

Introduction to Programming 1 – Worksheet 6

This week's worksheet is based on trying the steps we have already covered in python. These programs must be written in C, make sure that they compile and execute correctly before you submit them.

Part 1 – Basic Output

Question 1

Write a program that uses a variable to remember your name and the prints the message "My name is XXXX". The variable should have the name **myname**. The value of your name should come from the variable and not be typed into the print statement. Remember, for strings we use the type char and we must specify the maximum number of letters.

Question 2

Write a program that uses a variable to remember your age. The variable should have the name **myage**. This variable should then be used to print the message "I am XX years old" where XX is replaced by the value of the variable

Part 2 - Input

Question 3

Using the gets function, ask the user to enter their name (Remember to print a message first asking for their name). This value should be stored in a variable called name. Using the variable name, print the message "Hi XXXX nice to meet you" (where XXXX is replaced by the name the user typed).

Question 4

Write a program to calculate the area of a triangle ($\text{base}/2 \times \text{height}$). The two values for base and height should be read in using the scanf function. Because we are performing a division with the numbers, you should use a real number type.

The output of the program should look something like this:

```
Enter the base: 13
```

```
Enter the height: 15
```

```
The area of the triangle with base 13.0 and height 15.0  
is 97.5
```

Part 3 – If Statements

Question 5

Write a program that reads two integers from the user using the scanf function. The program should then tell the user if they are equal or not.

Example output 1:

```
Enter the first number: 1
Enter the second number: 1
The values are equal
```

Example output 2:

```
Enter the first number: 1
Enter the second number: 2
The values are not equal
```

Question 6

Write a program that reads two integers from the user using the scanf function. The program should store the largest number in a variable called maxnum. This number should be printed out to the screen.

Example Output:

```
Enter the first number: 123
Enter the second number: 456
The biggest number is 456
```

Part 4 – Loops

Question 7

Write a program containing a loop that prints all of the numbers between 0 and 250 (Inclusive). Each number should be printed on a single line.

Question 8

Write a program that allows the user to play a guessing game. The user should be given a hint that they are too high or too low after each guess. The game should end when the user guesses the correct number.

Question 9

Write a program that asks the user to enter two numbers and then calculates the sum of the numbers in the range (inclusively). You should then print the value of the sum.

Example Output:

```
Enter the first number: 15
Enter the final number: 100
The sum of the values between 15 and 100 is 4845
```

Question 10

Write a program to read 10 values from the user and print the average of these values.