Practical -7

Aim: Write a program to implement making change problem using greedy algorithm.

Code:

```java
import java.util.Scanner;
public class mc
{
    void sort(int a[])
    {
        int n=a.length;
        for(int i=0; i < n; i++)
        {
            for(int j=1; j < (n-i); j++)
            {
                if(a[j-1] > a[j])
                {
                    int temp = a[j-1];
                    a[j-1] = a[j];
                    a[j] = temp;
                }

            }
        }
    }
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);
        mc m =new mc();
        System.out.println("Enter number of elements:-");
        int n=sc.nextInt();
        int a[]=new int[n];
        System.out.println("Enter elements:-");
        for(int i=0;i<n;i++)
        a[i]=sc.nextInt();

        System.out.println("Enter value of Total Weight");
        int w=sc.nextInt();
        n-=1;
        m.sort(a);

        // for(int i=0;i<a.length;i++)
        // System.out.println(a[i]);
        int total=0;
        for(int i=n;i>=0;)
        {
            if(w>0)
            {
```

```
            if(a[i]>w)
            {
               i--;
               continue;
            }
            else
            {
               w-=a[i];
               total++;
               System.out.println(a[i]+" Selected. Weight left:- "+w);
            }
         }
         else if(w==0)
         {
            break;
         }
      }
      System.out.println("Total value selected:- "+total);
      sc.close();
   }
}
```

OUTPUT:

```
PS C:\VSCode\DAA> cd "c:\VSCode\DAA\" ; if ($?) { javac mc.java } ; if ($?) { java mc }
Enter number of elements:-
5
Enter elements:-
1
2
5
8
10
Enter value of Total Weight
30
10 Selected. Weight left:- 20
10 Selected. Weight left:- 10
10 Selected. Weight left:- 0
Total value selected:- 3
PS C:\VSCode\DAA>
```