

R1: Introduction to C Language

General Instructions:

- 1- Create a C project in eclipse called R1
- 2- Under R1, create file called: "R1.c". On top of the file insert the following comment:

```
/**  
-----  
Student Name:  
Student ID:  
Student email:  
-----  
**/
```

- 3- Follow the videos posted by the instructor on how to complete the tasks presented in this worksheet.
- 4- When you are done, you need to submit ONLY your "R1.c" file. Do not export the project or upload a .zip file.

This Weekly Report is designed to be shorter than regular reports to allow time for setting up C language under Eclipse which could take substantial Time.

Task 1: Setting up the environment.

Follow the video on how to set up and format your C environment. Create the function `void welcome()` which prints the following statement to the console.

```
Hello C World!  
This is my first program!
```

Task 2: Migrating from Python to C

Convert the following Python function into a C program. Use same variable and function names. The output of both programs should match.

```
# Calculate the total price for a purchase
def get_price():
    TAX = 13
    price = float(input("Enter product price: "))
    quantity = int(input("Enter number of purchased items: "))
    name = input("Enter product name: ")
    total = price*quantity
    total = total + total*TAX/100
    print("Total price for buying {} items of {} after tax is ${}".format(quantity,name,total))
    return
```

Here is the expected output:

```
Enter product price: 13.5
Enter number of purchased items: 6
Enter product name: shampoo
Total price for buying 6 items of shampoo after tax is $ 91.53
```

Task 3: Formatting Specifiers

Assume that you have the following defined variables:

```
char area_code = 'r';
unsigned int heat_peak = 32;
char cold_peak = -23;
char area_name[] = "PiTown";
short distance = 3430;
unsigned long phone = 1119994444;
const float PI = 3.14159274;
const double PI_PRECISE = 3.1415926535897931;
```

Using each of the above variables at least once, write a function `void formatting()` that will produce the following output.

```
I live in PiTown in the area code r which is 3430 yards from the metro station

The first letter of my city is 'P' and the second letter is 'i'.
This is the same as the mathematical constant "PI"

In math, the value of PI to seven digits = 3.14159274 and to 16 digits is 3.1415926535897931

The coldest temperature in PiTown is -23 while the hottest is 32

If you ever visit PiTown call me at my cell number "1119994444"
```

Task 4: Size of Data Types

Open the file “R1_Task4.c” using a text editor (e.g. Notepad++).

A simple program for finding the size of data types is provided. However, this program is provided as a main function.

Copy the program into R1.c, but this time naming the function `data_size()` instead of `main()`. You do not need to make any edits to the code inside the function. Some minor edits are needed to the file to make the code run.

The objective of this function is figure out how your machine interpret C data types.

Task 5: Circle

Follow the instructions provided by your instructor during the lecture to complete this task.

You cannot submit this task if you have missed the Monday lecture.