ex-6

Matrix

```
#include <stdio.h>
int main() {
    int row, col;
    printf("Enter the row and column value: ");
    scanf("%d %d", &row, &col);
    int m1[row][col], m2[row][col], sum[row][col], t1[col][row], t2[col][row];
    printf("Enter the first matrix:\n");
    for (int i = 0; i < row; i++)
        for (int j = 0; j < col; j++)
            scanf("%d", &m1[i][j]);
    printf("Enter the second matrix:\n");
    for (int i = 0; i < row; i++)
        for (int j = 0; j < col; j++) {
            scanf("%d", &m2[i][j]);
            sum[i][j] = m1[i][j] + m2[i][j];
            t1[j][i] = m1[i][j];
            t2[j][i] = m2[i][j];
        }
    printf("Resultant matrix after addition:\n");
    for (int i = 0; i < row; i++, printf("\n"))
        for (int j = 0; j < col; j++)
            printf("%d ", sum[i][j]);
    printf("Transpose of first matrix:\n");
    for (int i = 0; i < col; i++, printf("\n"))
        for (int j = 0; j < row; j++)
            printf("%d ", t1[i][j]);
    printf("Transpose of second matrix:\n");
    for (int i = 0; i < col; i++, printf("\n"))
        for (int j = 0; j < row; j++)
            printf("%d ", t2[i][j]);
    return 0;
}
```

ex-7

length and reverse

```
#include<stdio.h>
int main()
{
char a[20],*ptr;
int len = 0, i;
printf("Enter the string  : ");
```

```
scanf("%s",a);
ptr = a;
while(*ptr != '\0')
{
   len ++ ;
   ptr ++;
}
printf("The Length of the String is %d\n\n",len);
    printf("The reversed string is : ");
ptr--;
for(i = len - 1; i >= 0 ; i--)
{
printf("%c",*ptr);
ptr--;
}
printf("\n");
return 0;
}
```

ex-8
linear search

```
#include <stdio.h>
int main() {
    int a[100], n, key, *ptr;
    printf("Enter the number of elements in the array\n");
    scanf("%d", &n);
    printf("Enter the elements of the array\n");
    for (int i = 0; i < n; i++) {
        scanf("%d", &a[i]);
    }
    printf("\nEnter the element to search\n");
    scanf("%d", &key);
    for (ptr = a; ptr < a + n; ptr++) {
        if (*ptr == key) {
            printf("\nThe given number %d is found in the array", key);
            printf("\nThe position of %d is %ld", key, ptr - a + 1);
            return 0;  // exit after finding the element
        }
    }
    printf("\nThe element %d is not found in the array", key);
    return 0;
}
```

ex-9
Structure

```
#include <stdio.h>

struct student {
    int regNo;
    char name[50];
    int marks[6];
    int total;
    float average;
};

int main() {
    struct student s[70];
    int n, i, j;

    printf("Enter the number of students: ");
    scanf("%d", &n);

    for (i = 0; i < n; i++) {
        printf("\nEnter the register number, name, and six marks one by one:\n");
        scanf("%d %s", &s[i].regNo, s[i].name);

        for (s[i].total = 0, j = 0; j < 6; j++) {
            scanf("%d", &s[i].marks[j]);
            s[i].total += s[i].marks[j];
        }

        s[i].average = s[i].total / 6.0;

        printf("\nTotal mark and average mark are:\n%d\t%s\t%d\t%.2f\n",
               s[i].regNo, s[i].name, s[i].total, s[i].average);
    }

    return 0;
}
```