```
clear all
clc
%Variables={'x_1','x_2','s_1','s_2','A_2','A_3','sol'};
Variables={'x_1','x_2','x_3','s_1','s_2','A_1','A_2','sol'};
OVariables={'x_1','x_2','x_3','s_1','s_2','sol'};
OrigC=[-7.5 3 0 0 0  -1 -1 0]
%OrigC=[-4 -5 0 0 -1 -1 0]
%Info=[3 1 1 0 0 0 27; 3 2 0 -1 1 0 3; 5 5 0 0 0 1 60]
Info =  [3 -1 -1 -1 0 1 0 3; 1 -1 1 0 -1 0 1 2]
%BV=[3 5 6]
BV = [6 7];
%PHASE-1
fprintf('** PHASE-1 ** \n')
Cost=[0 0 0 0 0 -1 -1 0]
A=Info;
StartBV=find(Cost<0);
ZjCj=Cost(BV)*A-Cost;
RUN= true;
while RUN
ZC=ZjCj(1:end-1);
if any(ZC<0)
fprintf(' The current BFS is not optimal\n')
[ent_col,pvt_col]=min(ZC);
fprintf('Entering Col =%d \n' , pvt_col);
sol=A(:,end);
Column=A(:,pvt_col);
if Column<=0
error('LPP is unbounded');
else
for i=1:size(A,1)
if Column(i)>0
ratio(i)=sol(i)./Column(i);
else
ratio(i)=inf;
end
end
[MinRatio,pvt_row]=min(ratio);
fprintf('leaving Row=%d \n', pvt_row);
end
BV(pvt_row)=pvt_col;
pvt_key=A(pvt_row,pvt_col);
A(pvt_row,:)=A(pvt_row,:)./ pvt_key;
for i=1:size(A,1)
if i~=pvt_row
A(i,:)=A(i,:)-A(i,pvt_col).*A(pvt_row,:);
end
end
ZjCj=ZjCj-ZjCj(pvt_col).*A(pvt_row,:)
ZCj=[ZjCj;A]
TABLE=array2table(ZCj);
TABLE.Properties.VariableNames(1:size(ZCj,2))=Variables
BFS(BV)=A(:,end)
else
RUN=false;
fprintf(' Current BFS is Optimal \n');
fprintf('Phase End \n')
BFS=BV;
end
```

```
end
```