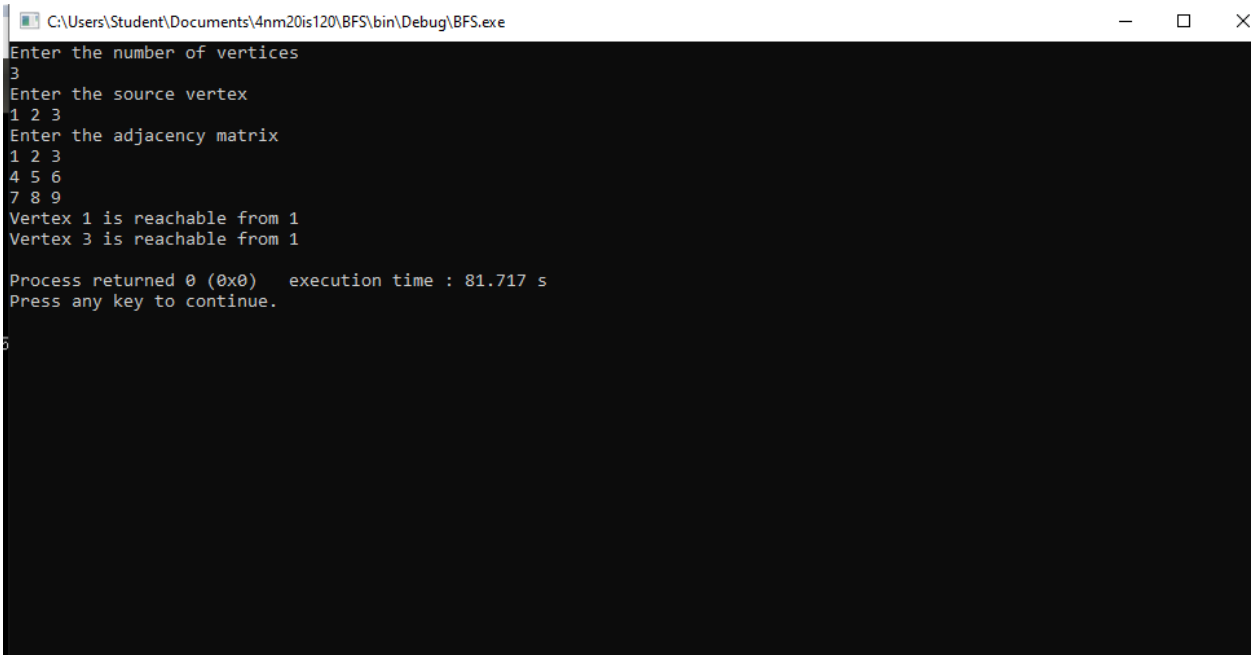
//C program to perform Breadth First Search

```
#include <stdio.h>
#include <stdlib.h>
#include<time.h>
int q[10],n,s[10],a[10][10];
void bfs(int source)
{int f,r, v,u;
   f=r=u=v=1;
   q[u]=source;
   s[source]=1;
   while(f<=r)
   {
      u=q[f++];
      for(v=1;v<=n;v++)
      {
         if(a[u][v]==1 && s[v]==0)
         {
            s[v]=1;
            q[++r]=v;
         }
      }
   }
}
int main()
{
   int i,j,source;
   printf("Enter the number of vertices\n");
   scanf("%d",&n);
```

```
    printf("Enter the source vertex\n");
    scanf("%d",&source);
    printf("Enter the adjacency matrix\n");
    for(i=1;i<=n;i++)
    {
        for(j=1;j<=n;j++)
        {
            scanf("%d",&a[i][j]);
        }
    }
    for(i=1;i<=n;i++)
        s[i]=0;
    bfs(source);
    for(i=1;i<=n;i++)
    {
        if(s[i]==1)
            printf("Vertex %d is reachable from %d\n",i,source);
    }
}
```

Output:


C:\Users\Student\Documents\4nm20is120\BFS\bin\Debug\BFS.exe
Enter the number of vertices
3
Enter the source vertex
1 2 3
Enter the adjacency matrix
1 2 3
4 5 6
7 8 9
Vertex 1 is reachable from 1
Vertex 3 is reachable from 1
Process returned 0 (0x0)   execution time : 81.717 s
Press any key to continue.