LAB 1

```
AIM:-To find the dfs and bfs by using adjacent matrix
Code:-
#include<stdio.h>
int q[20],top=-1,front=-1,rear=-1,a[20][20],vis[20],stack[20];
int delete();
void add(int item);
void bfs(int s,int n);
void dfs(int s,int n);
void push(int item);
int pop();
void main()
int n,i,s,ch,j;
char c,dummy;
printf("ENTER THE NUMBER VERTICES");
scanf("%d",&n);
for(i=1;i\leq n;i++)
for(j=1;j<=n;j++)
printf("ENTER 1 IF %d HAS A NODE WITH %d ELSE 0 ",i,j);
scanf("%d",&a[i][j]);
}
printf("THE ADJACENCY MATRIX IS\n");
for(i=1;i<=n;i++)
for(j=1;j<=n;j++)
printf(" %d",a[i][j]);
printf("\n");
do
for(i=1;i \le n;i++)
vis[i]=0;
printf("\nMENU");
```

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printf("\n1.B.F.S");
printf("\n2.D.F.S");
printf("\nENTER YOUR CHOICE");
scanf("%d",&ch);
printf("ENTER THE SOURCE VERTEX:");
scanf("%d",&s);
switch(ch)
{
case 1:bfs(s,n);
break;
case 2:
dfs(s,n);
break;
}
printf("DO U WANT TO CONTINUE(Y/N) ? ");
scanf("%c",&dummy);
scanf("%c",&c);
}while((c=='y')||(c=='Y'));
}
void bfs(int s,int n)
{
int p,i;
add(s);
vis[s]=1;
p=delete();
if(p!=0)
printf(" %d",p);
while(p!=0)
for(i=1;i\leq n;i++)
if((a[p][i]!=0)&&(vis[i]==0))
add(i);
vis[i]=1;
p=delete();
if(p!=0)
printf(" %d ",p);
for(i=1;i \le n;i++)
if(vis[i]==0)
bfs(i,n);
}
```

```
void add(int item)
if(rear==19)
printf("QUEUE FULL");
else
if(rear==-1)
q[++rear]=item;
front++;
}
else
q[++rear]=item;
int delete()
{
int k;
if((front>rear)||(front==-1))
return(0);
else
k=q[front++];
return(k);
}
}
void dfs(int s,int n)
{
int i,k;
push(s);
vis[s]=1;
k=pop();
if(k!=0)
printf(" %d ",k);
while(k!=0)
for(i=1;i<=n;i++)
if((a[k][i]!=0)&&(vis[i]==0))
push(i);
vis[i]=1;
}
```

```
k=pop();
if(k!=0)
printf(" %d ",k);
for(i=1;i<=n;i++)
if(vis[i]==0)
dfs(i,n);
void push(int item)
if(top==19)
printf("Stack overflow ");
else
stack[++top]=item;
int pop()
{
int k;
if(top==-1)
return(0);
else
{
k=stack[top--];
return(k);
}
}
```

Out put:-

```
"C:\Users\Admin\Desktop\1BM21CS059\2ND ADA LAB\LAB2\bin\Debug\LAB2.exe"
ENTER THE NUMBER VERTICES 4
ENTER 1 IF 1 HAS A NODE WITH 1 ELSE 0 0
ENTER 1 IF 1 HAS A NODE WITH 2 ELSE 0 1
ENTER 1 IF 1 HAS A NODE WITH 3 ELSE 0 1
ENTER 1 IF 1 HAS A NODE WITH 4 ELSE 0 1
ENTER 1 IF 2 HAS A NODE WITH 1 ELSE 0 0
ENTER 1 IF 2 HAS A NODE WITH 2 ELSE 0 0
ENTER 1 IF 2 HAS A NODE WITH 3 ELSE 0 0
ENTER 1 IF 2 HAS A NODE WITH 4 ELSE 0 1
ENTER 1 IF 3 HAS A NODE WITH 1 ELSE 0 0
ENTER 1 IF 3 HAS A NODE WITH 2 ELSE 0 0
ENTER 1 IF 3 HAS A NODE WITH 3 ELSE 0 0
ENTER 1 IF 3 HAS A NODE WITH 4 ELSE 0 0
ENTER 1 IF 4 HAS A NODE WITH 1 ELSE 0 0
ENTER 1 IF 4 HAS A NODE WITH 2 ELSE 0 0
ENTER 1 IF 4 HAS A NODE WITH 3 ELSE 0 1
ENTER 1 IF 4 HAS A NODE WITH 4 ELSE 0 0
THE ADJACENCY MATRIX IS
```

1.B.F.S
2.D.F.S
ENTER YOUR CHOICE1
ENTER THE SOURCE VERTEX :1
1 2 3 4 DO U WANT TO CONTINUE(Y/N) ? y

1.B.F.S
2.D.F.S
ENTER YOUR CHOICE2
ENTER THE SOURCE VERTEX :1
1 4 3 2 DO U WANT TO CONTINUE(Y/N) ?

Notes:-

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MENU

MENU

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LAB-2
        To find out the PFS and BFS by asing adjacend matrix.
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 # include < sddio. h>
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 int delegeos;
                                  1 ( C) SO WAY LOW END ON COURS CHOICE ( ) .
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  void 645 cinds ju4 w);
  void des cints, intw.
  void push cintitem);
  int pop co;
  void maine)
   Eint wi, s, enj;
   char cy dammy;
   print ( c'enser tu number vertices");
   scarf (".1.2", 6 m);
                                                         : Hosyd
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      Paring & Enter 1 if 1.9 mar a Mode with 1.9 Else 0", i, i);
    scar ( 2" 1. 2" ba ci)[1]);
   Point en The Adjaconcy materix is m").
      points el 1.2", atillia;
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if col =0) paint[c".1.2", P); for get year will (() = 0) { par (i =1; i < = n; i + +) (costacio i so ppenie cio se so) add cis; viseizel; p= deletecy; if Cb; =0) bagny (611.1.91, 6); Parciel; icen; ix+). (0== Cissing) pre ci'ns; void odd civil item if crear == 19) point fer Queux full"); else if crean = -1) of Extreord = Item; OC+ +NEONZ Ely Emi

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   ind K;
 if CC front > reard 11 c front = = -1)).
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 netannow;
                                                              if 6.406 = = 10)
 9219
                                                             paint ( c" stack !
  K = 91 front + +3;
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vois age club e, i utu)
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Ks. bobcs;
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bount 6,1 16).
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 larcieilicenlith
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                                                               enter 1 If 2
   push ci);
vis ci);
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                                                               Enter 1 2 /
                                                              The ADJACENO
 K= popc);
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 if c10: =0
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                                                                  0000
 Printfe" 1.4" K);
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