Shaheed Zulfikar Ali Bhutto Institute of Science & Technology

COMPUTER SCIENCE DEPARTMENT

Total Marks: 7.5

Obtained Marks: _____

DATA STRUCTURE AND ALGORITHM

Lab Report # 03

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Question no 1:

Write a program that can multiply, add, and Subtract 3x3

Procedure

- Open the **Dev c++** software on your laptop.
- Go to new file and click the project then go to console application and write you **C++ code**.
- Declare main and call function.
- Declare variable of integer type to store row and column count.
- Declare variable of integer type array to store first and second matrices element.
- Declare variable of integer type array to store resukt element.
- Using for loop for the counter.
- Display these statement on screen using cout statement.
- Press **F9** for compile and **F10** for run.
- Write your code in Word file.
- Take the Screen short of your output and paste it in Word file.

Code:

```
#include <iostream>

using namespace std;

int main()
{
   int rowCount, columnCount, i, j;
   int firstMatrix[3][3], secondMatrix[3][3], resultMatrix[3][3];
```

```
cout<<"Number of rows of matrices to be Added : ";
cin>>rowCount;

cout<<"Number of columns matrices to be Added : ";
cin>>columnCount;

cout<<"Elements of first matrix : \n";

for (i = 0; i < rowCount; i++)
   for (j = 0; j < columnCount; j++)
      cin>>firstMatrix[i][j];

cout<<"Elements of second matrix : \n";

for (i = 0; i < rowCount; i++)
   for (j = 0; j < columnCount; j++)
      cin>>secondMatrix[i][j];

cout<<"Addition of entered matrices : \n";

for (i = 0; i < rowCount; i++)
{
   for (j = 0; j < columnCount; j++)
   {
      resultMatrix[i][j] = firstMatrix[i][j] + secondMatrix[i][j];
      cout<<resultMatrix[i][j]<<"\t";
   }
   cout<<"\n";
}
```

```
   cout<<"Subtraction of entered matrices : \n";

   for (i = 0; i < rowCount; i++)
   {
      for (j = 0; j < columnCount; j++)
      {
         resultMatrix[i][j] = firstMatrix[i][j] - secondMatrix[i][j];
         cout<<resultMatrix[i][j]<<"\t";
      }
      cout<<"\n";
   }
   cout<<"Multiplication of entered matrices : \n";

   for (i = 0; i < rowCount; i++)
   {
      for (j = 0; j < columnCount; j++)
      {
         resultMatrix[i][j] = firstMatrix[i][j] * secondMatrix[i][j];
         cout<<resultMatrix[i][j]<<"\t";
      }
      cout<<"\n";
   }

   return 0;
}
```

CONSOLE SCREEN:

```
Number of rows of matrices to be Added : 3
Number of columns matrices to be Added : 3
Elements of first matrix :
1
2
3
4
5
6
7
8
9
Elements of second matrix :
0
8
7
6
5
4
3
2
1
Addition of entered matrices :
1       10      10
10      10      10
10      10      10
Subtraction of entered matrices :
1       -6      -4
-2      0       2
4       6       8
Multiplication of entered matrices :
0       16      21
24      25      24
21      16      9
```