

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

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

```

=====

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;
}

```

=====

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;
```

```
    }
```

```
}
```

```
=====
```