

***Department of Artificial Intelligence and Multimedia Gaming Fundamentals
of Programming***
(Fall-2025)

Name: Muhammad Taha

Section: D

Sap Id: 5000001141

LAB No. 08

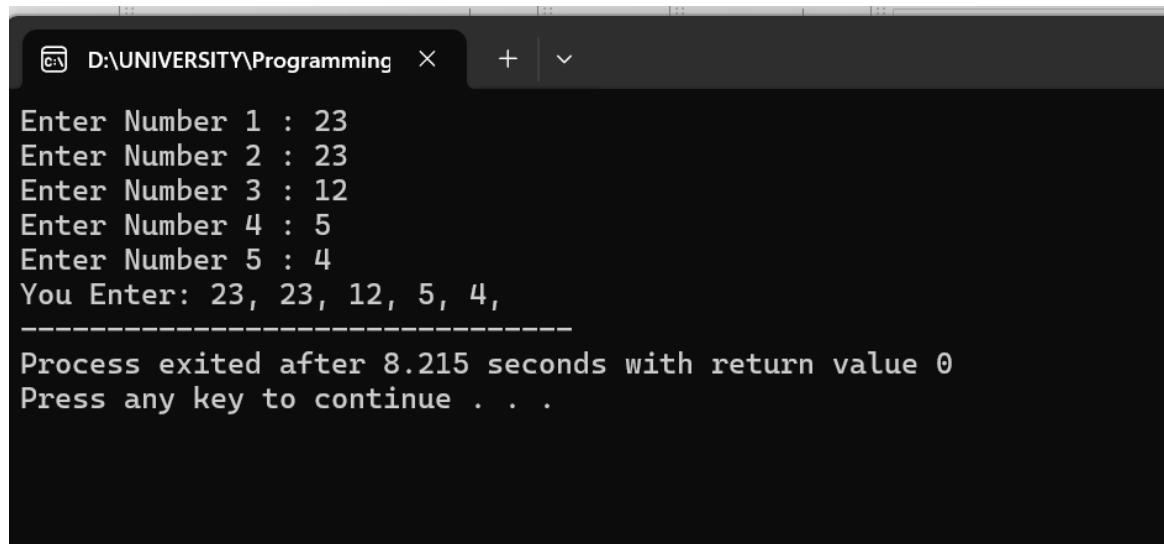
LECTURER: SAJJAD ALI RAJPER

Task 1

Code:

```
1 #include<iostream>
2 using namespace std;
3 int main() {
4     int arr[5];
5     for(int i=0;i<5;i++){
6         cout<<"Enter Number "<<i+1<<" : ";
7         cin>>arr[i];
8     }
9     cout<<"You Enter: ";
10    for(int i=0;i<5;i++){
11        cout<<arr[i]<<","<<" ";
12    }
13    return 0;
14 }
```

Output:



```
D:\UNIVERSITY\Programming >

Enter Number 1 : 23
Enter Number 2 : 23
Enter Number 3 : 12
Enter Number 4 : 5
Enter Number 5 : 4
You Enter: 23, 23, 12, 5, 4,
-----
Process exited after 8.215 seconds with return value 0
Press any key to continue . . .
```

Task 2

Code:

```
#include <iostream>
using namespace std;
int main() {
    int N;
    cout << "Enter the size of the array (N): ";
    cin >> N;
    int arr[N];
    cout << "Enter " << N << " integers:" << endl;
    for (int i = 0; i < N; i++) {
        cout << "Enter integer " << i + 1 << ": ";
        cin >> arr[i];
    }
    int largest = arr[0];
    for (int i = 1; i < N; i++) {
        if (arr[i] > largest) {
            largest = arr[i];
        }
    }
    cout << "\nThe largest number in the array is: " << largest << endl;
    return 0;
}
```

Output:

```
Enter the size of the array (N): 5
Enter 5 integers:
Enter integer 1: 2
Enter integer 2: 4
Enter integer 3: 7
Enter integer 4: 5
Enter integer 5: 7

The largest number in the array is: 7
-----
Process exited after 10.82 seconds with return value 0
Press any key to continue . . . |
```

Task 3

Code:

```
#include <iostream>
using namespace std;
int main() {
    int arr[8];
    int positive = 0, negative = 0, zero = 0;
    cout << "Enter 8 integers:" << endl;
    for (int i = 0; i < 8; i++) {
        cout << "Enter integer " << i + 1 << ": ";
        cin >> arr[i];
        if (arr[i] > 0) {
            positive++;
        } else if (arr[i] < 0) {
            negative++;
        } else {
            zero++;
        }
    }
    cout << "\nCount of positive numbers: " << positive << endl;
    cout << "Count of negative numbers: " << negative << endl;
    cout << "Count of zeros: " << zero << endl;

    return 0;
}
```

Output:

```
Enter 8 integers:
Enter integer 1: 3
Enter integer 2: 5
Enter integer 3: 2
Enter integer 4: 6
Enter integer 5: 8
Enter integer 6: 6
Enter integer 7: 5
Enter integer 8: 9

Count of positive numbers: 8
Count of negative numbers: 0
Count of zeros: 0

-----
Process exited after 13.73 seconds with return value 0
Press any key to continue . . . |
```

Task 4

Code:

```
1 #include <iostream>
2 using namespace std ;
3 int main(){
4     cout<<"enter 9 values : "<<endl;
5     int arr [3][3];
6     for(int i =0;i<3;i++){
7         for (int j=0; j<3;j++){
8             cin>>arr[i][j];
9         }
10    }
11    for(int i =0;i<3;i++){
12        for(int j =0; j<3;j++){
13            cout<< arr[i][j] << " ";
14        }
15        cout<<endl;
16    }
17    return 0;
18 }
19 }
```

Output:

```
C:\Users\f25ari1130\D
enter 9 values :
1
2
3
4
5
6
7
8
9
1 2 3
4 5 6
7 8 9
```

Task 5

Code:

```
#include <iostream>
using namespace std;
int main() {
    int arr[6];
    cout << "Enter 6 integers:\n";
    for (int i = 0; i < 6; i++) {
        cin >> arr[i];
    }
    cout << "\nNumbers in reverse order:\n";
    for (int i = 5; i >= 0; i--) {
        cout << arr[i] << " ";
    }

    return 0;
}
```

Output:

```
Enter 6 integers:
3
4
6
8
10
11

Numbers in reverse order:
11 10 8 6 4 3
-----
```

Task 6

Code:

```
[*] arrays.cpp table.cpp
1 #include <iostream>
2 using namespace std;
3
4 int main() {
5     int matrix[3][3];
6     int sum = 0;
7     cout << "Enter elements of the 3x3 matrix:\n";
8     for (int i = 0; i < 3; i++) {
9         for (int j = 0; j < 3; j++) {
10            cin >> matrix[i][j];
11            sum += matrix[i][j];
12        }
13    }
14    cout << "\nSum of all elements = " << sum << endl;
15
16    return 0;
17 }
```

Output:

```
C:\Users\f25ari1130\Documents > + ^
object Enter elements of the 3x3 matrix:
1
2
3
4
5
6
7
8
9

Sum of all elements = 45
-----
Process exited after 9.764 seconds with return value 0
Press any key to continue . . . |
```

Task 7

Code:

```
1 #include <iostream>
2 using namespace std;
3
4 int main() {
5     int matrix[3][3];
6     int rowSum;
7     cout << "Enter elements of the 3x3 matrix:\n";
8     for (int i = 0; i < 3; i++) {
9         for (int j = 0; j < 3; j++) {
10            cin >> matrix[i][j];
11        }
12    }
13    cout << "\nSum of each row:\n";
14    for (int i = 0; i < 3; i++) {
15        rowSum = 0;
16
17        for (int j = 0; j < 3; j++) {
18            rowSum += matrix[i][j];
19        }
20
21        cout << "Row " << i + 1 << ": " << rowSum << endl;
22    }
23
24    return 0;
25 }
```

Output:

```
Up C:\Users\f25ari1130\Documents + | v
Enter elements of the 3x3 matrix:
0
9
8
6
7
5
3
2
1

Sum of each row:
Row 1: 17
Row 2: 18
Row 3: 6

-----
Process exited after 13.9 seconds with return value 0
Press any key to continue . . . |
```

Task 8

Code:

```
1 #include <iostream>
2 using namespace std;
3 int main() {
4     int matrix[3][3];
5     int colSum;
6     cout << "Enter elements of the 3x3 matrix:\n";
7     for (int i = 0; i < 3; i++) {
8         for (int j = 0; j < 3; j++) {
9             cin >> matrix[i][j];
0         }
1     }
2     cout << "\nSum of each column:\n";
3     for (int j = 0; j < 3; j++) {
4         colSum = 0;
5
6         for (int i = 0; i < 3; i++) {
7             colSum += matrix[i][j];
8         }
9         cout << "Column " << j + 1 << ":" << colSum << endl;
0     }
1     return 0;
2 }
```

Output:

```
Enter elements of the 3x3 matrix:
8
7
6
9
0
3
2
1
7

Sum of each column:
Column 1: 19
Column 2: 8
Column 3: 16

-----
Process exited after 13.56 seconds with return value 0
Press any key to continue . . . |
```

Task 9

Code:

```
jg [*] arrayes.cpp [*] table.cpp
1 #include <iostream>
2 using namespace std;
3 int main() {
4     int matrix[3][3];
5     int maxElement;
6     cout << "Enter elements of the 3x3 matrix:\n";
7     for (int i = 0; i < 3; i++) {
8         for (int j = 0; j < 3; j++) {
9             cin >> matrix[i][j];
10        }
11    }
12
13    maxElement = matrix[0][0];
14    for (int i = 0; i < 3; i++) {
15        for (int j = 0; j < 3; j++) {
16            if (matrix[i][j] > maxElement) {
17                maxElement = matrix[i][j];
18            }
19        }
20    }
21    cout << "\nMaximum element in the matrix = " << maxElement << endl;
22
23    return 0;
24 }
```

Output:

```
C:\Users\f25ari1130\Documents + ▾
Enter elements of the 3x3 matrix:
8
2
4
7
7
9
8
1

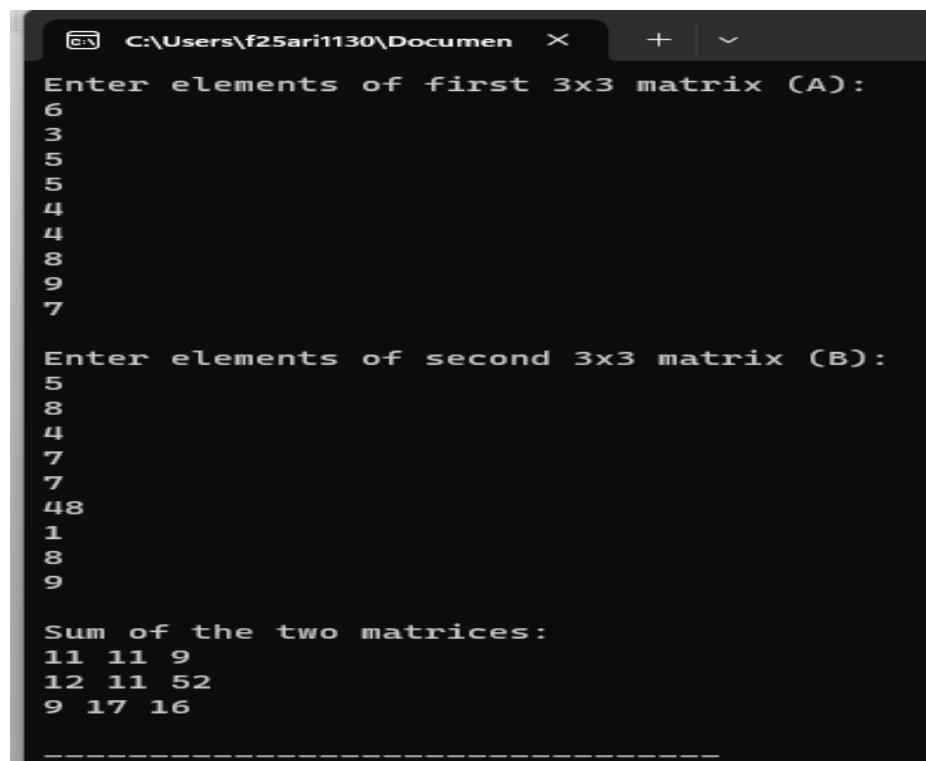
Maximum element in the matrix = 9
-----
Process exited after 13.62 seconds with return v
```

Task 10

Code:

```
1 #include <iostream>
2 using namespace std;
3 int main() {
4     int A[3][3], B[3][3], Sum[3][3];
5
6     cout << "Enter elements of first 3x3 matrix (A):\n";
7     for (int i = 0; i < 3; i++) {
8         for (int j = 0; j < 3; j++) {
9             cin >> A[i][j];
10        }
11    }
12    cout << "\nEnter elements of second 3x3 matrix (B):\n";
13    for (int i = 0; i < 3; i++) {
14        for (int j = 0; j < 3; j++) {
15            cin >> B[i][j];
16        }
17    }
18    for (int i = 0; i < 3; i++) {
19        for (int j = 0; j < 3; j++) {
20            Sum[i][j] = A[i][j] + B[i][j];
21        }
22    }
23    cout << "\nSum of the two matrices:\n";
24    for (int i = 0; i < 3; i++) {
25        for (int j = 0; j < 3; j++) {
26            cout << Sum[i][j] << " ";
27        }
28        cout << endl;
29    }
30
31    return 0;
32 }
```

Output:



The screenshot shows a terminal window with the following interaction:

```
C:\Users\f25ari1130\Documents
```

Enter elements of first 3x3 matrix (A):

```
6  
3  
5  
5  
4  
4  
8  
9  
7
```

Enter elements of second 3x3 matrix (B):

```
5  
8  
4  
7  
7  
48  
1  
8  
9
```

Sum of the two matrices:

```
11 11 9  
12 11 52  
9 17 16
```

Task 11

Code:

```
1 #include <iostream>
2 using namespace std;
3 int main() {
4     int matrix[3][3], transpose[3][3];
5     cout << "Enter elements of the 3x3 matrix:\n";
6     for (int i = 0; i < 3; i++) {
7         for (int j = 0; j < 3; j++) {
8             cin >> matrix[i][j];
9         }
10    }
11    for (int i = 0; i < 3; i++) {
12        for (int j = 0; j < 3; j++) {
13            transpose[j][i] = matrix[i][j];
14        }
15    }
16    cout << "\nTranspose of the matrix:\n";
17    for (int i = 0; i < 3; i++) {
18        for (int j = 0; j < 3; j++) {
19            cout << transpose[i][j] << " ";
20        }
21        cout << endl;
22    }
23
24    return 0;
25 }
```

Output:

The screenshot shows a terminal window with the following text output:

```
C:\Users\f25ari1130\Documents + ~
Enter elements of the 3x3 matrix:
7
8
9
4
5
6
1
2
3

Transpose of the matrix:
7 4 1
8 5 2
9 6 3
```