\*Greedy is one of the fastest algorithms  
\*using greedy will solve decision problems  
\*Greedy always makes locally best choice and assume its going to give globally optimal solution.  
\*hint-most of the greedy method questioning pattern is finding min or finding max

greedy strategy  
Greedy (Input)  
begin  
while (solution not complete) do  
select the best element x in the remaining input I;  
put x next in the output;  
remove the x from remaining input;  
end while  
end

**SELECTION SORT**: We find the smallest element in each pass from i to n and we swap it.  
greedy method is used for this sorting because we select min element from the remaining inputs  
  
SELECTION SORT CODE  
void selection(int a[],int n){  
for(int i=0;i<n-1;i++){  
int mi=i;  
for(int j=i+1;j<n;j++){  
if(a[mi]>a[j]) mi=j;  
}  
swap(a[i],a[mi]);  
}  
}

Coin change : a bag with all coins as infinity we need to get the amount which was given in the question Ex: we have 1 2 5 10 20 we need to get 78 the coins should be minimum.

step1-decide the best element  
step2-arrange them in ascending or descending based on the question  
step3-until the condition satisfies take the best element and push it to the question  
for decreasing order:sort(a,a+n,greater<int>());

code:  
include<iostream>  
using namespace std;  
int main()  
{  
int n,amt;cin>>n>>amt;  
int a[n];for(int i=0;i<n;i++)  
cin>>a[i];  
int c=0,i=0;  
while(i<n&&amt>0){  
int x=amt/a[i];  
amt-=x\*a[i];  
c+=x;  
i++;  
}  
if(amt==0)  
cout<<c;  
else cout<<”-1”;  
}  
  
time complexity:O(N)+O(N)+O(NLOGN)=O(NLOGN)  
  
  
ASSINGMENT:1)PATH SUM 2  
 2)PATHSUM 3  
 3)BINARY TREE MAXIMUM PATH SUM