```
rm(list = ls())
exit_status=0
count_Pivot=0
dict=scan(file="~/Downloads/Coursera/part1TestCases/unitTests/dict1")
i = 1 # iterator for dict
m = dict[i] # number of basic variables
i = i + 1
#print("m = number of basic variables")
#print(m)
n = dict[i] # number of non-basic variables
#print("n = number of non-basic variables")
#print(n)
i=i+1
B=dict[i:(i+m-1)]
#print("B = Basic Vairables Indices")
#print(B)
i=i+m
N=dict[i:(i+n-1)]
#print("N = non basic variables Indices")
#print(N)
i=i+n
b=dict[i:(i+m-1)]
#print("b = constant co-efficients")
#print(b)
i=i+m
#print("A Matrix")
A=array(data=0,dim=c(m,n))
for(j in 1:m)
{
  A[j,]=dict[i:(i+n-1)]
#  print(A[j,])
  i=i+n
}
z0 = dict[i] # number of non-basic variables
#print("z0= Current Ojective Value")
#print(z0)
i=i+1
C=dict[i:(i+n-1)]
#print("C = Objective row co-efficients")
#print(C)
objective_Coefficient=array(data=0,dim=(n+m))
for(i in 1:n){
  objective_Coefficient[N[i]]=C[i]
}
#print("objective_Coefficient)
#print(objective_Coefficient)
while(exit_status==0){
  temp=min(b)
  if(temp<0){
    exit_status=1
    stop("Problem is Infeasible")
  }
  #print("Entering variable analysis")
  # maximum ( Cj > 0 ) choose Nj
  temp=max(C)
  if(temp<=0){
    print("Dictionary is final. STOP")
    exit_status=3
    stop("STOP")
  }
  for(i in 1:n){
    if(C[i]>0){
      entering_Variable=i
      break
    }
  }
#  print("Entering Variable is ")
#  print(N[entering_Variable])
  #print("leaving variable analysis")
  bound=array(data=Inf,dim=m)
  for(i in 1:m){
    j=entering_Variable
```

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    if(A[i,j]<0)
    {
      bound[i]=-b[i]/A[i,j]
    }
  }
  leaving_Variable=which.min(bound)
  if(bound[leaving_Variable]==Inf){
      stop("Problem is Unbounded")
      exit_status=2
      return
  } else{
#    print("Leaving Variable is")
#    print(B[leaving_Variable])
  }
  #print("Pivoting")
  pivot_Element=A[leaving_Variable,entering_Variable]
  #print("dividing leaving variable row by pivot element")
  A[leaving_Variable,]=A[leaving_Variable,]/(-pivot_Element)
  A[leaving_Variable,entering_Variable]=1/(pivot_Element)
  #print("dividing leaving variable RHS by pivot element")
  b[leaving_Variable]=b[leaving_Variable]/(-pivot_Element)
  #print("replacing entering value in A,b matrix")
  for(j in 1:m){
    if(j!=leaving_Variable){
      temp=A[j,entering_Variable]
      A[j,]=A[j,]+temp*A[leaving_Variable,]
      A[j,entering_Variable]=temp/pivot_Element
      b[j]=b[j]+temp*b[leaving_Variable]
    }
  }
  temp=N[entering_Variable]
  N[entering_Variable]=B[leaving_Variable]
  B[leaving_Variable]=temp
  temp=C
  temp[entering_Variable]=0
  z0=z0+C[entering_Variable]*b[leaving_Variable]
  C=temp+C[entering_Variable]*A[leaving_Variable,]
  print("C")
  print(C)
  objective_Coefficient=array(data=0,dim=(n+m))
  for(i in 1:n){
    objective_Coefficient[N[i]]=C[i]
  }
  for(i in 1:m){
    z0=z0+objective_Coefficient[B[i]]*b[i]
  }
  print("A")
  print(A)
  print("b")
  print(b)
  print("B = Basic Vairables Indices")
  print(B)
  print("N = non basic variables Indices")
  print(N)
  print("C")
  print(C)
  print("objective co-efficient")
  print(objective_Coefficient)
  print("solution of dictionary")
  print(z0)
  count_Pivot=count_Pivot+1
}
print("count_Pivot")
print(count_Pivot)
```