before submission.
5. Store the answers for each question in one or two files, name them using the following convention **Your1stName_YourFamilyName_HW4_Q#**, example: **Ali_Ahmed_HW4_Q1**, save python programs with .py extension, other type of files save them as .pdf.
6. Upload your files and submit them to assignment-4 link in **class MyGUST site**

1. Function Name: **isDivisible**

Problem Description:

Write a function **isDivisible** that takes two integers, **m** and **n**. The method **returns True** if **m** is divisible by **n**, and **returns False** otherwise.

2. Function Name: **coneSurfaceArea**

Problem Description:

Write a user-interactive function to calculate the volume of a cone.

- a. Get the **slant height** and **radius** of the circle at the base of the cone, and the **unit of measurement** of the cone from the user; make sure to use a descriptive message so the user knows what to enter.
- b. Calculate the surface area of the cone using the following formula:
SurfaceArea = (pi * radius²)+ (pi* radius * slantHeight)
- c. Print the calculated surface area with **3 digits after the decimal place**; be sure to add a label to display value so the user knows what the value means with the units entered by the user (e.g. display “Surface Area of the cone is 35.322 units squared” instead of just 35.322, where “units” would be replaced with whatever unit of measurement the user entered).

3. Function Name: **calcDistance**

Parameters:

- a. **x1** – a number representing the x coordinate of the first point as an integer
- b. **y1**– a number representing the y coordinate of the first point as an integer
- c. **x2** – a number representing the x coordinate of the second point as an integer
- d. **y2** – a number representing the y coordinate of the second point as an integer

Return Value:

A floating point number representing the distance between the two points.

Problem Description:

Write a function **calcDistance** that will calculate and return the distance between the two given points as a floating point number. Use the distance formula given below:

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

Hints: You will need to take the square root. To do this, you must import the math module using “**import math**” before you use the square root function, which is named **sqrt**.

4. Function Name: **reportCard**

Problem Description:

Write a function report card where the user can enter **how many classes he took**, **each** of his **grades**, and **names of classes**, after which the program **prints out a report card with GPA**.

Example output is below.

```
>>> report_card()
How many classes did you take? 4
What was the name of this class? 18.02
What was your grade? 94
...
REPORT CARD:
18.02 - 94
21H.601 96
8.01 91
5.111 - 88
Overall GPA 92.25
```

Hint: You'll want to use a for loop, and you'll probably want to keep track of names and grades separately.