

Lab prog - 9a) Write a program to traverse a graph using BFS method.

code :

```
#include <stdio.h>
```

```
int graph [20] [20], visited [20], n;
```

```
void BFS (int start) {
```

```
    int queue [20], front = 0, rear = 0;
```

```
    visited [start] = 1;
```

```
    queue [rear++] = start;
```

```
    while (front < rear) {
```

```
        int node = queue [front++];
```

```
        printf ("%d", node);
```

```
        for (int i = 0; i < n; i++) {
```

```
            if (graph [node] [i] == 1 && !visited [i])
```

```
                visited [i] = 1;
```

```
                queue [rear++] = i;
```

```
        }
```

```
    }
```

```
}
```

```
}
```

```
int main () {
```

```
    int start;
```

```
    printf ("Enter number of vertices :");
```

```
    scanf ("%d", &n);
```



```

printf ("Enter adjacency matrix : \n");
for (int i = 0; i < n; i++)
    for (int j = 0; j < n; j++)
        scanf ("%d", &graph [i][j]);

for (int i = 0; i < n; i++)
    visited [i] = 0;

printf ("Enter starting vertex :");
scanf ("%d", &start);

printf ("BFS Traversal :");
BFS (start);

return 0;
}

```

Output :

Enter number of vertices : 3

Enter adjacency matrix :

0 1 1

1 0 0

1 1 0

Enter starting vertex : 0

BFS Traversal : 0 1 2