National University of Sciences and Technology (NUST)

Department of Mechanical Engineering (SMME)

Fundamentals of Programming (FOP)

Assignment # 1

By

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Question#1:

```
#include<iostream>
using namespace std;
int main() {
    int num,R;
    cout<<"Enter a number: ";
    cin>>num;
    cout<<"The factors of "<<num<<" are:";
    for(int i=1;i<=num;i++)
    {
        R=num%i;
        if(R==0)
        {
            cout<<" "<<i;
        }
    }
    return 0;
}
```

```
Enter a number: 6
The factors of 6 are: 1 2 3 6
--------------------------------
```

Question#2:

Output: x is 5 and y is 10

Question#3:

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

int main() {
    int num;
    cout<<"Enter a number: ";
    cin>>num;
    if(num>10&&num<=20)
    {
        cout<<"\n"<<true;
    }
    else
    {
        cout<<"\n"<<false;
    }
    return 0;
}
```

```
Enter a number: 12

1
--------------------------------
```

Question#4:

```cpp
#include<iostream>
using namespace std;
int main() {
    int num,i,d;
    cout<<"Enter a positive number: ";
    cin>>num;
    d=num-1;
    while(d>=2)
    {
        i=2;
        while(i<d)
        {
            if(d%i==0)
            {
            break;
            }
            i++;
        }
        if(i==d)
        {
            cout<<"Greatest prime number less than or equal to "<<num<<" is "<<d<<endl;
            return 0;
        }
        d--;
    }
    cout<<endl;
    return 0;
}
```

```
Enter a positive number: 6
Greatest prime number less than or equal to 6 is 5
```

Question#5:

```
#include<iostream>
#include<string>
using namespace std;
int main() {
    int i;
    string str1,str2;
    cout<<"Enter first string: "; cin>>str1;
    cout<<"Enter second string: "; cin>>str2;
    for(i=0;i<str1.length();i++)
    {
        if(str1[i]!=str2[i])
        {
            cout<<str1[i]<<" "<<str2[i]<<endl;
            cout<<"not equal";
            break;
        }
        else
        {
            str2[i]=str1[str1.length()-1-i];
        }
        cout<<str2[i];
    }
    return 0;
}
```

```
Enter first string: hello
Enter second string: hello
olleh
--------------------------------
```

Question#6:

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

int main() {
    int remainder, dividend, divisor, quotient, r;
    cout<<"Enter dividend: ";
    cin>>dividend;
    cout<<"Enter divisor: ";
    cin>>divisor;
    quotient=0;
    remainder=0;
    for(int i=dividend;i>0;i-=divisor){
        if(divisor==0){
            cout<<"Math Error";
            break;
        }
        else{
            if(dividend>divisor){
                dividend-=divisor;
                quotient++;
            }
            else{
                break;
            }
        }
    }
    cout<<"result= "<<quotient<<endl;
    remainder=dividend%divisor;
    cout<<"Remainder= "<<remainder<<endl;
    return 0;
}
```

```
Enter dividend: 6
Enter divisor: 2
result= 2
Remainder= 0
```

Question#8:

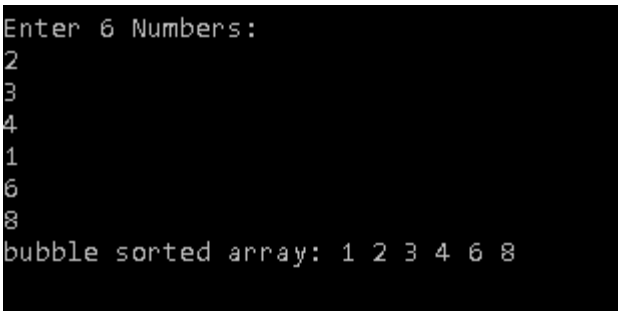
```
#include <iostream>
using namespace std;
int main() {
    cout<<"revised array: "<<endl;
int a[5] = {1, 2, 3, 4, 5};
a[5]=7;
a[6]=8;
a[7]=0;
a[8]=9;
a[9]=3;
for (int i = 0; i < 10; i++) {
cout << a[i] << " ";
}

return 0;}
```

```
revised array:
1 2 3 4 5 7 8 7 9 3
--------------------------------
```

Question#10:

```
#include<iostream>
using namespace std;
int main()
{
    int i, arr[6], j, temp;
    cout<<"Enter 6 Numbers: "<<endl;
    for(i=0; i<6; i++)
        cin>>arr[i];
    for(i=0; i<(6-1); i++)
    {
        for(j=0; j<(6-i-1); j++)
        {
            if(arr[j]>arr[j+1])
            {
                temp = arr[j];
                arr[j] = arr[j+1];
                arr[j+1] = temp;
            }
        }
    }
    cout<<"bubble sorted array: ";
    for(i=0; i<6; i++)
        cout<<arr[i]<<" ";
    cout<<endl;
    return 0;
}
```


Enter 6 Numbers:
2
3
4
1
6
8
bubble sorted array: 1 2 3 4 6 8
