6.SORTING NUMBERS BASED ON WEIGHT IN ASCENDING ORDER

Aim:

To write a c program to sort the numbers based on the weight in the ascending order.

Algorithm:

Step 1:Start the program.

Step 2:Get the elements in an array.

Step 3:Calculate its weight.

Step 4:Check for the given solution.

       5 for perfect cube.

       4 if it is multiple of 4 and divisible by 6

       3 if it is a prime number

Step 5:Stop the program.

Program coding:

```
#include<stdio.h>
#include<conio.h>
#include<math.h>
void main()
{
int narr[50],warr[50],nelem,sq,i,j,t;
clrscr();
printf("\n enter the no of elements in arry:");
scanf("%d",&nelem);
for(i=0;i<nelem;i++)
{printf("\n enter the elements");
scanf("%d",&narr[i]);
}
for(i=0;i<nelem;i++)
{for(j=i+1;j<nelem;j++)
{t=narr[i];
narr[i]=narr[j];
```

```c
narr[j]=t;
}}
for(i=0;i<nelem;i++)
{warr[i]=0;
if(percube(narr[i]))
warr[i]=warr[i]+5;
if(narr[i]%4==0&&narr[i]%6==0)
warr[i]=warr[i]+4;
if(prime(narr[i]))
warr[i]=warr[i]+3;
}
for(i=0;i<nelem;i++)
{
 printf("<%d,%d>",narr[i],warr[i]);}
 getch();}
 int prime(int num)
 {
 int flag=1,i;
 for(i=2;i<num/2;i++)
 {
 if(num%i==0)
 flag=0;
 break;}return flag;}
 int percube(int num)
 {int i,flag=0;
 for(i=0;i<num/2;i++)
 {
 if((i*i*i)==num)
 {flag=1;
 break;
 }return flag;
```

```
}}
```

Output:

```
enter the no of elements in arry:5

enter the elements8

enter the elements11

enter the elements216

enter the elements24

enter the elements34
<34,0><24,4><216,4><11,3><8,0>
```