

## Practical – 7

**Implement Program for “Making Change” using Greedy design technique.**

```
#include<stdio.h>
#include<malloc.h>
int * sort(int *d,int n) {
    int i,j,k;
    for(i=0; i<n-1; i++) {
        for(j=i+1; j<n; j++) {
            if(d[i]<d[j]) {
                k=d[i];
                d[i]=d[j];
                d[j]=k;
            }
        }
    }
}
int main() {
    printf("21012021003_AMIT GOSWAMI \n");
    int amt,*d,*ans,n,i,flag=0,total=0;
    printf("Enter no of coins:-\n");
    scanf("%d",&n);
    d=(int *)malloc(n*sizeof(int));
    ans=(int *)malloc(n*sizeof(int));
    for(i=0; i<n; i++) {
        printf("Enter value of coin no. %d:-\n",(i+1));
        scanf("%d",&d[i]);
    }
    sort(d,n);
    printf("enter amount to get change:-\n");
    scanf("%d",&amt);
    i=0;
    while(amt>0) {
        while(d[i]<=amt) {
            ans[i]++;
            amt=amt-d[i];
            total++;
        }
        i++;
        if(amt==0) {
            break;
        }
        if(d[n-1]>amt) {
            flag++;
            break;
        }
    }
    if(flag>0) {
        printf("unsuccessful\n");
    }
    else {
        printf("%d coins used.\n",total);
    }
}
```

```
for(i=0; i<n; i++) {  
    printf("%d coins used of %d .\n",ans[i],d[i]);  
} }
```

```
Enter no of coins:-  
4  
Enter value of coin no. 1:-  
10  
Enter value of coin no. 2:-  
20  
Enter value of coin no. 3:-  
30  
Enter value of coin no. 4:-  
40  
enter amount to get change:-  
100  
3 coins used.  
2 coins used of 40 .  
0 coins used of 30 .  
1 coins used of 20 .  
0 coins used of 10 .  
.
```