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Gr - section

4ALI9IS045

Write a C program to count distinct elements in an array

Algorithm

Step 1 → Start

Step 2 → Input size, i, j, Count

Step 3 → for (i=0; i< size; i++)
{
  freq [i] = -1;
}

Step 4 → for (i=0; i < size; i++)
{
  Count = 1;
  for (j=1; j < size; j++)
  {
    if (arr[i] == arr[j])
    {
      count ++;
      freq [j] = 0;
    }
    if (freq [i] != 0)
    {
      freq [i] = count;
    }
  }
}

Step 5 → output distinct elements in the array are

Step 6 → for (i=0; i< size; i++)
{
  if (freq [i] == 1)
  { output
  } }

Flowchart:-

```
              ( Start )
                 │
                 ▼
    ┌─────────────────────────┐
    │ Input size, i, j, count │
    └─────────────────────────┘
                 │
                 ▼
    ╱─────────────────────────╲
    ╲  for (i=0; i<size; i++)  ╱
                 │
                 ▼
       ┌──────────────────┐
       │   freq[i] = -1   │
       └──────────────────┘
                 │
                 ▼
    ╱─────────────────────────╲
    ╲  for (i=0; i<size; i++)  ╱
                 │
                 ▼
       ╱─────────────────╲
       ╲ if arr[i]=arr[j] ╱
                 │
                 ▼
       ┌──────────────────┐
       │    Count++       │
       │    freq[j]=0     │
       └──────────────────┘
                 │
                 ▼
       ╱─────────────────╲
       ╲ if (freq[i]!=0)  ╱
                 │
                 ▼
       ┌──────────────────┐
       │  freq[i]= count  │
       └──────────────────┘
                 │
                 ▼
      ╱────────────────────╲
     ╱ o/p distinct elements ╲
     ╲ in the array arr      ╱
                 │
                 ▼
    ╱─────────────────────────╲
    ╲  for (i=0; i<size; i++)  ╱
                 │
                 ▼
          ╱──────────╲
          ╲ if (freq[i] ╱
          ╱   =1)     ╲
                 │
                 ▼
          ╱──────────╲
         ╱  output    ╲
                 │
                 ▼
              ( Stop )
```