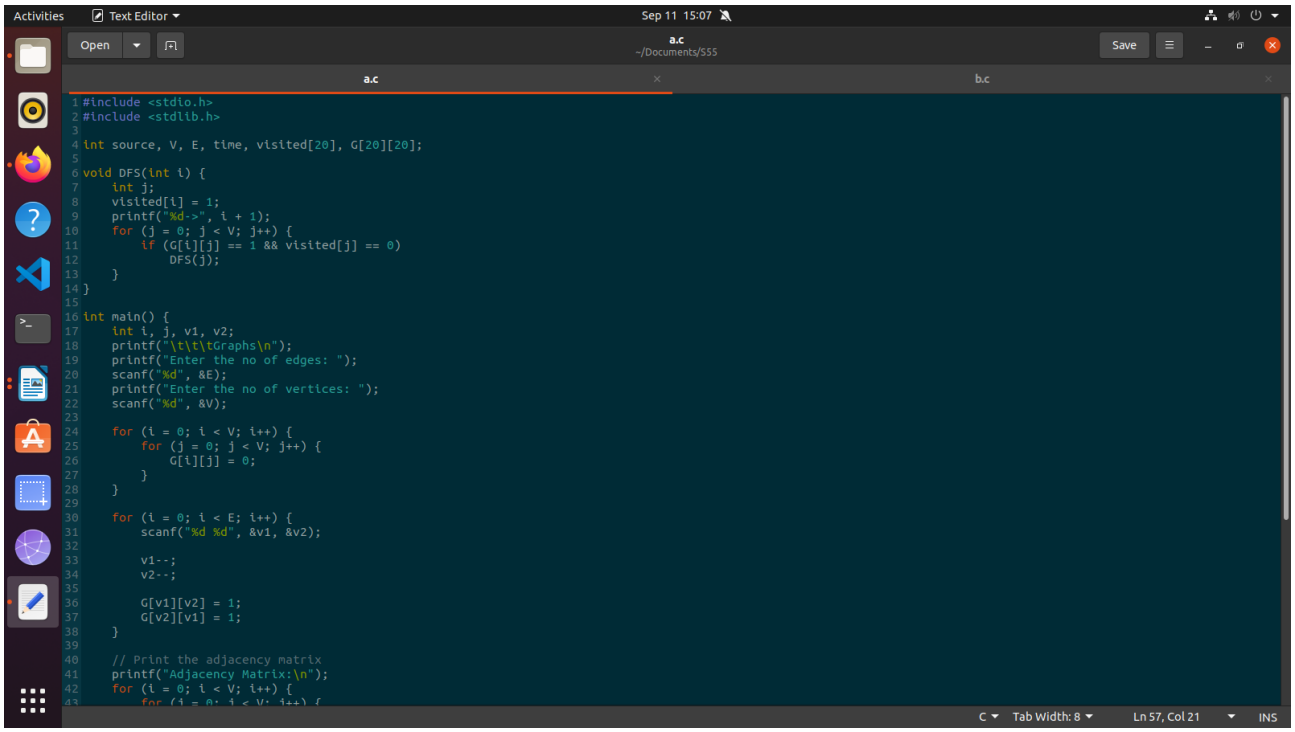
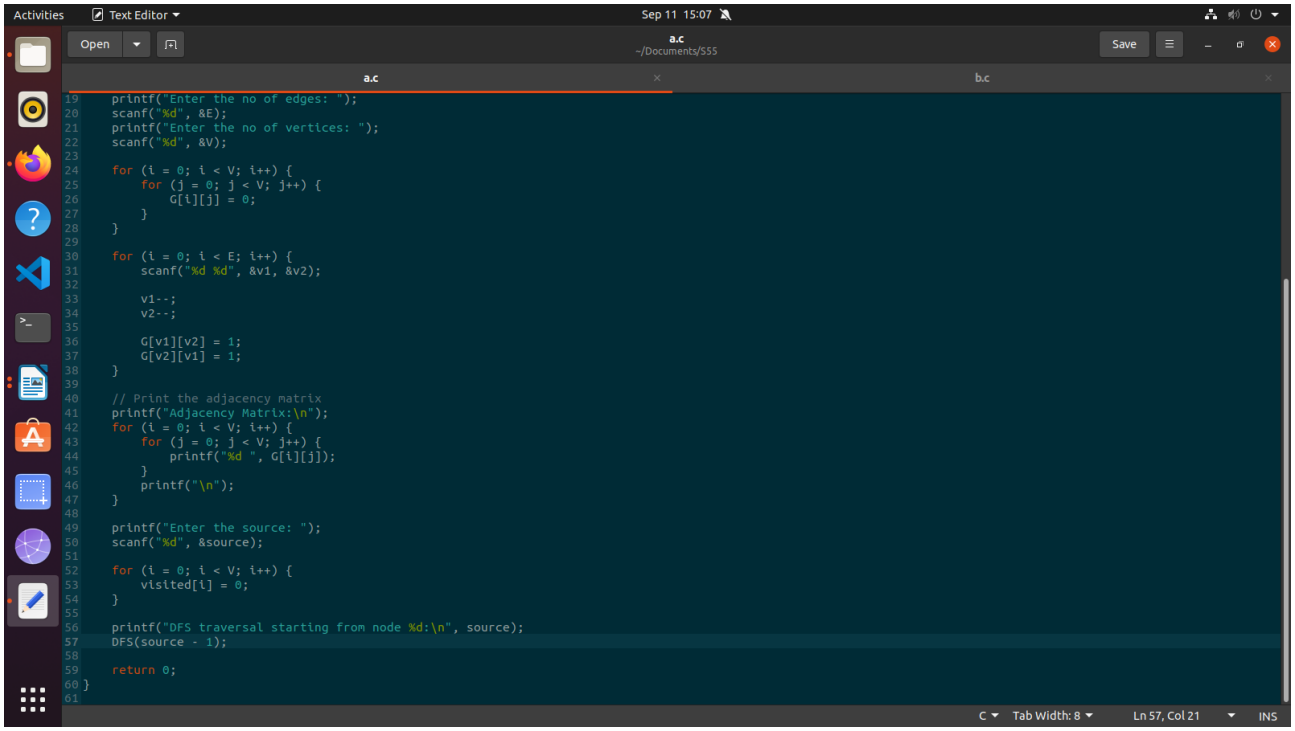
Name: ShreeGanesh Vishwakrma Roll No.: 65

Experiment No. 7

Program:

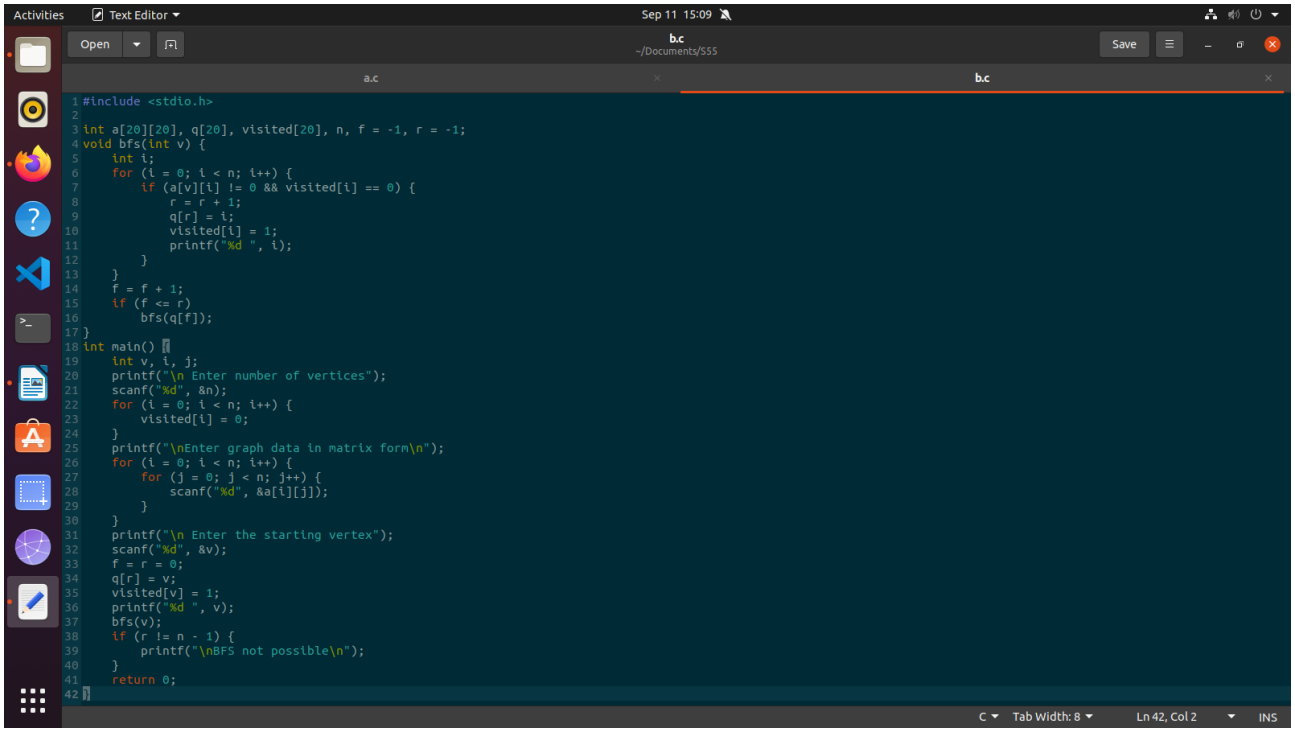




Output:

```
itl4@22DL407:~$ gedit exp9.c
^C
itl4@22DL407:~$ gcc exp9.c
itl4@22DL407:~$ ./a.out
                        Graphs
Enter the no of edges:8
Enter the no of vertices:9
Enter the edges (format: V1 V2) : 1 2
Enter the edges (format: V1 V2) : 8 3
Enter the edges (format: V1 V2) : 7 5
Enter the edges (format: V1 V2) : 1 4
Enter the edges (format: V1 V2) : 6
8
Enter the edges (format: V1 V2) : 1 6
Enter the edges (format: V1 V2) : 7 2
Enter the edges (format: V1 V2) : 1 0
 0  1  0  1  0  1  0  0  0
 0  0  0  0  0  0  0  0  0
 0  0  0  0  0  0  0  0  0
 0  0  0  0  0  0  0  0  0
 0  0  0  0  0  0  0  0  0
 0  0  0  0  0  0  0  1  0
 0  1  0  0  1  0  0  0  0
 0  0  1  0  0  0  0  0  0
 0  0  0  0  0  0  0  0  0
Enter the source: 7
itl4@22DL407:~$
```

Program:




```c
#include <stdio.h>

int a[20][20], q[20], visited[20], n, f = -1, r = -1;
void bfs(int v) {
    int i;
    for (i = 0; i < n; i++) {
        if (a[v][i] != 0 && visited[i] == 0) {
            r = r + 1;
            q[r] = i;
            visited[i] = 1;
            printf("%d ", i);
        }
    }
    f = f + 1;
    if (f <= r)
        bfs(q[f]);
}
int main() {
    int v, i, j;
    printf("\n Enter number of vertices");
    scanf("%d", &n);
    for (i = 0; i < n; i++) {
        visited[i] = 0;
    }
    printf("\nEnter graph data in matrix form\n");
    for (i = 0; i < n; i++) {
        for (j = 0; j < n; j++) {
            scanf("%d", &a[i][j]);
        }
    }
    printf("\n Enter the starting vertex");
    scanf("%d", &v);
    f = r = 0;
    q[r] = v;
    visited[v] = 1;
    printf("%d ", v);
    bfs(v);
    if (r != n - 1) {
        printf("\nBFS not possible\n");
    }
    return 0;
}
```

Output:

```
itl4@22DL407:~$ gedit exp9.1.c
^C
itl4@22DL407:~$ gcc exp9.1.c
itl4@22DL407:~$ ./a.out

 Enter number of vertices5

Enter graph data in matrix form
0 1 0 0 1
1 0 1 1 1
0 1 0 1 0
0 1 1 0 1
1 1 0 1 0

 Enter the starting vertex3
31240
itl4@22DL407:~$ gedit exp9.1.c
```