Assignment 3

HW: Arrays

EX1:

```
#include <stdio.h>
#include <stdlib.h>

int main()
{
   float arr1[2][2],arr2[2][2],sum[2][2];
   int i,j;
   printf("Enter the elements of the first matrix\n");
   for(i=0;i<2;i++)
   {
      for(j=0;j<2;j++)
      {
         printf("Enter a%d%d: ",i+1,j+1);
         scanf("%f",&arr1[i][j]);
      }

   }

   printf("Enter the elements of the second matrix\n");
   for(i=0;i<2;i++)
   {
      for(j=0;j<2;j++)
      {
         printf("Enter b%d%d: ",i+1,j+1);

         scanf("%f",&arr2[i][j]);
      }

   }

   for(i=0;i<2;i++)
   {
```

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

    }

    for(i=0;i<2;i++)
    {
        for(j=0;j<2;j++)
        {
          printf("%.1f  ",sum[i][j]);
        }
       printf("\n");
    }


          return 0;
}
```

EX2:

```
#include <stdio.h>
#include <stdlib.h>

int main()
{
  int index,i;
  float avg;
  printf("Enter number of elements: ");
  scanf("%d",&index);

  int arr[index];

  for(i=0 ; i<index ; i++)
  {
     printf("enter element %d: ",i+1);
     scanf("%d",&arr[i]);
```

```
  }

  for(i=0 ; i<index ; i++)
  {
     avg = avg + arr[i];
  }

  avg= avg/index;

  printf("the average is: %.1f", avg);

          return 0;
}
```

EX3:

```
#include <stdio.h>
#include <stdlib.h>

int main()
{
  int row, col,i,j;
  printf("enter rows and columns of the matrix:\n");
  scanf("%d%d",&row,&col);
  int arr[row][col];

  printf("enter elements of the matrix\n");
  for(i=0 ; i<row ; i++)
  {
     for(j=0 ; j<col ; j++)
     {
        printf("enter element a%d%d: ",i+1,j+1);
        scanf("%d",&arr[i][j]);
     }
  }
  printf("The matrix entered:\n");
  for(i=0 ; i<row ; i++)
  {
```

```
    for(j=0 ; j<col ; j++)
    {
       printf("%d  ",arr[i][j]);
    }
    printf("\n");
  }
  printf("The transpose is:\n");
  for(i=0 ; i<col ; i++)
  {
    for(j=0 ; j<row ; j++)
    {
       printf("%d ",arr[j][i]);
    }
    printf("\n");
  }


        return 0;
}
```

EX4:

```
#include <stdio.h>
#include <stdlib.h>

int main()
{
  int nElements,i,arr[100],inserted,loc;

  printf("enter number of elements: ");
  scanf("%d",&nElements);

  printf("enter the elements: ");
  for(i=0;i<nElements;i++)
  {
    scanf("%d",&arr[i]);
  }
```

```
  printf("enter the element to be inserted: ");
  scanf("%d",&inserted);

  printf("enter the Location of the element to be inserted: ");
  scanf("%d",&loc);

  for(i=nElements-1 ; i>= loc-1 ; i--)
  {
     arr[i+1]=arr[i];
  }

  arr[loc-1]=inserted;
  nElements++;
  for(i=0;i<nElements;i++)
  {
     printf("%d  ",arr[i]);
  }



          return 0;
}
```

EX5:

```
#include <stdio.h>
#include <stdlib.h>

int main()
{
  int i,n,searched,flag=0;

  printf("enter number of elements: ");
  scanf("%d",&n);

  int arr[n];

  printf("enter the elements: ");
```

```
 for(i=0 ; i<n ; i++)
 {
    scanf("%d",&arr[i]);
 }

 printf("enter the element you are searching for: ");
 scanf("%d",&searched);

 for(i=0 ; i<n ; i++)
 {
    if(arr[i] == searched)
    {
       flag =1;
       break;
    }
 }

 if(flag==1)
 {
    printf("number found at the location = %d", i+1);
 }
 else
 {
    printf("Not found");
 }
        return 0;
}
```

HW: Strings

EX1:

```
#include <stdio.h>
#include <stdlib.h>

int main()
{
   char st[100],c;
   int i=0,counter=0;
   puts("enter a string:");
   gets(st);
   puts("enter a character to find frequency:");
   scanf("%c",&c);

   while(st[i] != '\0')
   {
      if(st[i]==c)
      {
         counter++;
      }
      i++;
   }
   printf("frequency of %c = %d",c,counter);

        return 0;
}
```

EX2:

```
#include <stdio.h>
#include <stdlib.h>

int main()
{
   char st[100];
   int i=0;
   puts("enter a string:");
   gets(st);
```

```
    while(st[i]!=0)
    {
       i++;
    }
    printf("the length of the string is %d",i);

          return 0;
}
```

EX3:

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>

int main()
{
    char st[100];
    int i,j,temp;

    puts("enter a string:");
    gets(st);

    i=0;
    j=strlen(st)-1;

    while(i != j)
    {
       temp=st[i];
       st[i]=st[j];
       st[j]=temp;

       i++;
       j--;
    }
    printf("the reverse of string is: %s",st);
```

```
        return 0;
}
```