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CSSE

Question 1

```c
#include <stdio.h>

void scanMatrix(int arr[][10], int r, int c)
{
    for (int i = 0; i < r; i++)
    {
        for (int j = 0; j < c; j++)
        {
            scanf("%d", &arr[i][j]);
        }
        printf("\n");
    }
}
void printMatrix(int a[][10], int r, int c)
{
    for (int i = 0; i < r; i++)
    {
        printf("|");
        for (int j = 0; j < c; j++)
        {
            printf(" %d ", a[i][j]);
        }
        printf("|\n");
    }
    printf("\n");
}

void addMatrix(int a[][10], int b[][10], int r, int c)
{
    int res[10][10];
    printf("Adding two matrix\n\n");
    printMatrix(a, r, c);
    printf("    (+) \n\n");
    printMatrix(b, r, c);
    for (int i = 0; i < r; i++)
    {
        for (int j = 0; j < c; j++)
        {
```

```c
void addMatrix(int a[][10], int b[][10], int r, int c)
{
    int res[10][10];
    printf("Adding two matrix\n\n");
    printMatrix(a, r, c);
    printf("    (+) \n\n");
    printMatrix(b, r, c);
    for (int i = 0; i < r; i++)
    {
        for (int j = 0; j < c; j++)
        {
            res[i][j]=a[i][j]+b[i][j];
        }

    }
    printf("Addition of two matrix is : \n");
    printMatrix(res,r,c);
}

void subMatrix(int a[][10], int b[][10], int r, int c)
{
    int res[10][10];
    printf("Subtracting two matrix\n\n");
    printMatrix(a, r, c);
    printf("    (-) \n\n");
    printMatrix(b, r, c);
    for (int i = 0; i < r; i++)
    {
        for (int j = 0; j < c; j++)
        {
            res[i][j]=a[i][j]-b[i][j];
        }

    }
    printf("Subtracting of two matrix is : \n");
    printMatrix(res,r,c);
}
```

```c
void mulMatrix(int a[][10], int b[][10], int r, int c)
{
    int res[10][10];
    printf("Multiplication two matrix\n\n");
    printMatrix(a, r, c);
    printf("    (*) \n\n");
    printMatrix(b, r, c);
    for (int i = 0; i < r; i++)
    {
        for (int j = 0; j < c; j++)
        {
            res[i][j]=a[i][j]*b[i][j];
        }

    }
    printf("Multiplication of two matrix is : \n");
    printMatrix(res,r,c);
}
int main()
{
    int r, c;
    printf("Enter the number of rows and column u want to create\n");
    scanf("%d %d", &r, &c);
    int a[10][10];
    int b[10][10];
    int res[10][10];
    printf("Enter the first matrix\n");
    scanMatrix(a, r, c);
    printf("Enter the second matrix of same number of columns and rows\n");
    scanMatrix(b, r, c);

    addMatrix(a, b, r, c);
    subMatrix(a, b, r, c);
    mulMatrix(a, b, r, c);
}
```

Output

```
PS C:\Users\KIIT\Documents\coding> cd "c:\Users
\KIIT\Documents\coding\3rd semister\DSA lab\lab
 activity\" ; if ($?) { gcc q1.c -o q1 } ; if (
$?) { .\q1 }
Enter the number of rows and column u want to c
reate
2
2
Enter the first matrix
1
0

0
2

Enter the second matrix of same number of colum
ns and rows
5
0

5
7

Adding two matrix

| 1  0 |
| 0  2 |

    (+)

| 5  0 |
| 5  7 |

Addition of two matrix is :
| 6  0 |
| 5  9 |

Subtracting two matrix
```

```
Subtracting two matrix

| 1  0 |
| 0  2 |

    (-)

| 5  0 |
| 5  7 |

Subtracting of two matrix is :
| -4  0 |
| -5  -5 |

Multiplication two matrix

| 1  0 |
| 0  2 |

    (*)

| 5  0 |
| 5  7 |

Multiplication of two matrix is :
| 5  0 |
| 0  14 |

PS C:\Users\KIIT\Documents\coding\3rd semister\
DSA lab\lab activity>
```

Question 2

```c
#include <stdio.h>

struct poly
{
  float coeff;
  int exp;
};



struct poly a[50],b[50],c[50],d[50];

int main()
{
 int i;
 int deg1,deg2;
 int k=0,l=0,m=0;


 printf("Enter the highest degree of poly1:");
 scanf("%d",&deg1);

 for(i=0;i<=deg1;i++)
 {

    printf("\nEnter the coeff of x^%d :",i);
    scanf("%f",&a[i].coeff);

    a[k++].exp = i;
 }



 printf("\nEnter the highest degree of poly2:");
 scanf("%d",&deg2);

 for(i=0;i<=deg2;i++)
```

```
33
34  printf("\nEnter the highest degree of poly2:");
35  scanf("%d",&deg2);
36
37  for(i=0;i<=deg2;i++)
38  {
39        printf("\nEnter the coeff of x^%d :",i);
40        scanf("%f",&b[i].coeff);
41
42        b[l++].exp = i;
43  }
44
45
46   printf("\nExpression 1 = %.1f",a[0].coeff);
47   for(i=1;i<=deg1;i++)
48   {
49     printf("+ %.1fx^%d",a[i].coeff,a[i].exp);
50   }
51
52
53   printf("\nExpression 2 = %.1f",b[0].coeff);
54    for(i=1;i<=deg2;i++)
55     {
56       printf("+ %.1fx^%d",b[i].coeff,b[i].exp);
57     }
58
59
60  if(deg1>deg2)
61     {
62          for(i=0;i<=deg2;i++)
63           {
64             c[m].coeff = a[i].coeff + b[i].coeff;
65             c[m].exp = a[i].exp;
66             m++;
67           }
68
```

```
59
60  if(deg1>deg2)
61     {
62          for(i=0;i<=deg2;i++)
63           {
64             c[m].coeff = a[i].coeff + b[i].coeff;
65             c[m].exp = a[i].exp;
66             m++;
67           }
68
69           for(i=deg2+1;i<=deg1;i++)
70           {
71             c[m].coeff = a[i].coeff;
72             c[m].exp = a[i].exp;
73             m++;
74           }
75
76     }
77  else
78   {
79     for(i=0;i<=deg1;i++)
80      {
81        c[m].coeff = a[i].coeff + b[i].coeff;
82        c[m].exp = a[i].exp;
83        m++;
84      }
85
86     for(i=deg1+1;i<=deg2;i++)
87     {
88       c[m].coeff = b[i].coeff;
89       c[m].exp = b[i].exp;
90       m++;
91     }
92   }
93
```

```
93
94
95
96    printf("\nExpression after additon  = %.1f",c[0].coeff);
97    for(i=1;i<m;i++)
98    {
99       printf("+ %.1fx^%d",c[i].coeff,c[i].exp);
100   }
101
102   return 0;
103
104 }
105
```

Output

```
PS C:\Users\KIIT\Documents\coding> cd "c:\Users
\KIIT\Documents\coding\3rd semister\DSA lab\lab
 activity\" ; if ($?) { gcc q2.c -o q2 } ; if (
$?) { .\q2 }
Enter the highest degree of poly1:3

Enter the coeff of x^0 :6

Enter the coeff of x^1 :9

Enter the coeff of x^2 :3

Enter the coeff of x^3 :6

Enter the highest degree of poly2:2

Enter the coeff of x^0 :6

Enter the coeff of x^1 :34

Enter the coeff of x^2 :74

Expression 1 = 6.0+ 9.0x^1+ 3.0x^2+ 6.0x^3
Expression 2 = 6.0+ 34.0x^1+ 74.0x^2
Expression after additon  = 12.0+ 43.0x^1+ 77.0
x^2+ 6.0x^3
PS C:\Users\KIIT\Documents\coding\3rd semister\
DSA lab\lab activity>
```