ASSIGNMENT – 2

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Q.1) Write a program to check whether a number is prime or not.

```
#include<iostream>
#include<cmath>
using namespace std;
int main(){
  int n ;
  cout<<"Enter the number :";
  cin>>n;
  bool checkPrime(n);
}

bool checkPrime(int n) {
   if (n <= 1) {
      return false;
   }
   if (n == 2) { // 2 is a prime number
      return true;
   }
   if (n % 2 == 0) { // Even number greater than 2 is not prime
      return false;
   }
   // Check odd number1s from 3 up to sqrt(n)
   for (int i = 3; i <= sqrt(n); i += 2) {
      if (n % i == 0) {
         return false;
      }
   }
   return true;
}
```

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Q.2) Write a program to generate first N prime numbers. Accept N from user.

```
#include <iostream>
#include <cmath>

using namespace std;

bool checkPrime(int);
void generatePrime(int);

int main(){
  int n1;
      cout <<"enter the number :" ;
            cin >> n1;

  generatePrime(n1);
}

void generatePrime(int n1){
   if(n1<2){
      cout<<"There are no prime numbers less than 2"<<endl;
   }
   for(int i=2;i<=n1;i++){
      if(checkPrime(i)){
         cout<<i<<endl;
      }
   }
   cout<<endl;

}

bool checkPrime(int n) {
   if (n <= 1) {
      return false;
   }
   if (n == 2) { // 2 is a prime number
      return true;
   }
   if (n % 2 == 0) { // Even number greater than 2 is not prime
```

```
        return false;
    }
    // Check odd number1s from 3 up to sqrt(n)
    for (int i = 3; i <= sqrt(n); i += 2) {
        if (n % i == 0) {
            return false;
        }
    }
    return true;
}
```

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Q.3)Write a program to generate following pyramid

A

AB

ABC

..... A.....Z

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

int main() {
  int n;
  cout<<"Enter the number : " ;
  cin>>n;
  for(int i=0;i<26;i++){
     char ch = 'A';
            for(int j=0;j<i;j++){
                    cout<<ch++;
            }
  cout<<endl;
  }
  return 0;

}
```

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Q.4) Write a menu driven program to perform mathematical operations on two numbers.

1. Add

2. Sub

3. Mul

4. Div

5. Exit

accept the menu option and numbers form user.

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

int main() {
    int a,b,n;
    cout<<"Enter the number 1 :";
    cin>>a;
    cout<<"Enter the number 2:";
    cin>>b;
    while(true){
        cout<<"Enter the operation Number to perform :"<<endl;
        cout<<"1. Addition"<<endl;
        cout<<"2. Subtraction"<<endl;
        cout<<"3. Multiplication"<<endl;
        cout<<"4. Division"<<endl;
        cout<<"5. Exit the program"<<endl;

        cout<<"Enter the number:";
        cin>>n;

        if(n==5){
            cout<<"Exiting the program"<<endl;
            break;
        }

        switch(n){
            case  1:
                cout<<"Result :"<< " "<<a+b<<endl;
                break;
            case 2:
                cout<<"Result :"<< " "<<a-b<<endl;
                break;
            case 3:
                cout<<"Result :"<< " "<<a*b<<endl;
```

```
            break;
        case 4:
            cout<<"Result :"<< " "<<a/b<<endl;
            break;
        default:
            cout<<"You have Entered the wrong choice"<<endl;
            break;
      }
      cout<<endl;
  }
```

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Q.5)Generate following pyramid , accept the level from the user as input

1

1 2

1 2 3

..... 1.....N

where N is the level accepted as input

```
#include <iostream>
using namespace std;
int main(){
  int n ;
  cout<<"Enter the number:";
  cin>>n;
  for(int i=1;i<=n;i++){
     int a = 1;
            for(int j=1;j<=i;j++){
                    cout<<a++;
            }
  cout<<endl;
  }
}
```

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