

Minimum Spanning Tree (Contd)

Greedy Choice \rightarrow Can be based on selecting an edge or vertex at a time

Prim's Algorithm (vertex based) $\rightarrow \Theta |V|^2$

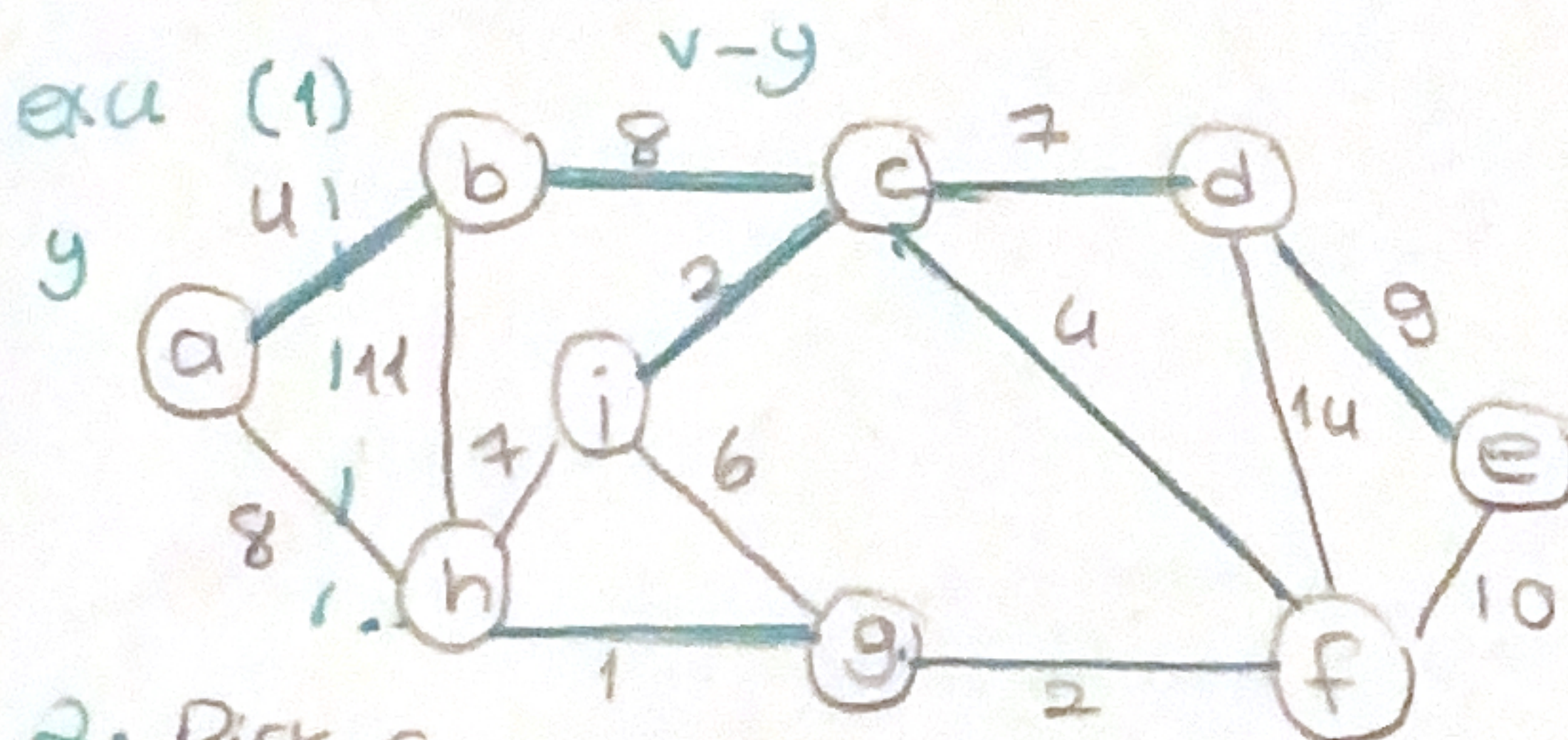
$F \rightarrow$ edge set (None at the beginning)

$Y = V_1 \rightarrow$ vertex set

1. Y 'ye en yakın ve Y 'de olmayan bir vertex seç.

2. Vertex'i Y 'ye edge'i F 'ye ekle.

3. $Y = V$ oluncaya kadar devam et.



First step:

$$F = \emptyset$$

$$Y = \{a\}$$

1. Pick b \rightarrow shortest to a (Y) from ($V-Y$)

$$F = \{ab\}$$

$$Y = \{a, b\}$$

2. Pick c

(h 'ye de segebilirdik, rastgele seçtik)

$$Y = \{a, b, c\}$$

$$F = \{ab, bc\}$$

3. Pick i \leftarrow MST

$$F = \{ab, bc, ci\}$$

$$Y = \{a, b, c, i\}$$

4. Pick f

$$F = \{ab, bc, ci, cf\}$$

$$Y = \{a, b, c, i, f\}$$

5. Pick g

$$F = \{ab, bc, ci, cf, fg\}$$

6. Pick h

$$F = \{ab, bc, ci, cf, fg\}$$

7. Pick d

$$F = \{ab, bc, ci, cf, fg\}$$

8. Pick e

$$F = \{ab, bc, ci, cf, fg\}$$

$$Y = \{a, b, c, d, e, f, g, h, i\}$$