**/\* GOPIKRISHNA V**

**S3 CSE A**

**52**

**\*/**

**//Program with menu driven sorting**

**#include<stdio.h>**

**#include<stdlib.h>**

**#include<string.h>**

**void linear();**

**void binary();**

**void main()**

**{**

**int sel;**

**start:**

**printf("\n1.Linear Search\n2.Binary Search\n3.Exit\n");**

**printf("Select the type of sorting [1/2/3]\n");**

**scanf("%d",&sel);**

**switch(sel)**

**{**

**case 1:linear();**

**break;**

**case 2:binary();**

**break;**

**case 3:exit(0);**

**break;**

**default:printf("Wrong Input\n");**

**}**

**goto start;**

**}**

**void linear()**

**{**

**int key,arr[50],i,limit;**

**printf("Enter the limit = ");**

**scanf("%d",&limit);**

**printf("Enter the elements\n");**

**for(i=0;i<limit;i++)**

**scanf("%d",&arr[i]);**

**printf("Enter the element to be searched = ");**

**scanf("%d",&key);**

**for(i=0;i<limit;i++)**

**{**

**if(arr[i]==key)**

**{**

**printf("The element found at %d\n\n\n",i+1);**

**}**

**}**

**}**

**void binary()**

**{**

**int key,arr[50],i,limit;**

**printf("Enter the limit = ");**

**scanf("%d",&limit);**

**printf("Enter the elements\n");**

**for(i=0;i<limit;i++)**

**scanf("%d",&arr[i]);**

**printf("Enter the element to be searched = ");**

**scanf("%d",&key);**

**for (int c=0;c<limit-1;c++)**

**{**

**for(int d=0;d<limit-c-1;d++)**

**{**

**if(arr[d]>arr[d+1])**

**{**

**int temp=arr[d];**

**arr[d]=arr[d+1];**

**arr[d+1]=temp;**

**}**

**}**

**}**

**printf("The sorted array [Ascending]\n");**

**for(int k=0;k<limit;k++)**

**{**

**printf(" %d \t",arr[k]);**

**}**

**int low,mid,high;**

**low=0;**

**high=limit-1;**

**mid=(low+high)/2;**

**int flag=0;**

**while(flag==0)**

**{**

**if(arr[mid]==key)**

**{**

**printf("\nThe element found at %d\n\n\n",mid+1);**

**flag=1;**

**}**

**if(key>arr[mid])**

**{**

**low=mid+1;**

**high=limit-1;**

**mid=(low+high)/2;**

**}**

**if(key<arr[mid])**

**{**

**low=0;**

**high=mid-1;**

**mid=(low+high)/2;**

**}**

**}**

**}**

