

BFS: The Code (again)

Data: `color[V], prev[V], d[V]`

```
BFS(G) // starts from here
{
    for each vertex  $u \in V - \{s\}$ 
    {
        color[u]=WHITE;
        prev[u]=NIL;
        d[u]=inf;
    }
    color[s]=GRAY;
    d[s]=0; prev[s]=NIL;
    Q=empty;
    ENQUEUE(Q, s);
```

```
    While(Q not empty)
    {
        u = DEQUEUE(Q);
        for each  $v \in \text{adj}[u]$  {
            if (color[v] ==
                WHITE) {
                color[v] = GREY;
                d[v] = d[u] + 1;
                prev[v] = u;
                Enqueue(Q, v);
            }
        }
        color[u] = BLACK;
    }
}
```

Breadth-First Search: Print Path

Data: color[v], prev[v], d[v]

```
Print-Path(G, s, v)
{
    if (v==s)
        print(s)
    else if (prev[v]==NIL)
        print(No path);
    else{
        Print-Path(G, s, prev[v]);
        print(v);
    }
}
```