```
/*Name -Himanshu
Branch - E&TC (A-1)
Roll No. - 1124
Whether a number is prime*/

#include <iostream>
using namespace std;
int main() {
    int n, i;
    bool isPrime = true;
    cout << "Enter a number: ";
    cin >> n;
    if (n <= 1) {
        isPrime = false;
    }
    else {
        for (i = 2; i <= n/2; i++) {
            if (n % i == 0) {
                isPrime = false;
                break;
            }
        }
    }
    if (isPrime)
        cout << n << " is a Prime Number.";
    else
        cout << n << " is not a Prime Number.";
    return 0;
}
```

Output

```
Enter a number: 8
8 is not a Prime Number.

=== Code Execution Successful ===
```

Output

```
Enter a number: 2
2 is a Prime Number.

=== Code Execution Successful ===
```

```
/*Name -Himanshu
Branch - E&TC (A-1)
Roll No. - 1124
Factorial of a number*/

#include <iostream>
using namespace std;
int main() {
    int n;
    long long fact = 1;
    cout << "Enter a number: ";
    cin >> n;
    for(int i = 1; i <= n; i++) {
        fact = fact * i;
    }
    cout << "Factorial of " << n << " = " << fact;
    return 0;
}
```

Output

```
Enter a number: 42
Factorial of 42 = 7538058755741581312

=== Code Execution Successful ===
```

Output

```
Enter a number: 5
Factorial of 5 = 120

=== Code Execution Successful ===
```

```
/*Name -Himanshu
Branch - E&TC (A-1)
Roll No. - 1124
Whether number is palindrome*/

#include <iostream>
using namespace std;
int main() {
    int n, r, rev = 0, temp;
    cin >> n;
    temp = n;
    while(n > 0) {
        r = n % 10;
        rev = rev * 10 + r;
        n = n / 10;
    }
    if(temp == rev)
        cout << "Palindrome";
    else
        cout << "Not Palindrome";
    return 0;
}
```

Output

```
424
Palindrome

=== Code Execution Successful ===
```

Output

```
61586745867
Not Palindrome

=== Code Execution Successful ===
```

```
/*Name -Himanshu
Branch - E&TC (A-1)
Roll No. - 1124
Sum of series*/


#include <iostream>
using namespace std;
int main() {
    int n, sum = 0;
    cin >> n;
    for(int i = 1; i <= n; i++)
        sum = sum + i;
    cout << sum;
    return 0;
}
```

Output

```
5
15

=== Code Execution Successful ===
```

Output

```
64
2080

=== Code Execution Successful ===
```

```
/*Name -Himanshu
Branch - E&TC (A-1)
Roll No. - 1124
Fibonacci series of N terms*/

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

Output

```
15
0 1 1 2 3 5 8 13 21 34 55 89 144 233 377

=== Code Execution Successful ===
```

Output

```
7
0 1 1 2 3 5 8

=== Code Execution Successful ===
```

Output

```
18
0 1 1 2 3 5 8 13 21 34 55 89 144 233 377 610 987 1597

=== Code Execution Successful ===
```

```
/*Name -Himanshu
Branch - E&TC (A-1)
Roll No. - 1124
Display Patterns such as Floyd’s triangle, Pyramid, Diamond*/
#include <iostream>
using namespace std;
int main() {
    int choice, n;
    cout << "Enter number of rows: ";
    cin >> n;
    cout << "1. Floyd's Triangle\n";
    cout << "2. Pyramid\n";
    cout << "3. Diamond\n";
    cout << "Enter your choice: ";
    cin >> choice;
    if(choice == 1) {
        int num = 1;
        for(int i = 1; i <= n; i++) {
            for(int j = 1; j <= i; j++) {
                cout << num << " ";
                num++;
            }
            cout << endl;
        }
    }
    else if(choice == 2) {
        for(int i = 1; i <= n; i++) {
            for(int s = 1; s <= n - i; s++)
                cout << " ";
            for(int j = 1; j <= 2*i - 1; j++)
                cout << "*";
            cout << endl;
        }
    }
    else if(choice == 3) {
        // Upper part
        for(int i = 1; i <= n; i++) {
            for(int s = 1; s <= n - i; s++)
                cout << " ";
            for(int j = 1; j <= 2*i - 1; j++)
                cout << "*";
            cout << endl;
        }
        // Lower part
        for(int i = n - 1; i >= 1; i--) {
            for(int s = 1; s <= n - i; s++)
                cout << " ";
            for(int j = 1; j <= 2*i - 1; j++)
                cout << "*";
            cout << endl;
        }
    }
    else {
```

```
/*Name -Himanshu
Branch - E&TC (A-1)
Roll No. - 1124
                    */


 cout << "Invalid choice";
    }
    return 0;
}
```

Output

```
Enter number of rows: 5
1. Floyd's Triangle
2. Pyramid
3. Diamond
Enter your choice: 1
1
2 3
4 5 6
7 8 9 10
11 12 13 14 15


=== Code Execution Successful ===
```

Output

```
Enter number of rows: 4
1. Floyd's Triangle
2. Pyramid
3. Diamond
Enter your choice: 2
   *
  ***
 *****
*******


=== Code Execution Successful ===
```

Output

```
Enter number of rows: 8
1. Floyd's Triangle
2. Pyramid
3. Diamond
Enter your choice: 3
       *
      ***
     *****
    *******
   *********
  ***********
 *************
***************
 *************
  ***********
   *********
    *******
     *****
      ***
       *


=== Code Execution Successful ===
```