

## [Assignment 2 ]

1. Write a program to check whether a number is prime or not.
2. Write a program to generate first N prime numbers. Accept N from user.
3. Write a program to generate following pyramid

A

AB

ABC

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

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.

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.

Q1:)

```
#include <iostream>
```

```
using namespace std;
```

```
int main() {
```

```
    int number;
```

```
    cout << "Enter the number: ";
```

```
    cin >> number;
```

```
    if (number <= 1) {
```

```
        cout << "Number is not a prime number." << endl;
```

```
        return 0;
```

```
    }
```

```
    bool isPrime = true;
```

```
    for (int i = 2; i * i <= number; i++) {
```

```
        if (number % i == 0) {
```

```
            isPrime = false;
```

```
            break;
```

```
        }
```

```
    }
```

```
    if (isPrime) {
```

```
        cout << "Number is a prime number: " << number << endl;
```

```
    } else {
```

```
        cout << "Number is not a prime number." << endl;
```

```
}  
  
    return 0;  
}
```

Output:)

Enter the number: 4

Number is not a prime number.

Enter the number: 7

Number is a prime number: 7

Q2:)

```
#include<iostream>  
using namespace std;  
int main()  
{  
    int n,i,j,c=0;  
    cout<<"Enter upper limit up to which user want to print prime  
    numbers:"<<endl;  
    cin>>n;  
    for(i=1;i<=n;i++)  
    {for(j=1;j<=i;j++)  
    {if(i%j==0)  
    {c=c+1;}}  
    if(c==2)  
    cout<<"The prime number is:"<<i<<endl;  
    c=0;}
```

```
return 0;  
}
```

Output:)

Enter upper limit up to which user want to print prime numbers:

10

The prime number is:2

The prime number is:3

The prime number is:5

The prime number is:7

Q3:)

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

```
int main() {  
    char i,j;  
    for (char i = 'A'; i <= 'Z'; i++) {  
        for (char j = 'A'; j <= i; j++) {  
            cout << j;  
        }  
        cout << endl;  
    }  
  
    return 0;  
}
```

Output:)

A

AB

ABC

ABCD

ABCDE

ABCDEF

ABCDEFG

ABCDEFGH

ABCDEFGHI

ABCDEFGHIJ

ABCDEFGHIJK

ABCDEFGHIJKL

ABCDEFGHIJKLM

ABCDEFGHIJKLMN

ABCDEFGHIJKLMNO

ABCDEFGHIJKLMNOP

ABCDEFGHIJKLMNOPQ

ABCDEFGHIJKLMNOPQR

ABCDEFGHIJKLMNOPQRS

ABCDEFGHIJKLMNOPQRST

ABCDEFGHIJKLMNOPQRSTU

ABCDEFGHIJKLMNOPQRSTUV

ABCDEFGHIJKLMNOPQRSTUVW

ABCDEFGHIJKLMNOPQRSTUVWX

ABCDEFGHIJKLMNOPQRSTUVWXY

ABCDEFGHIJKLMNOPQRSTUVWXYZ

Q4:)

```
#include <iostream>
```

```
using namespace std;
```

```
int main() {
```

```
    int choice;
```

```
    double num1, num2;
```

```
        cout << "Menu:\n";
```

```
        cout << "1. Add\n";
```

```
        cout << "2. Subtract\n";
```

```
        cout << "3. Multiply\n";
```

```
        cout << "4. Divide\n";
```

```
        cout << "5. Exit\n";
```

```
        cout << "Enter your choice (1-5): ";
```

```
        cin >> choice;
```

```
        if (choice >= 1 && choice <= 4) {
```

```
            cout << "Enter two numbers: ";
```

```
            cin >> num1 >> num2;
```

```
        }
```

```
        switch (choice) {
```

```
case 1:
    cout << "Result: " << (num1 + num2) << endl;
    break;
case 2:
    cout << "Result: " << (num1 - num2) << endl;
    break;
case 3:
    cout << "Result: " << (num1 * num2) << endl;
    break;
case 4:
    if (num2 != 0) {
        cout << "Result: " << (num1 / num2) << endl;
    } else {
        cout << "Error: Division by zero is not allowed!" << endl;
    }
    break;
case 5:
    cout << "Exiting the program." << endl;
    break;
default:
    cout << "Invalid choice. Please select again." << endl;
}
cout << endl;
return 0;
}
```

Output:)

Menu:

1. Add
2. Subtract
3. Multiply
4. Divide
5. Exit

Enter your choice (1-5): 3

Enter two numbers: 2

5

Result: 10

Q5:)

```
#include<iostream>
using namespace std;
int main(){
    int N, i, j;
    cout<<"Enter the Number:"<<endl;
    cin>>N;
    for(i=1;i<=N;i++){
        for(j=1;j<=i;j++){
            cout<<j; }
        cout<<endl;
    }
    return 0;
}
```



Output:)

Enter the Number:10

1

12

123

1234

12345

123456

1234567

12345678

123456789

12345678910