LAB-10

Knap sack-

CODE-

```
#include<stdio.h>
int  n,m,o[10],p[10],v[10][10],w[10],i,j,op,ob[10];
int max(int A,int B)
{

        if(A>B)
        return A;
        else
        return B;
}
int knapsack()
{
        for(i=0;i<=n;i++)
        {
                for(j=0;j<=m;j++)
                {
```

```
        if(i==0|| j==0)
        {
                v[i][j]=0;
                }
                else
                if(w[i]>j)
                {
                        v[i][j]=v[i-1][j];
                        }
                        else
                        if(w[i]<=j)
                        {
                                v[i][j]=max(v[i-1][j],v[i-1][j-w[i]]+p[i]);
                                }



        }



}
```

```
return v[i-1][j-1];
}

void objects()
{  int k=0;
i=n;
j=m;
printf("the objects are  ");
        while(i>=0&&j>=0)
        {
                if(v[i][j]!=v[i-1][j])
                {
                        //ob[k]=i;
                //      k++;
                printf("%d  ",i);

                        j=j-w[i];

                }
```

```
            i=i-1;
        }
}
void main()
{
        printf("Enter the number of objects\n");
        scanf("%d",&n);
        printf("Enter the  object number and their weight and profit\n");
        for(i=1;i<=n;i++)
        {
            scanf("%d%d%d",&o[i],&w[i],&p[i]);
        }
        printf("Enter the capacity of knapsack\n");
        scanf("%d",&m);
        knapsack();
        for(i=0;i<=n;i++)
        {
            for(j=0;j<=m;j++)
```

```
            {
                printf("%d ",v[i][j]);
            }
            printf("\n");
        }
        printf("The optimal solution is %d  \n",v[n][m]);
        objects();

}
```

OUTPUT-