Pseudocode for Prim's algorithm

```
Prim(G, w, s)
//Input: undirected connected weighted graph G = (V,E) in adj list representation,
         source vertex s in V
//Output: p[1..|V|], representing the set of edges composing an MST of G
01 for each v in V
02    color(v) <- WHITE
03    key(v) <- infinity
04    p(v) <- NIL
05 Q <- empty list    // Q keyed by key[v]
06 color(s) <- GRAY
07 Insert(Q, s)
08 key(s) <- 0
09 while Q != empty
10    u <- Extract-Min(Q)
11    for v in Adj[u]
12       if color(v) = WHITE
13          then color(v) <- GRAY
14               Insert(Q,v)
15               key(v) <- w(u,v)
16               p(v) <- u
17       elseif color(v) = GRAY
18          then if key(v) > w(u,v)
19                  then key(v) <- w(u,v)
20                       p(v) <- u
21    color(v) <- BLACK
22 return(p)
```