C Programming

Day 6

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C Programming Basics

- Commenting
- Working with Variables
- Basic Data Types
- Conversion Specifiers
- escape sequence
- Working with Arithmetic Expression
- Integer Arithmetic and Unary Minus Operator
- The Modulus Operator % %%
- Integer and floating Point conversions

Writing your first C Program

```
/* Our first C Program

Written on Novemeber 19,2017
*/

#include<stdio.h>

main(){

        printf("Programming is fun.\n");

}
```

Two types of Comments

```
// Our first C Program

//Written on Novemeber 19,2017

#include <stdio.h>

main(){

        printf("Programming is fun.\n");

}
```

What output would you expect from the following program?

```c
#include <stdio.h>
main(){
        printf("Testing...");
        printf("...1");
        printf("...2");
        printf("...3");
        printf("\n");

}
```

Answer: What output would you expect from the following program?

```c
#include <stdio.h>
main(){
        printf("Testing...");
        printf("...1");
        printf("...2");
        printf("...3");
        printf("\n");


}
```

Output: Testing......1...2...3

Displaying the value of a variable

```
//Example : Displaying variables

main(){

  int sum;

  sum = 50 + 25;
  printf("The sum of 50 and 25 is %i\n", sum );

}
```

Using Comments in a Program

```c
/* This program adds two integer values
        and displays the results */
#include<stdio.h>
main(){
        //Declare variables
        int value1, value2, sum;

        //Assign values and calculate their sum
        value1 = 50;
        value2 = 25;
        sum = value1 + value2;

        //Display the result
        printf("The sum of %i and %i is %i\n",
                value1, value2, sum );

}
```

Homework

Write a program that subtracts the value 15 from 87 and displays the result, together with an appropriate message, at the terminal.

Identify the syntax errors

```c
#include <stdio.h>
Main(){

        INT sum;
        /* COMPUTE RESULT
        sum = 25 + 37 - 19
        /* DISPLAY RESULT //
        printf("The answer is %i\n" sum);
}
```

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What output might you expect from the following program?

```c
#include<stdio.h>
main(){
        int answer, result;

        answer = 100;
        result = answer - 10;
        printf("The result is %i\n", result + 5 );
}
```

Using the Basic Data Types

```c
#include<stdio.h>
#include<stdbool.h>
main(){
  int integerVariable = 100;
  float floatVariable = 331.89;
  double doubleVariable = 8.44e+11;
  char characterVariable = 'W';
```

Using the Basic Data Types

```c
_Bool booleanVariable = false;
printf("integerVariable = %i\n",
        integerVariable );
printf("Floating Point Variable = %f\n",
 floatVariable );
printf("double precision Floating Point Variable =
        doubleVariable );
printf("double precision Floating Point Variable =
        doubleVariable );
printf("Character Variable = %c\n",
        characterVariable );
printf("Boolean Variable = %i\n",
 booleanVariable );
}
```

Working with Arithmetic Expression

```c
//Illustrate the use of various arithmetic operator
#include <stdio.h>

main(){

        int a = 100;
        int b = 2;
        int c = 25;
        int d = 4;

        int result;

 result = a - b;              //subtraction
 printf("a - b = %i\n", result );
```

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Working with Arithmetic Expression

```c
result = b * c;  //multiplication
printf("b * c = %i\n", result );

result = a / c;  //division
printf("a / c = %i\n", division );

result = a + b * c;  //precedence

printf("a + b * c = %i\n", result );
printf("a * b + c * d = %i\n", a * b + c * d);

}
```

Answer: Working with Arithmetic Expression

Output:

a - b = 98

b * c = 50

a / c = 4

a + b * c = 150

a * b + c * d = 300