ASSIGNMENT #3

PROGRAMMING FUNDAMENTAL

Submitted to:

Prof Tassaddaq Latif

Submitted by:

Memona Ashfaq

Roll No:

25017119-020

Department:

Computer Science 5th Induction

Question #01: Find the errors in the following codes.

(a)

```
#include<iostream>
using namespace std;
int main(){
   int I,j;
   for(I=1;I>7;I++)
   cout<<I;
cout<<"End of Program";
   return 7;
}
```

- **Error:** The loop condition I>7 is incorrect. It should be I<=7 for the loop to run. I should be i (lowercase) for consistency in variable

(b)

```
is smallest";
   num1=num2;
   else
      cout<<"num2 is smallest";
   return 0; #include<iostream>
using namespace std;
int main(){
   int num1=5, num2=10;
   if(num1<num2)
      cout<<"num1
}
```

Error: There's a statement num1=num2; between the if and else which is syntactically incorrect. It should be inside a block or removed

(c)

```
#include<iostream>
using namespace std;
int main(){
   int a=0, b=1;
   a=b++;
   cout<<a<<b;
   b=++a;
   cout<<a<<b;
   return 0;
}
```

- Output: 1222

(d)

```
#include<iostream>
using namespace std;
int main(){
   cout<<"Enter values";
   int a,b,res;
   cin>>a;cin>>b;
   a+b=res;
   cout<<"res="<<res;
   return 0;
}
```

- **Error:** a+b=res; should be res = a + b;.

Question #02: Define any two from the following

- Header files:

- Header files: Files included at the beginning of a C++ program using #include. They contain function declarations and macro definitions.

Example:

#include <iostream>

- Source code:

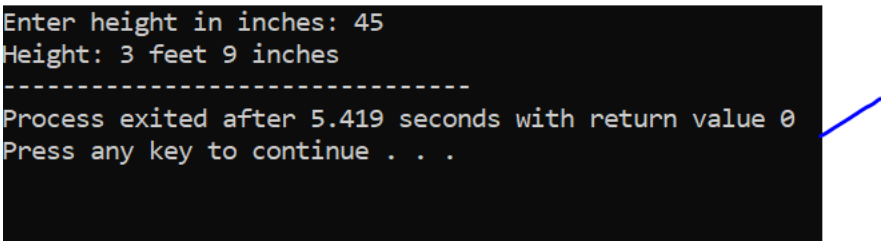
The actual code written by a programmer in a programming language like C++.

Example:

#include “math.h”

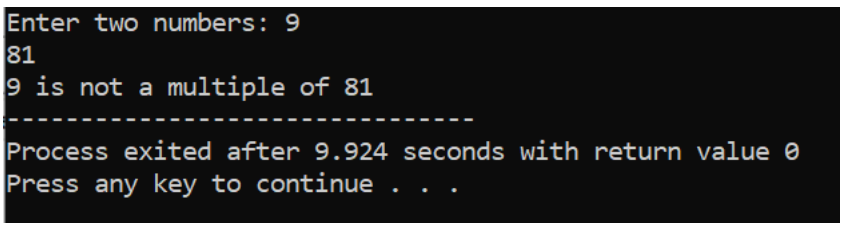
Question #03: Write a program that read height in inches. And display the height in feet and inches.

```
#include<iostream>
Using namespace std;
int main(){
   int heightInches;
   cout << "Enter height in inches: ";
   cin >> heightInches;
   int feet = heightInches / 12;
   int inches = heightInches % 12;
   cout << "Height: " << feet << " feet " << inches << " inches";
return 0;
}
```



Question #04: Write a program that takes two numbers from user. Find if the first number is multiple of second number or not.

```
#include <iostream>
Using namespace std;
Int main(){
   int num1, num2;
   cout << "Enter two numbers: ";
   cin >> num1 >> num2;
   if(num1
 % num2 == 0)
      cout << num1 << " is a multiple of " << num2;
   else
      cout << num1 << " is not a multiple of " << num2;
   return 0;
}
```



Question #05: Write a program that read 10 number from user and display their sum, maximum and minimum number.

```
#include<iostream>
using namespace std;
int main(){
   int sum = 0, max, min, num;
   cout << "Enter 10 numbers: ";
   cin >> num;
   sum = num; max = num; min = num;
   for(int i = 1; i < 10; i++){
      cin >> num;
      sum += num;
      if(num > max) max = num;
      if(num < min) min = num;
   }
   cout << "Sum: " << sum << endl;
   cout << "Max: " << max << endl;
   cout << "Min: " << min;
```

```
    return 0;
}
```

```
Enter 10 numbers: 1
2
3
4
5
6
7
8
9
10
Sum: 55
Max: 10
Min: 1
--------------------------------
Process exited after 19.4 seconds with return value 0
Press any key to continue . . .
```

SORTING ARRAY CODE:

```
#include <iostream>
using namespace std;

void bubbleSort(int arr[], int n){
   for(int i = 0; i < n-1; i++){
      for(int j = 0; j < n-i-1; j++){
         if(arr[j] > arr[j+1]){
            // Swap arr[j] and arr[j+1]
            int temp = arr[j];
            arr[j] = arr[j+1];
            arr[j+1] = temp;
         }
      }
   }
}

void printArray(int arr[], int n){
   for(int i = 0; i < n; i++)
```

```
        cout << arr[i] << " ";
    cout << endl;
}

int main(){
    int arr[] = {64, 34, 25, 12, 22, 11, 90};
    int n = sizeof(arr)/sizeof(arr[0]);
    bubbleSort(arr, n);
    cout << "Sorted array: ";
    printArray(arr, n);
    return 0;
}
```