4. **Greedy Algorithms (Part II)**

- *Prim's algorithm demo*
Prim's algorithm demo

Initialize $S =$ any node.
Repeat $n - 1$ times:
  • Add to tree the min weight edge with one endpoint in $S$.
  • Add new node to $S$.
Prim's algorithm demo

Initialize $S = \text{any node}$.
Repeat $n - 1$ times:
- Add to tree the min weight edge with one endpoint in $S$.
- Add new node to $S$.
Prim's algorithm demo

Initialize $S = \text{any node}$.
Repeat $n - 1$ times:
  • Add to tree the min weight edge with one endpoint in $S$.
  • Add new node to $S$.
Prim's algorithm demo

Initialize $S = $ any node.
Repeat $n - 1$ times:
- Add to tree the min weight edge with one endpoint in $S$.
- Add new node to $S$. 
Prim's algorithm demo

Initialize $S =$ any node.
Repeat $n - 1$ times:
  • Add to tree the min weight edge with one endpoint in $S$.
  • Add new node to $S$. 
Prim's algorithm demo

Initialize $S = \text{any node}$.
Repeat $n - 1$ times:

- Add to tree the min weight edge with one endpoint in $S$.
- Add new node to $S$.
Prim's algorithm demo

Initialize $S = $ any node.
Repeat $n - 1$ times:
  • Add to tree the min weight edge with one endpoint in $S$.
  • Add new node to $S$. 
Prim's algorithm demo

Initialize $S$ = any node.
Repeat $n - 1$ times:
  • Add to tree the min weight edge with one endpoint in $S$.
  • Add new node to $S$. 
Prim's algorithm demo

Initialize $S =$ any node.
Repeat $n – 1$ times:
- Add to tree the min weight edge with one endpoint in $S$.
- Add new node to $S$. 
Prim's algorithm demo

Initialize $S = \text{any node.}$

Repeat $n - 1$ times:
   • Add to tree the min weight edge with one endpoint in $S$.
   • Add new node to $S$. 

![Graph demonstrating Prim's algorithm]
Prim's algorithm demo

Initialize $S = \text{any node.}$
Repeat $n - 1$ times:
• Add to tree the min weight edge with one endpoint in $S$.
• Add new node to $S$. 
Prim's algorithm demo

Initialize $S = \text{any node}$.
Repeat $n - 1$ times:
- Add to tree the min weight edge with one endpoint in $S$.
- Add new node to $S$. 

![Diagram of Prim's algorithm demo](image)
Prim's algorithm demo

Initialize $S = \text{any node}$.
Repeat $n - 1$ times:
- Add to tree the min weight edge with one endpoint in $S$.
- Add new node to $S$. 

![Graph demonstrating Prim's algorithm](image-url)
Prim's algorithm demo

Initialize $S = \text{any node.}$
Repeat $n - 1$ times:
  • Add to tree the min weight edge with one endpoint in $S$.
  • Add new node to $S$. 

![Prim's algorithm diagram](image-url)
Prim's algorithm demo

Initialize $S = \text{any node.}$
Repeat $n - 1$ times:
  • Add to tree the min weight edge with one endpoint in $S$.
  • Add new node to $S$. 
Prim's algorithm demo

Initialize $S = \text{any node.}$
Repeat $n - 1$ times:
  • Add to tree the min weight edge with one endpoint in $S$.
  • Add new node to $S$. 
Prim's algorithm demo

Initialize $S = \text{any node.}$
Repeat $n - 1$ times:
  • Add to tree the min weight edge with one endpoint in $S$.
  • Add new node to $S$. 

![Diagram of Prim's algorithm](image-url)