```
// Problem given in lab class

// 1. Print an array in reverse order

#include <iostream>

using namespace std;


int main() {

    int len;

    cout << "Enter the length of the array: ";

    cin >> len;
```

```
    int arr[len];

    cout << "Write all the integers of the array
separeted by space: ";

    for (int i = 0; i < len; i++) {

        cin >> arr[i];

    }



    cout << "Reversed array is: ";

    for (int i = len-1; i >= 0; i--) {

        if (i != 0) {

            cout << arr[i] << " ";

        }

        else {
```

```
            cout << arr[i] << endl;

        }

    }



    return 0;

}



// 2. Search an element in the array

#include <iostream>

using namespace std;



int main() {

    int len;
```

```
    cout << "Enter the length of the array: ";

    cin >> len;



    int arr[len];

    cout << "Write all the integers of the array
separeted by space: ";

    for (int i = 0; i < len; i++) {

        cin >> arr[i];

    }



    int val;

    cout << "Enter the value you want to find in this
array: ";
```

```
    cin >> val;



    for (int i = 0; i < len; i++) {

        if (arr[i] == val) {

            cout << "The index of the value " << val << " is: "
<< i << endl;

            break;

        }

    }



    return 0;

}
```

```
// 3. Number of vowels in the character array

#include <iostream>

using namespace std;



int main() {

    int len;

    cout << "Enter the length of the array: ";

    cin >> len;



    char arr[len];

    cout << "Write all the characters of the array: ";

    for (int i = 0; i < len; i++) {

        cin >> arr[i];
```

```
    }



    int count = 0;

    for (int i = 0; i < len; i++) {

        if (arr[i] == 'A' || arr[i] == 'E' || arr[i] == 'I' || arr[i]
== 'O' || arr[i] == 'U' || arr[i] == 'a' || arr[i] == 'e' || arr[i]
== 'i' || arr[i] == 'o' || arr[i] == 'u') {

            count ++;

        }

    }

    cout << "The number of vowels in this array is: " <<
count << endl;



    return 0;
```

```
}



// 4. Print a 2D array

#include <iostream>

using namespace std;



int main() {

    int N[10][2];

    for (int i = 0; i < 10; i++) {

        cout << "Enter two value of row number " << i+1
<< ": ";

        cin >> N[i][0] >> N[i][1];

    }
```

```
    for (int i = 0; i < 10; i++) {

        cout << "N[" << i << "][0] = " << N[i][0] << ", N[" << i << "][1] = " << N[i][1] << endl;

    }



    return 0;

}
```

// 5. Multiplication between two number of each row in 2D array

```
#include <iostream>

using namespace std;
```

```
int main() {

   int N[10][2];

   for (int i = 0; i < 10; i++) {

      cout << "Enter two value of row number " << i+1
<< ": ";

      cin >> N[i][0] >> N[i][1];

   }



   for (int i = 0; i < 10; i++) {

      cout << N[i][0] << " X " << N[i][1] << " = " << N[i][0] *
N[i][1] << endl;

   }
```

```
    return 0;
}


// 6. Sum of an array of n integer
#include <iostream>
using namespace std;


int main() {
    int n;
    cout << "Enter the length of the array: ";
    cin >> n;
```

```
    int arr[n];

    cout << "Enter all values of the array: ";

    for (int i = 0; i < n; i++) {

        cin >> arr[i];

    }



    int sum = 0;

    for (int i = 0; i < n; i++) {

        sum += arr[i];

    }



    cout << "The sum of all integers of the array is: " <<
sum << endl;
```

```
    return 0;
}


// 7. Maximum and Minimum of an array of n integer
#include <iostream>
using namespace std;


int main() {
    int n;
    cout << "Enter the length of the array: ";
    cin >> n;
```

```
int arr[n];

cout << "Enter all values of the array: ";

for (int i = 0; i < n; i++) {

    cin >> arr[i];

}



int max = arr[0], min = arr[0];

for (int i = 0; i < n; i++) {

    if (arr[i] > max) {

        max = arr[i];

    }

    if (arr[i] < min) {
```

```
            min = arr[i];

        }

    }



    cout << "Minimum value of the array is: " << min << endl;

    cout << "Maximum value of the array is: " << max << endl;



    return 0;

}



// Assignment on loop (Sheet)

// 1. Find the sum and average of an array
```

```
#include <iostream>

using namespace std;



int main() {

   int sum = 0;

   cout << "Enter all integers of the array: ";

   for (int i = 0; i < 10; i++) {

      sum += i;

   }



   cout << "The sum of all integer of the array is: " <<
sum << endl;

   cout << "The average of all integer of the array is: "
```

```
<< sum / 10 << endl;


    return 0;
}


// 2. Cube of the number up to given integer
#include <iostream>
using namespace std;


int main() {
    int n;
    cout << "Enter an integer: ";
    cin >> n;
```

```
    for (int i = 1; i <= n; i++) {
        cout << "The cube of " << i << " is: " << i*i*i << endl;
    }
    return 0;
}

// 3. Sum of odd and even numbers in a range
#include <iostream>
using namespace std;

int main() {
```

```
int n, odd_sum = 0, even_sum = 0;

cout << "Enter an integer: ";

cin >> n;



for (int i = 0; i <= n; i++) {

    if (i % 2 == 0) {

        even_sum += i;

    }

    else {

        odd_sum += i;

    }

}
```

```
    cout << "The sum of odd numbers in range of " << n
<< " is: " << odd_sum << endl;

    cout << "The sum of even numbers in range of " << n
<< " is: " << even_sum << endl;



    return 0;

}



// 4. Print a asterisk triangle

#include <iostream>

using namespace std;



int main() {
```

```
    int n;

    cout << "Enter the number of rows of asterisk
triangle: ";

    cin >> n;



    for (int i = 0; i < n; i++) {

        for (int j = 0; j <= i; j++) {

            cout << "*";

        }

        cout << "\n";

    }



    return 0;
```

```
}



// 5. Print a number triangle

#include <iostream>

using namespace std;



int main() {

    int n;

    cout << "Enter the number of rows of number triangle: ";

    cin >> n;



    for (int i = 0; i < n; i++) {
```

```
        for (int j = 1; j <= i+1; j++) {

            cout << j;

        }

        cout << "\n";

    }



    return 0;

}



// 6. Print a number triangle 2

#include <iostream>

using namespace std;
```

```
int main() {

    int n;

    cout << "Enter the number of rows of number
triangle: ";

    cin >> n;



    for (int i = 1; i < n+1; i++) {

        for (int j = 1; j <= i; j++) {

            cout << i;

        }

        cout << "\n";

    }
```

```
    return 0;

}



// 7. Print a asterisk pyramid

#include <iostream>

using namespace std;



int main() {

    int n, x = 1;

    cout << "Enter the number of rows of asterisk pyramid: ";

    cin >> n;
```

```
for (int i = 1; i <= n; i++) {
    for (int j = 1; j <= n - i; j++) {
        cout << " ";
    }
    for (int k = 1; k <= x; k++) {
        if (k % 2 == 0) {
            cout << " ";
        }
        else {
            cout << "*";
        }
    }
```

```
        x += 2;

        for (int l = 1; l <= n - i; l++) {

            cout << " ";

        }

        cout << "\n";

    }

    return 0;

}



// 8. Factorial of a number

#include <iostream>

using namespace std;
```

```
int main() {

    int n, factorial = 1;

    cout << "Enter a number to count the factorial of a
number: ";

    cin >> n;



    for (int i = 1; i <= n; i++) {

        factorial *= i;

    }

    cout << "The factorial of " << n << " is: " << factorial;

}



// 9. Prime number or not
```

```
#include <iostream>

using namespace std;



int main() {

    int n, count = 0;

    cout << "Enter a number to check if it is prime or not: ";

    cin >> n;



    for (int i = 1; i <= n; i++) {

        if (n % i == 0) {

            count++;

        }
```

```
    }



    if (count == 2) {
        cout << n << " is a prime number.";
    }
    else {
        cout << n << " is not a prime number.";
    }
    return 0;
}



// 10. Print a number triangle 3
```

```
#include <iostream>

using namespace std;



int main() {

    int n, x = 1;

    cout << "Enter the number of rows of a number triangle: ";

    cin >> n;



    for (int i = 1; i <= n; i++) {

        for (int j = 1; j <= i; j++, x++) {

            if (j == i) {

                cout << x;
```

```
        }

        else {

            cout << x << " ";

        }

    }

    cout << "\n";

  }



  return 0;

}



// 11. Print a reverse triangle

#include <iostream>
```

```
using namespace std;



int main() {

    int n;

    cout << "Enter the number of rows of reverse
triangle: ";

    cin >> n;



    for (int i = 0; i < n; i++) {

        for (int j = n; j > i; j--) {

            cout << "*";

        }

        cout << "\n";
```

```
    }

    return 0;

}
```