**TITLE 19**

Write a C program that takes an array and returns a new array with unique elements of the first array

**OBJECTIVE:**

By the end of this activity we will be able to find unique elements of an array and using these form a new array.

**PROBLEM STATEMENT:**

In this problem we aim to input the size of the array and input the numbers of this array and return a new array with the unique elements of the array. Input from user:

Enter size of array:

Enter elements in array:

Once the data is collected and stored, the elements are sorted in an array.

**ALGORITHM:**

START

Define variables: size,I,j,count

INPUT: Read the input from keyboard

COMPUTATION: All the elements are entered in an array

DISPLAY: Prints the unique elements

STOP

**PROGRAM:**

#include <stdio.h>

#define MAX\_SIZE 100

int main()

{

int arr[MAX\_SIZE], freq[MAX\_SIZE];

int size, i, j, count;

/\* Input size of array and elements in array \*/

printf("Enter size of array:\n");

scanf("%d", &size);

printf("Enter elements in array:\n");

for(i=0; i<size; i++)

{

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

freq[i] = -1;

}

/\* Find frequency of each element \*/

for(i=0; i<size; i++)

{

count = 1;

for(j=i+1; j<size; j++)

{

if(arr[i] == arr[j])

{

count++;

freq[j] = 0;

}

}

if(freq[i] != 0)

{

freq[i] = count;

}

}

/\* Print all unique elements of array \*/

printf("Unique elements in the array are: ");

for(i=0; i<size; i++)

{

if(freq[i] == 1)

{

printf("%d ", arr[i]);

}

}

return 0;

}

**CONCLUSION:**

The simulation of the above C program helped me to understand how we can form a new array with unique elements of an array.

**OUTPUT:**

Enter size of array:

6

Enter elements in array:

78

54

34

54

32

34

Unique elements in the array are: 78 32