Hints for Programming Assignment

We want to maintain a multy set
LinkedList$\{1, 2, 2, 2, 3, 3, 3, 4, 5, 5, 5, 6, 7, 8, 10\}$
$ABS(x)-$ returns absolute value of x.
$FindMax(L)-$ returns the maximum element in the List L.
$Insert(L, x)-$ Inserts x into the List L.
$Delete(L, x)-$Deletes x from the List L.
$Search(L, x)-$ returns true if $x \in L$ else returns false.

Programming Assignment

$D = \{1, 2, 2, 2, 3, 3, 3, 4, 5, 5, 5, 6, 7, 8, 10\}$

```
bool ProAss1(X,D,n){
         X[0]=0;X[n-1]=FindMax(D);
        Delete(D,FindMax(D));
        X[n-2]=FindMax(D);
        Delete(D,FindMax(D));
         if (Search(D,X[n-1]-X[n-2]) {
                  Delete(D,X[n-1]-X[n-2]);
                  return Try(X,D,n,1,n-3);}
         else return false;
}
```

Programming Assignment

```
$D = \{1, 2, 2, 2, 3, 3, 3, 4, 5, 5, 5, 6, 7, 8, 10\}$
bool Try(X,D,n,left,right){
bool found =false; if(D is empty) return true;
max = FindMax(D); if(Possible(D,max,left,right)){
         X[right]=max;
        for(i=0;i<left;++i) Delete(D,ABS(X[i]-X[right]));
        for(i=right+1;i<n;++i) Delete(D,ABS(X[i]-X[right]));
        found=Try(X,D,n,left,right-1);
         if (found==false) {
        for(i=0;i<left;++i) Insert(D,ABS(X[i]-X[right]));
        for(i=right+1;i<n;++i) Insert(D,ABS(X[i]-X[right]));}
}
if(Possible(D,X[n-1]-max,left,right) & & found==false){
         X[left]=X[n-1]-max;
        for(i=0;i<left;++i) Delete(D,ABS(X[i]-X[left]));
        for(i=right+1;i<n;++i) Delete(D,ABS(X[i]-X[left]));
        found=Try(X,D,n,left+1,right);
         if (found==false) {
        for(i=0;i<left;++i) Insert(D,ABS(X[i]-X[left]));
        for(i=right+1;i< n;++i) Insert(D,ABS(X[i]-X[left]));}
}
return found;
}
```