PROGRAMMING FUNDAMENTALS
ASSIGNMENT LAB – 08

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24K – 0530

SECTION 1D

Q1)

Q1 pf lab.c

File Edit View

```
#include<stdio.h>
main(){
        int i,j;
        for (i=0;i<=4;i++){
                for (j=1;j<=i;j++){
                        printf("%d",j);
                }
                printf("\n");
        }
}
```

C:\Users\Hp\Downloads\Q1 p

```
1
12
123
1234

--------------------------------
Process exited after 0.06149 seconds with return value 0
Press any key to continue . . .
```

Q2)

Q1 pf lab.c | Q2 pf lab.c

File Edit View

```
#include<stdio.h>
main(){
        int i,j,k=0,l=0;
        int arr1[2][2];
        int arr2[2][2];
        for (i=0;i<2;i++){
                for (j=0;j<2;j++){
                        printf("enter number for %d row  %d column:",i,j);
                        scanf(" %d",&arr1[i][j]);

                }

                }
                for (i=0;i<2;i++){
                        for (j=0;j<2;j++){
                                arr2[j][i]=arr1[i][j];
                        }

                }
                for (i=0;i<2;i++){
                        for (j=0;j<2;j++){
                                printf("%d\t",arr2[i][j]);
                        }
                        printf("\n");
                }

        }
```

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```
enter number for 0 row  0 column:0
enter number for 0 row  1 column:1
enter number for 1 row  0 column:10
enter number for 1 row  1 column:11
0       10
1       11

--------------------------------
Process exited after 27.54 seconds with return value 0
Press any key to continue . . .
```

Q3)

Q1 pf lab.c | Q2 pf lab.c | Q3 pf lab.c

File Edit View

```
#include<stdio.h>
main()
{
        int arr[2][3][3]={
                {
                        {1,2,3},
                        {2,9,4},
                        {8,6,4}
                },
                {
                        {4,9,6},
                        {6,8,1},
                        {8,9,4}
                }

        };
        int sum1=0,sum2=0;
        int i,j,k;
        for (i=0;i<1;i++){
                for (j=0;j<3;j++){
                        for(k=0;k<3;k++){
                                sum1=sum1+arr[i][j][k];
                        }
                }
        }
        for (i=1;i<2;i++){
                for (j=0;j<3;j++){
                        for(k=0;k<3;k++){
                                sum2=sum2+arr[i][j][k];
                        }
                }
        }
        printf("sum of first page of 3x3 matrix = %d\n",sum1);
        printf("sum of second page of 3x3 matrix = %d\n",sum2);
}
```

C:\Users\Hp\Downloads\Q3 p

```
sum of first page of 3x3 matrix = 39
sum of second page of 3x3 matrix = 55

--------------------------------
Process exited after 0.06796 seconds with return value 0
Press any key to continue . . .
```

Q4)

Q1 pf lab.c | Q2 pf lab.c | Q3 pf lab.c | Q4 pf lab (2).c

File Edit View

```
#include<stdio.h>
main(){
        int count,st,en,i,j;
        printf("\nEnter a starting point:");
        scanf("%d",&st);
        printf("\nEnter a ending point:");
        scanf("%d",&en);
        for( i=st;i<=en;i++){
                count=0;
                if (i>1){
                        for ( j=st;j<=en;j++){
                                if (i%j==0){
                                        count++;
                                }
                        }
                        if (count==2){
                                printf("%d\t",i);
                        }

                }

        }


}
```

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```
Enter a starting point:1

Enter a ending point:30
2       3       5       7       11      13      17      19      23      29
--------------------------------
Process exited after 8.922 seconds with return value 0
Press any key to continue . . .
```

Q5)

Q1 pf lab.c | Q2 pf lab.c | Q3 pf lab.c | Q4 pf lab (2).c | Q5 pf lab.c

File Edit View

```
#include<stdio.h>
main(){
        int i,n,j;
        printf("Starting odd number:");
        scanf("%d",&n);
        for (i=n;i>0;i--){
                if (i%2!=0){
                        for (j=0;j<i;j++){
                                printf("%d",i);
                        }
                        printf("\n");
                }
        }
}
```

C:\Users\Hp\Downloads\Q5 p

```
Starting odd number:7
7777777
55555
333
1

--------------------------------
Process exited after 7.224 seconds with return value 0
Press any key to continue . . .
```

Q6)

Q1 pf lab.c | Q2 pf lab.c | Q3 pf lab.c | Q4 pf lab (2).c | Q5 pf lab.c | **Q6 pf lab.c**

File Edit View

```c
#include <stdio.h>

 main() {
    int matrix[3][3], i, j, k, minRow, maxCol;



    for (i = 0; i < 3; i++) {

        for (j = 0; j < 3; j++) {
                printf("Enter number for %d row and %d column:\n",i,j);
            scanf("%d", &matrix[i][j]);
        }
    }
   printf("\nThe matrix is \n");
    for (i = 0; i < 3; i++) {
        for (j = 0; j < 3; j++) {
            printf("%d ", matrix[i][j]);
        }
        printf("\n");
    }
    printf("\nSaddle Points:\n");
    for (i = 0; i < 3; i++) {
        for (j = 0; j < 3; j++) {

            minRow = matrix[i][0];
            for (k = 1; k < 3; k++) {
                if (matrix[i][k] < minRow) {
                    minRow = matrix[i][k];
                }
            }
            if (matrix[i][j] == minRow) {
                maxCol = matrix[0][j];
                for (k = 1; k < 3; k++) {
                    if (matrix[k][j] > maxCol) {
                        maxCol = matrix[k][j];
                    }
                }
                if (matrix[i][j] == maxCol) {
                    printf("Saddle point found at (%d, %d) with value %d\n", i + 1, j + 1, matrix[i][j]);
                }
            }
        }
    }


}
```

C:\Users\Hp\Downloads\Q6 p

```
Enter number for 0 row and 0 column:
1
Enter number for 0 row and 1 column:
2
Enter number for 0 row and 2 column:
3
Enter number for 1 row and 0 column:
4
Enter number for 1 row and 1 column:
5
Enter number for 1 row and 2 column:
6
Enter number for 2 row and 0 column:
7
Enter number for 2 row and 1 column:
8
Enter number for 2 row and 2 column:
9

The matrix is
1 2 3
4 5 6
7 8 9

Saddle Points:
Saddle point found at (3, 1) with value 7

--------------------------------
Process exited after 23.22 seconds with return value 0
Press any key to continue . . .
```

Q7)

Q1 pf lab.c | Q2 pf lab.c | Q3 pf lab.c | Q4 pf lab (2).c | Q5 pf lab.c | Q6 pf lab.c | Q7 pf lab.c

File Edit View

```
+#include<stdio.h>
main()
{
        int arr1[3][3];
        int arr2[3][3];
        int arr3[3][3];
        int i=0,j=0,k=0,l=0,x=0,y=0;
        int sum;
        for (i = 0; i < 3; i++) {

        for (j = 0; j < 3; j++) {
                printf("Enter number for %d row and %d column arr1:",i,j);
            scanf("%d", &arr1[i][j]);
        }
    }
    for (k = 0; k < 3; k++) {

        for (l = 0; l < 3; l++) {
                printf("Enter number for %d row and %d column arr2:",k,l);
            scanf("%d", &arr2[k][l]);
        }
    }
    for (i = 0; i < 3; i++) {
        for (j = 0; j < 3; j++) {
            int sum = 0;
            for (k = 0; k < 3; k++) {
                sum += arr1[i][k] * arr2[k][j];
            }
            arr3[i][j] = sum;
        }
    }



        for (i=0;i<3;i++){
                for (j=0;j<3;j++){
                        printf("%d\t",arr3[i][j]);
                }
                printf("\n");
        }


}
```

C:\Users\Hp\Downloads\Q7 p

```
Enter number for 0 row and 0 column arr1:1
Enter number for 0 row and 1 column arr1:2
Enter number for 0 row and 2 column arr1:3
Enter number for 1 row and 0 column arr1:4
Enter number for 1 row and 1 column arr1:5
Enter number for 1 row and 2 column arr1:6
Enter number for 2 row and 0 column arr1:7
Enter number for 2 row and 1 column arr1:8
Enter number for 2 row and 2 column arr1:9
Enter number for 0 row and 0 column arr2:9
Enter number for 0 row and 1 column arr2:8
Enter number for 0 row and 2 column arr2:7
Enter number for 1 row and 0 column arr2:6
Enter number for 1 row and 1 column arr2:5
Enter number for 1 row and 2 column arr2:4
Enter number for 2 row and 0 column arr2:3
Enter number for 2 row and 1 column arr2:2
Enter number for 2 row and 2 column arr2:1
30      24      18
84      69      54
138     114     90

--------------------------------
Process exited after 31.46 seconds with return value 0
Press any key to continue . . .
```

Q8)

Q1 pf lab.c | Q2 pf lab.c | Q3 pf lab.c | Q4 pf lab (2).c | Q5 pf lab.c | Q6 pf lab.c | Q7 pf lab.c | Q8 pf lab.c

File Edit View

```
#include<stdio.h>
main(){
        int n,i,j=0;
        printf("enter number of rows for upper half of diamond:");
        scanf("%d",&n);
        for (i=0;i<n;i++){
                for (j=0;j<n-i;j++){
                        printf(" ");
                }
                for (int k=0;k<=i;k++){
                        printf("* ");
                }
                printf("\n");
        }
         for (i=n-1;i>0; i--) {
        for (j=0;j<=n-i;j++) {
            printf(" ");
        }
        for (int k=0;k<i;k++) {
            printf("* ");
        }
        printf("\n");
    }
}
```

C:\Users\Hp\Downloads\Q8 p

```
enter number of rows for upper half of diamond:4
     *
    * *
   * * *
  * * * *
   * * *
    * *
     *

--------------------------------
Process exited after 2.649 seconds with return value 0
Press any key to continue . . .
```