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//U-1L

#include<stdio.h>

#define L 10

//Array Sorting

main(){

//declaring the variables and the array with L elements

int a[L];

int i, j, k, n, m, temp, choice;

//user will input the L elements inside the array with this for loop

printf("enter positive integers \n");

for(n=0;n<L;n++){

scanf("%d",&a[n]);

}

putchar('\n');

//this loop will print the elements inside the array

printf("The array has the numbers:\n");

for(m=0;m<L;m++)

printf("%d ",a[m]);

putchar('\n');

//switch-case to give the user a choice of what loop to use

printf("what kind of sorting you want to do?\n");

printf("[1]Bubble Sort\n");

printf("[2]Selection Sort\n");

printf("[3]Insertion Sort\n");

scanf("%d",&choice);

switch(choice){

case 1://case 1 is the Bubble sorting

for(i=0;i<L-1;i++){

for(j=0;j<L-i-1;j++){

if(a[j]>a[j+1]){

temp = a[j];

a[j]=a[j+1];

a[j+1]=temp;

}

putchar('\n');

for(k=0;k<L;k++)

printf("%d ",a[k]);//will print the result of each iteration

}

}

putchar('\n');

break;

case 2://case 2 is the Selection Sorting

for(i=0;i<L-1;i++){

for(j=i+1;j<L;j++){

if(a[i]>a[j]){

temp=a[i];

a[i]=a[j];

a[j]=temp;

}

}

putchar('\n');

for(k=0;k<L;k++)

printf("%d ",a[k]);//will print the result of the sorting

}

putchar('\n');

break;

case 3://case 3 is the Insertion sorting

for(i=1;i<L;i++){

for(j=i;j>0;j--){

if(a[j]<a[j-1]){

temp=a[j];

a[j]=a[j-1];

a[j-1]=temp;

}

else break;

}

putchar('\n');

for(k=0;k<L;k++)

printf("%d ",a[k]);//will print the result of the sorting

}

putchar('\n');

break;

default:

putchar('\n');

printf("Invalid Input\n");//if the entered choice is not in the menu

break;

}

putchar('\n');

printf("Thank you and goodbye!\n");//a goodbye message

}

//END Of PROGRAM