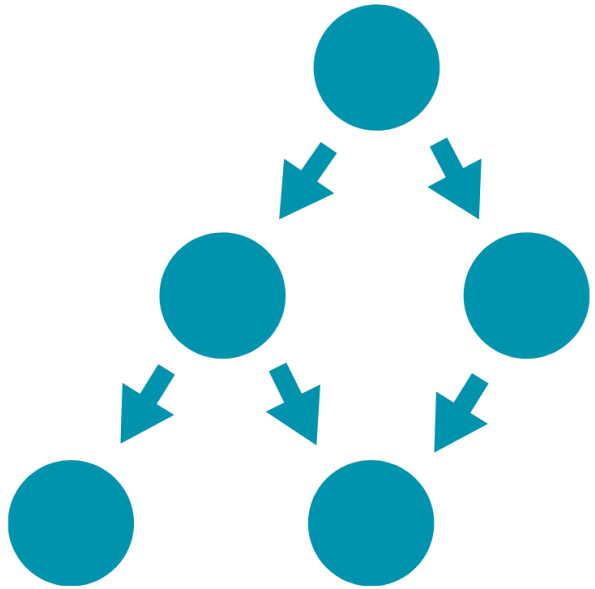
BTK AKADEMİ

ZAFER CÖMERT
Öğretim Üyesi



VERİ YAPILARILARI VE ALGORİTMALAR

Graph
Kruskal Algorithm

Kruskal Algoritması

- Prim’s algoritması bir tekil düğümden başlar ve diğer düğümlere erişir.
- Prim’s düğüm bazlı düşünür.
- Bunun yerine kenar bazlı düşünülse ne olur?
- Yani en hafif, bir başka ifadeyle en az maliyete sahip kenar ile başlanabilir mi?
- Bu yaklaşım Kruskal algoritmasıdır.

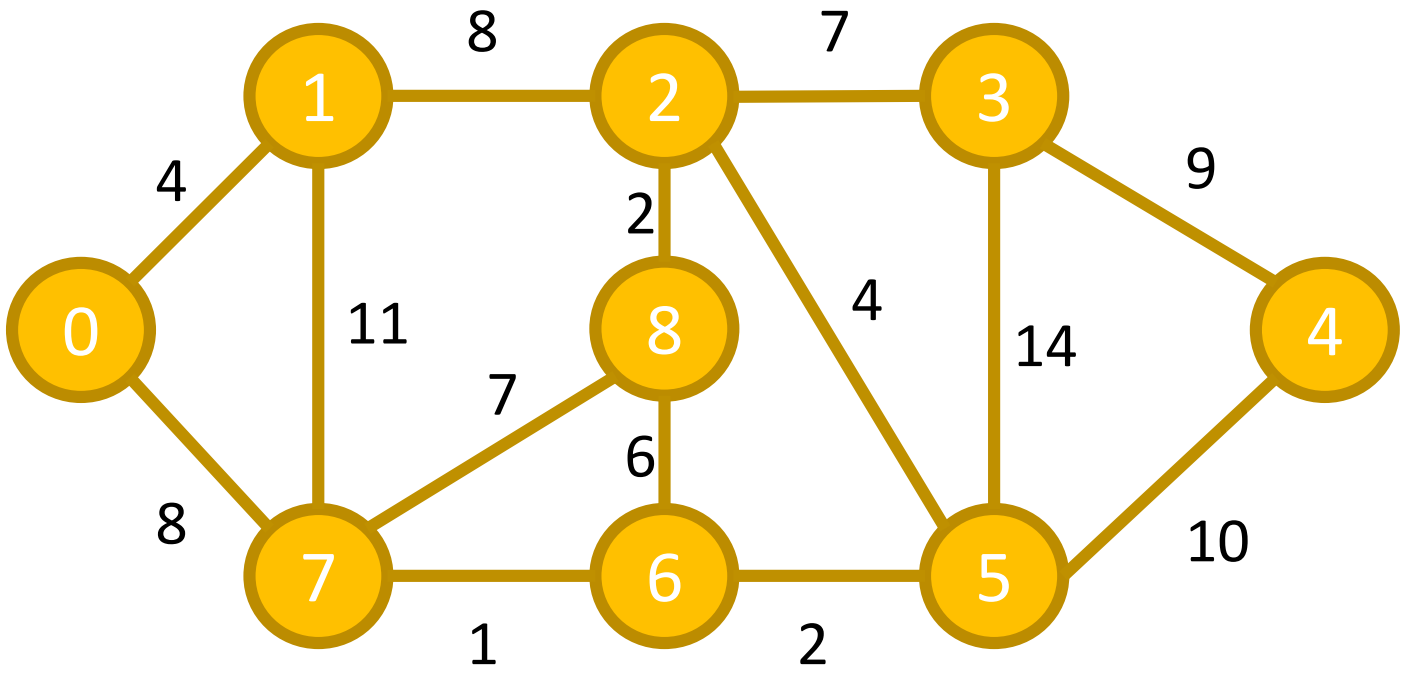
Kruskal Algoritması

1. $A \leftarrow \varnothing$
2. **for** each vertex $v \in V$
3. **do** MAKE-SET(v)
4. sort E into non-decreasing order by w
5. **for** each (u, v) taken from the sorted list
6. **do if** FIND-SET(u) $\neq$ FIND-SET(v)
7. **then** $A \leftarrow A \cup \{(u, v)\}$
8. UNION(u, v)
9. **return** A

Kruskal Algoritması

- Bir ağaç: yönsüz, bağlantılı ve çevrimsiz çizgedir.
- Bir ağaç ile Kruskal algoritması inşa edilirken; algoritma bitmeyene kadar ilgili yapı ağaç değil; orman (forest) olarak tanımlanabilir.
- Orman (forest) herhangi bir yönsüz ve çevrimi olmyan çizgedir.

Kruskal Algoritması



Kruskal Algoritması

Weight	Src	Dest
1	7	6
2	8	2
2	6	5
4	0	1
4	2	5
6	8	6
7	2	3
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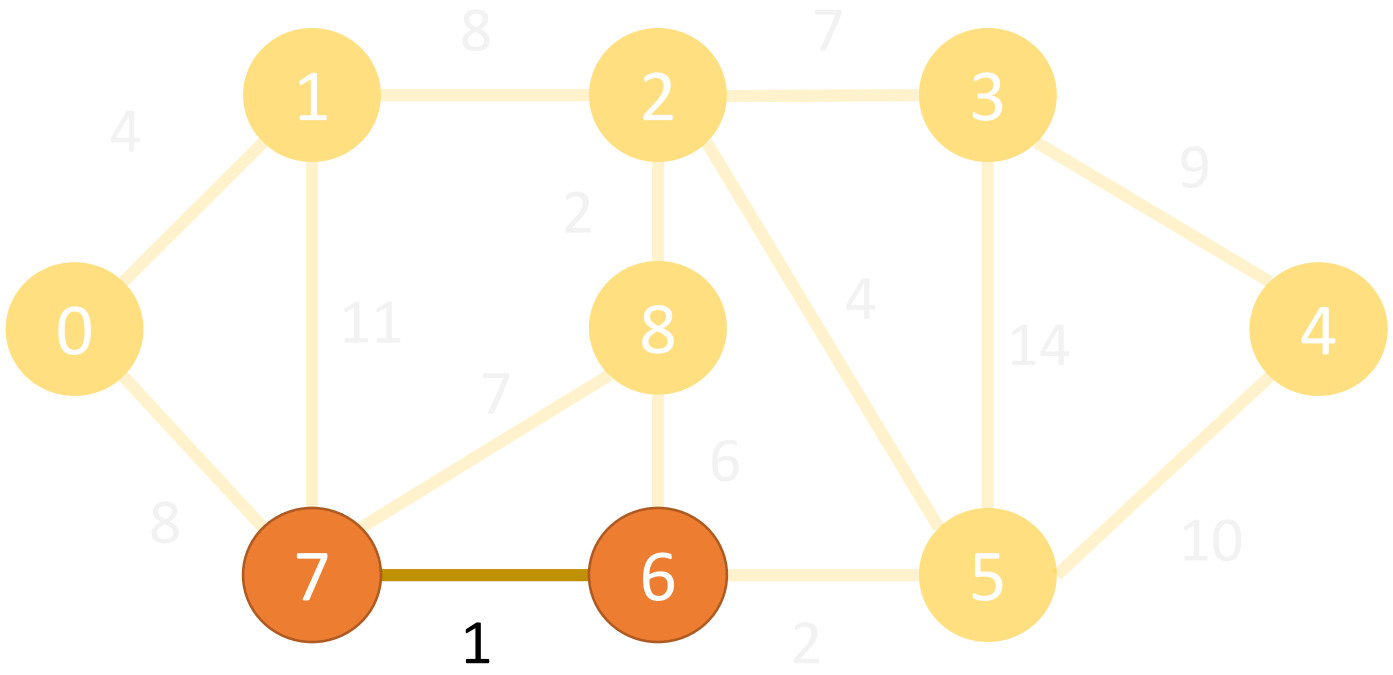
9	3	4
10	5	4
11	1	7
14	3	5

Kruskal Algoritması



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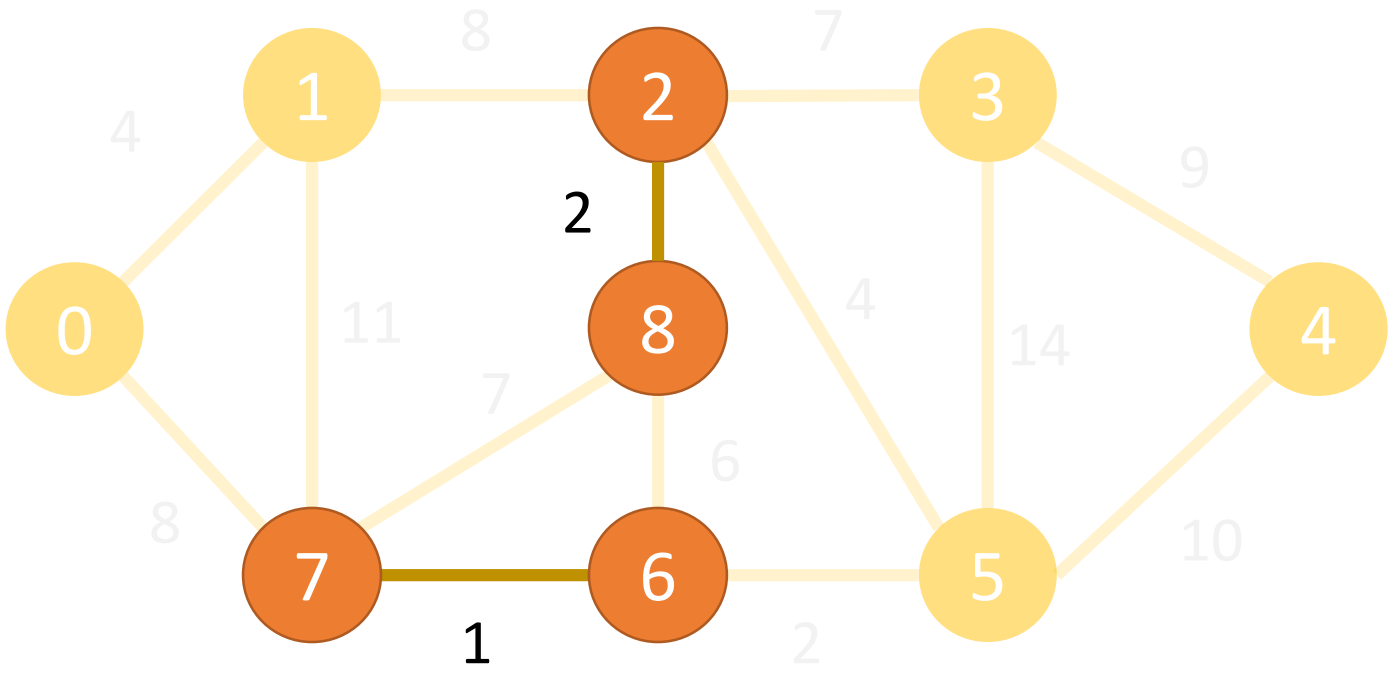
11	1	7
14	3	5

BTK AKADEMİ

Kruskal Algoritması



Weight	Src	Dest
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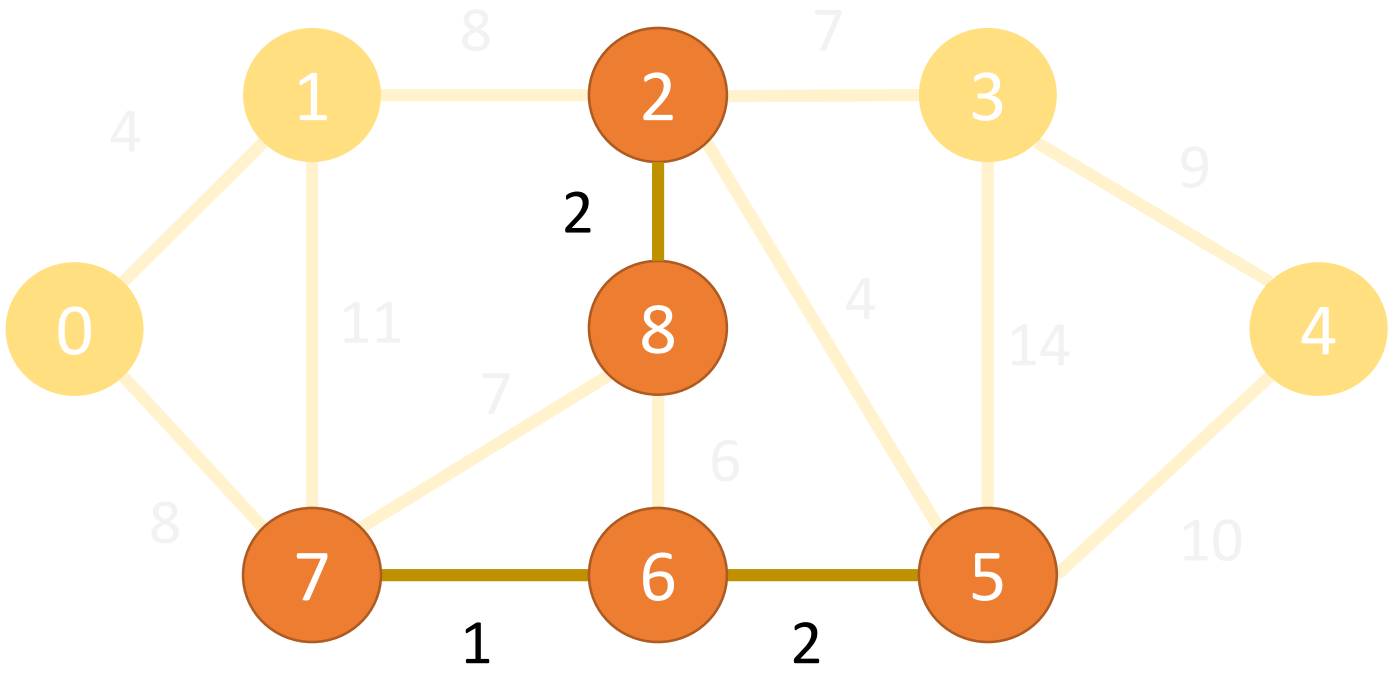
9	3	4
10	5	4
11	1	7
14	3	5

BTK AKADEMİ

Kruskal Algoritması



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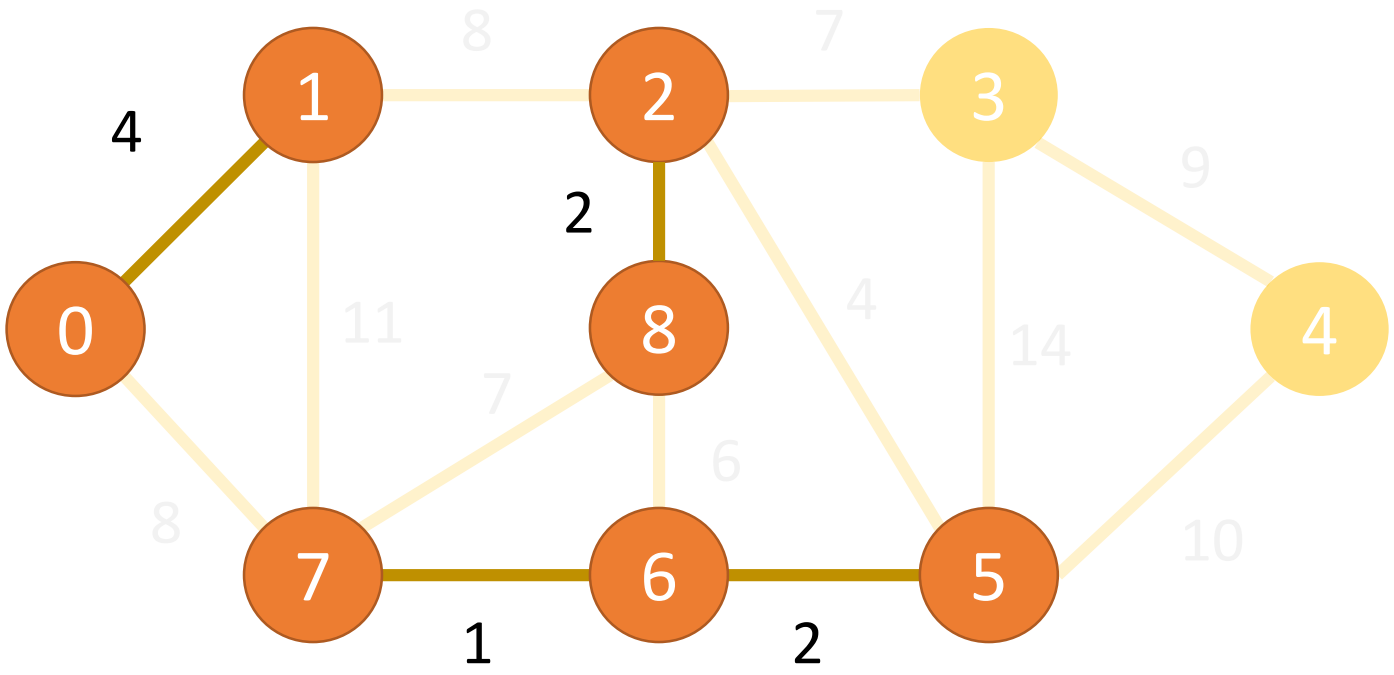
11	1	7
14	3	5

BTK AKADEMİ

Kruskal Algoritması



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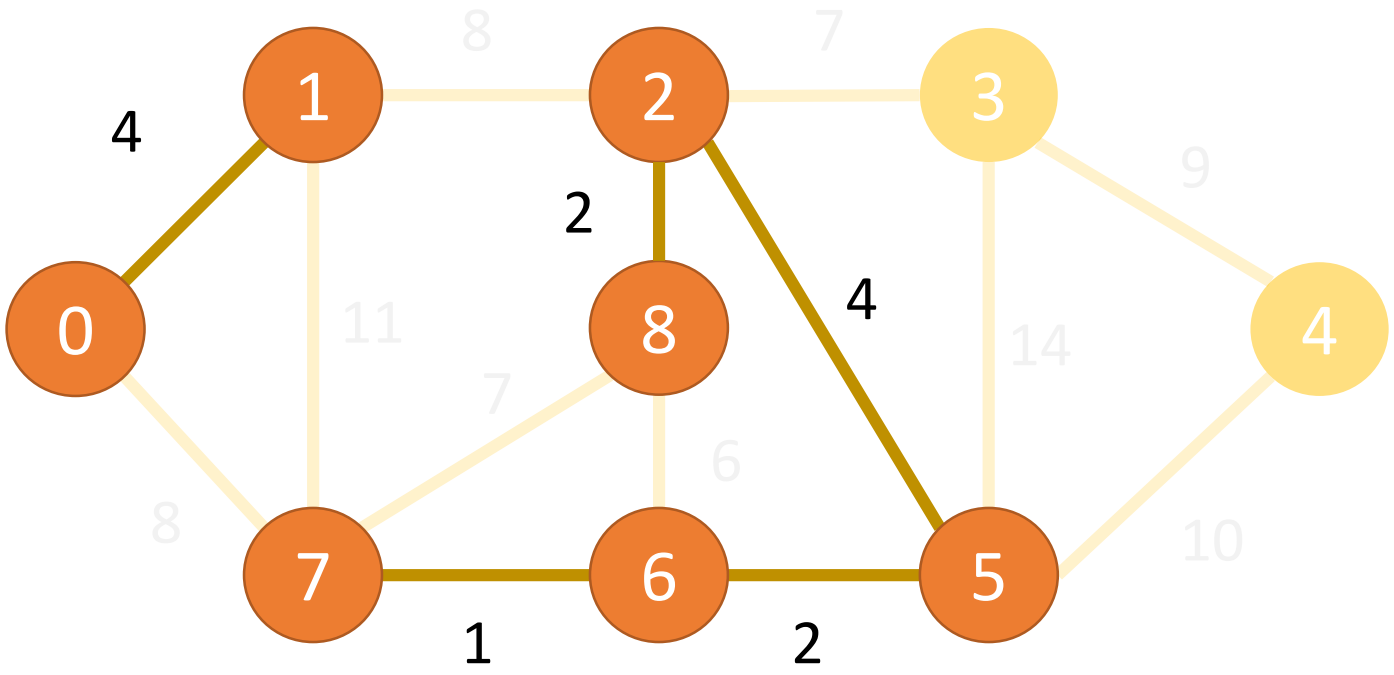
11	1	7
14	3	5

BTK AKADEMİ

Kruskal Algoritması



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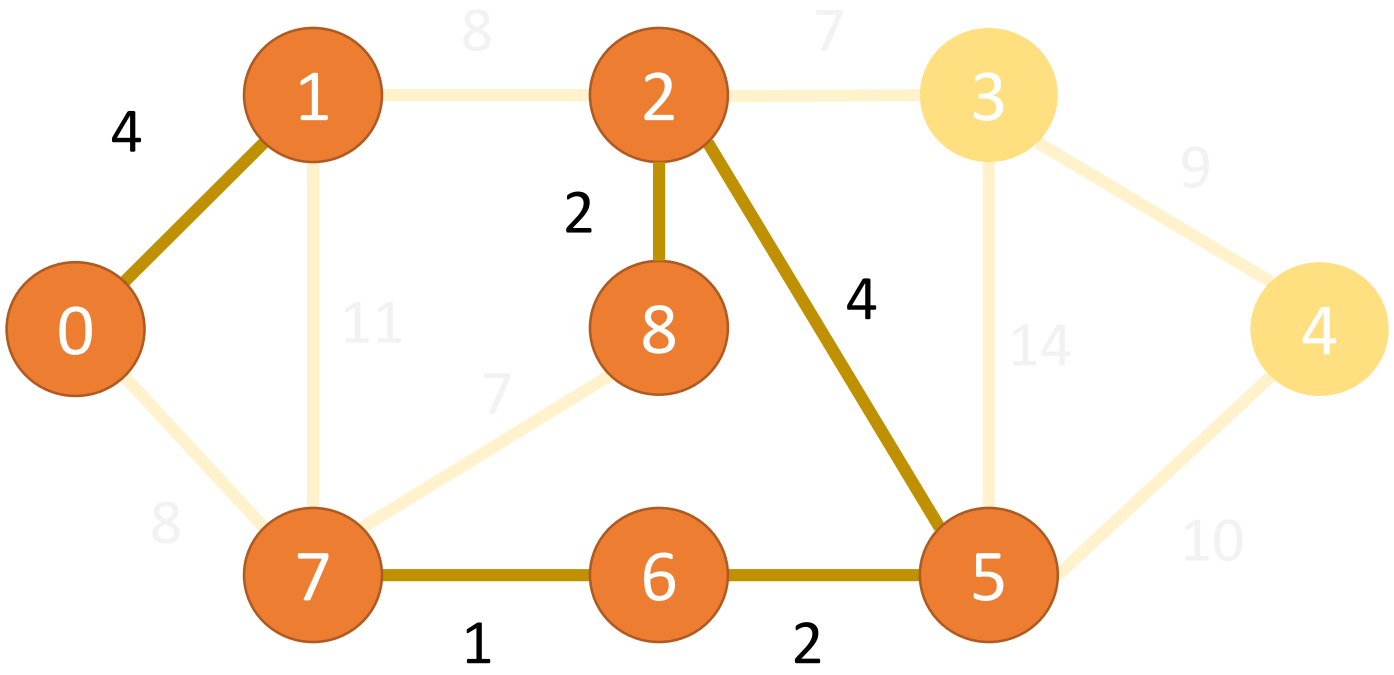
14	3	5

Kruskal Algoritması



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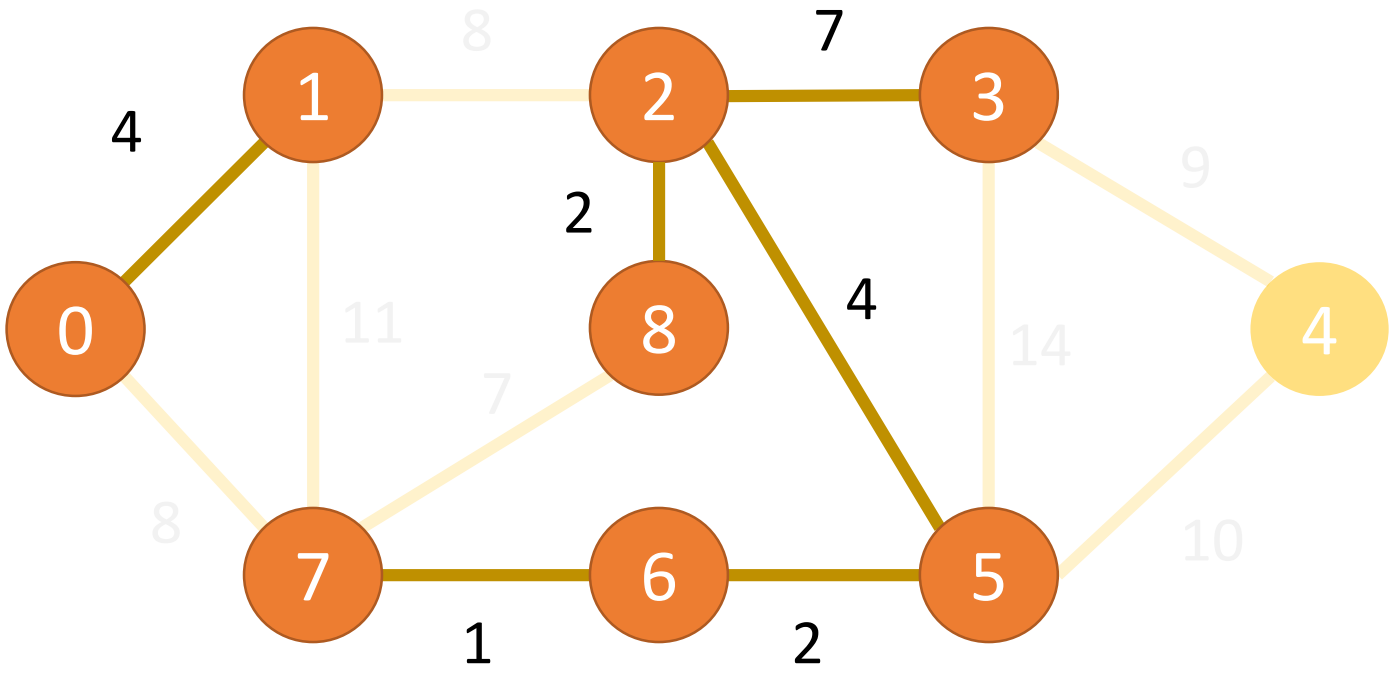
8	1	2
9	3	4
10	5	4
11	1	7
14	3	5

Kruskal Algoritması



Weight	Src	Dest
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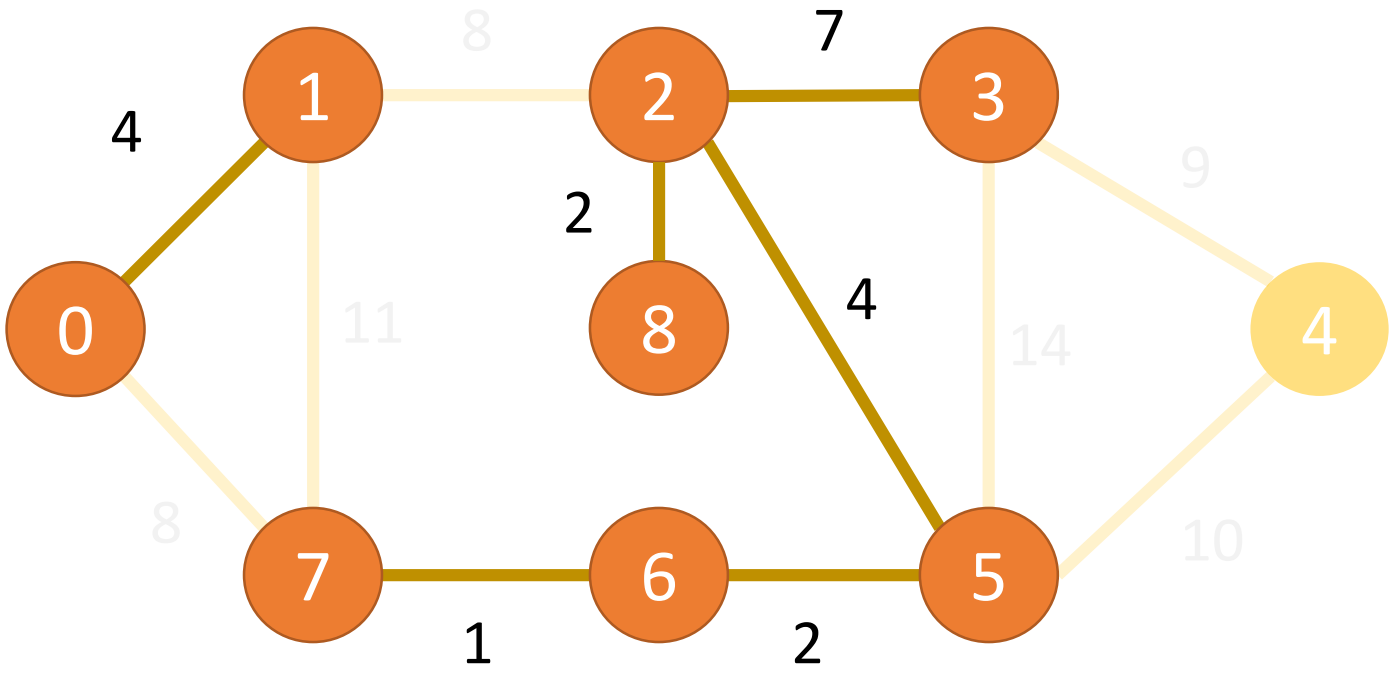
BTK AKADEMİ

Kruskal Algoritması



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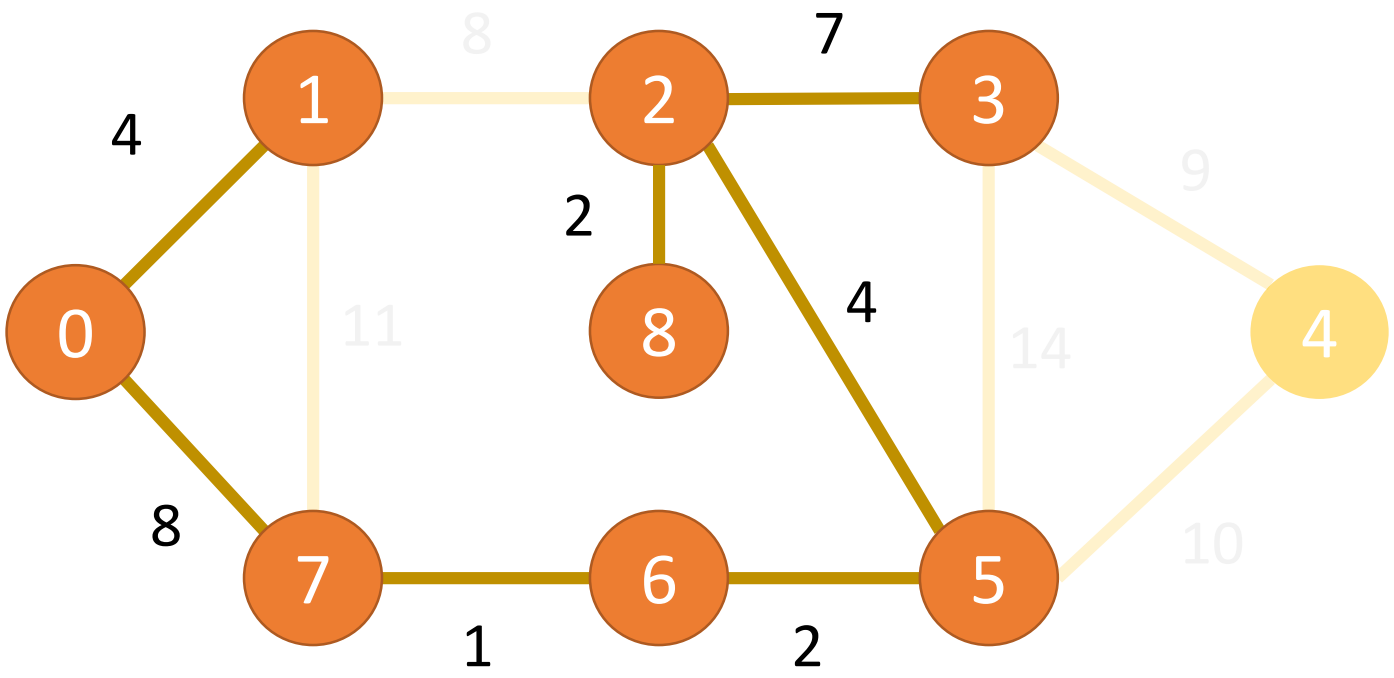
11	1	7
14	3	5

BTK AKADEMİ

Kruskal Algoritması



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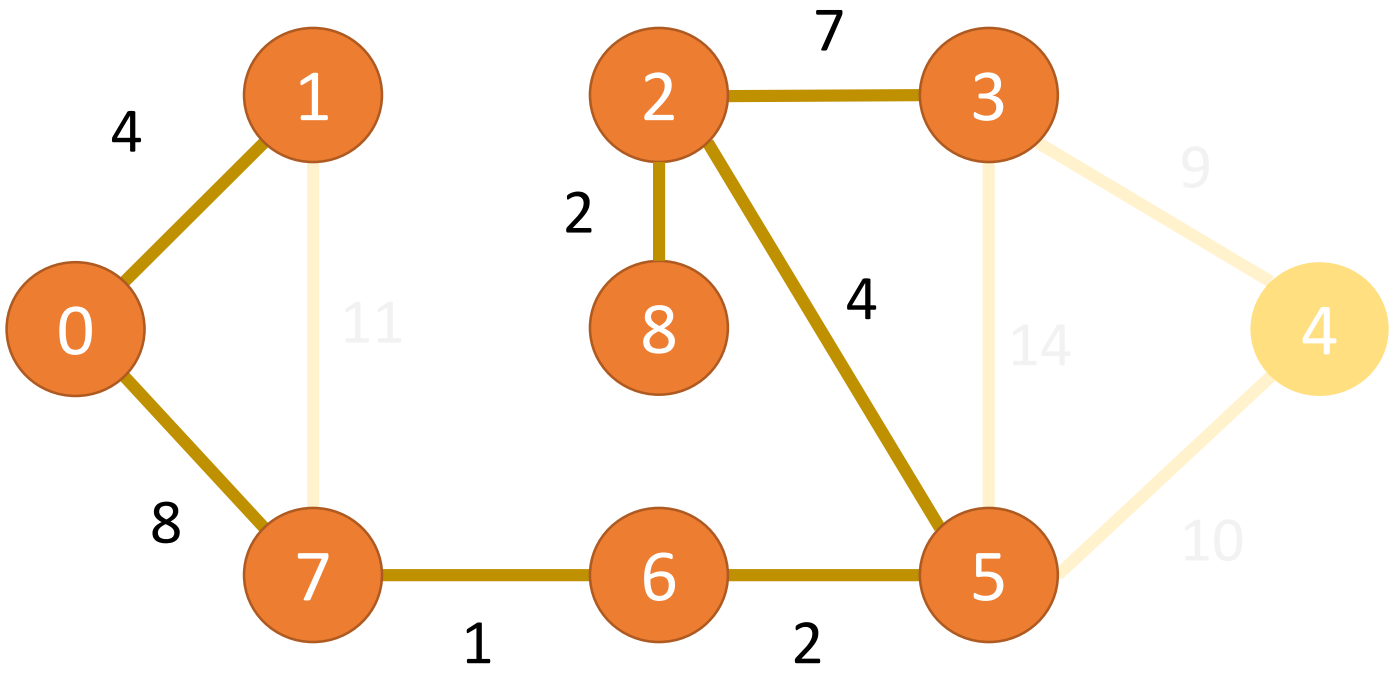
11	1	7
14	3	5

BTK AKADEMİ

Kruskal Algoritması



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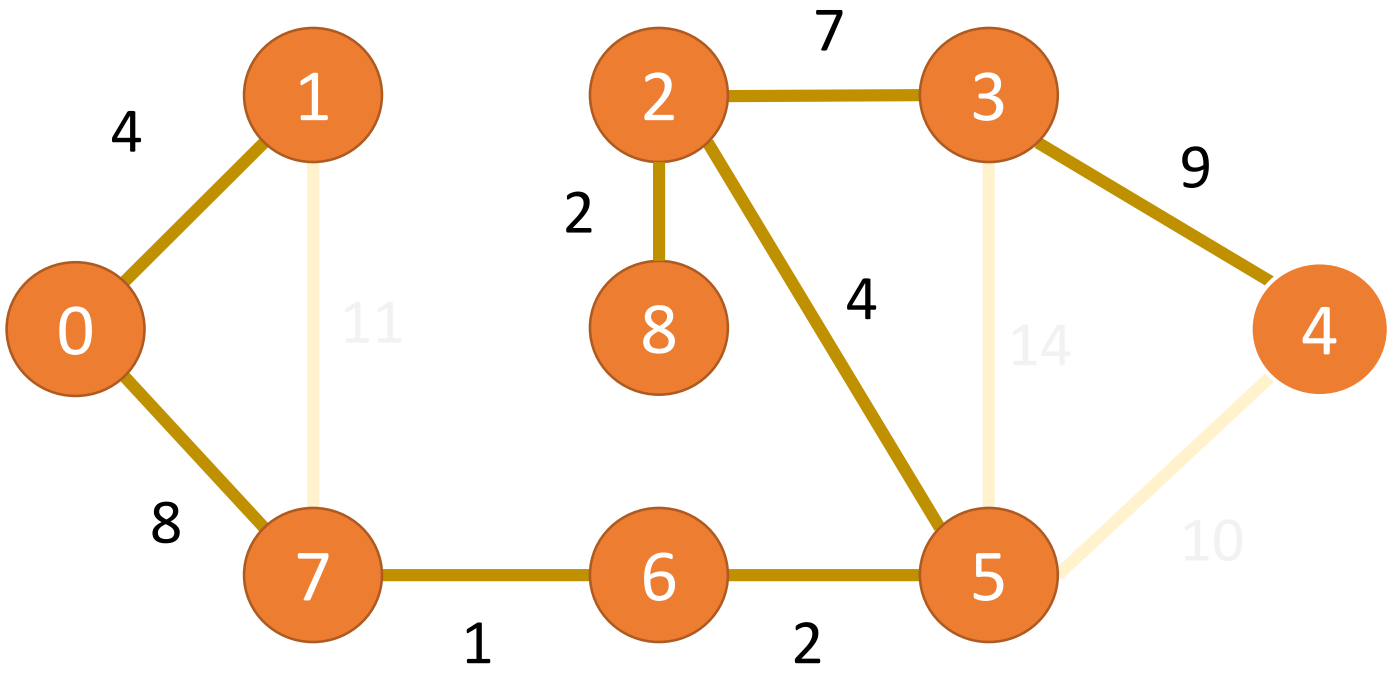
14	3	5

BTK AKADEMİ

Kruskal Algoritması



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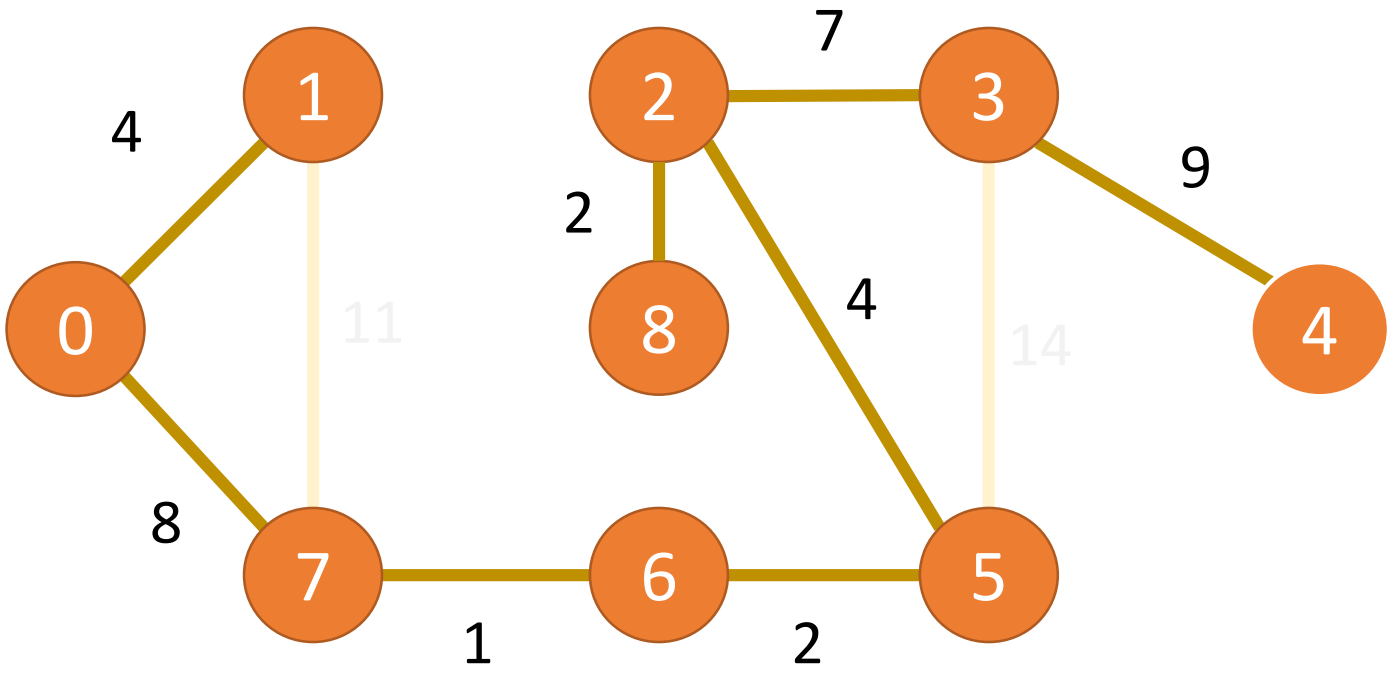
Kruskal Algoritması



Weight	Src	Dest
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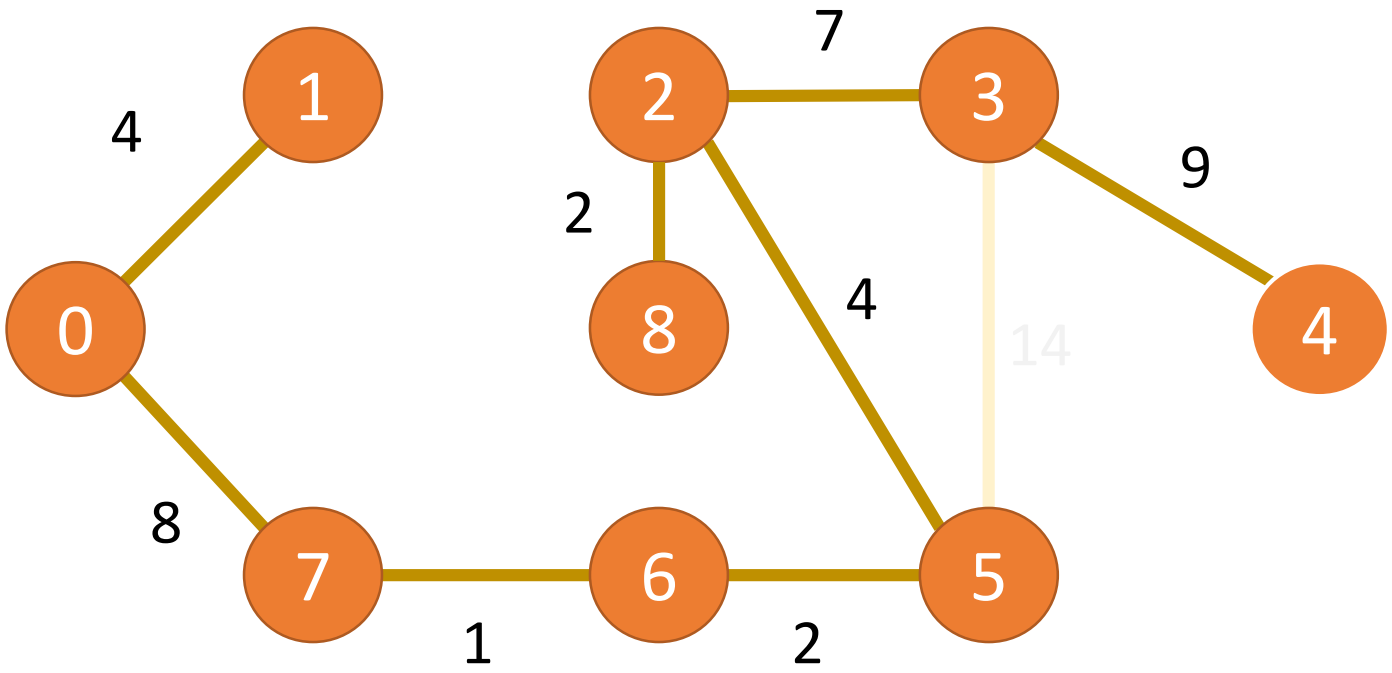
Kruskal Algoritması



Weight	Src	Dest
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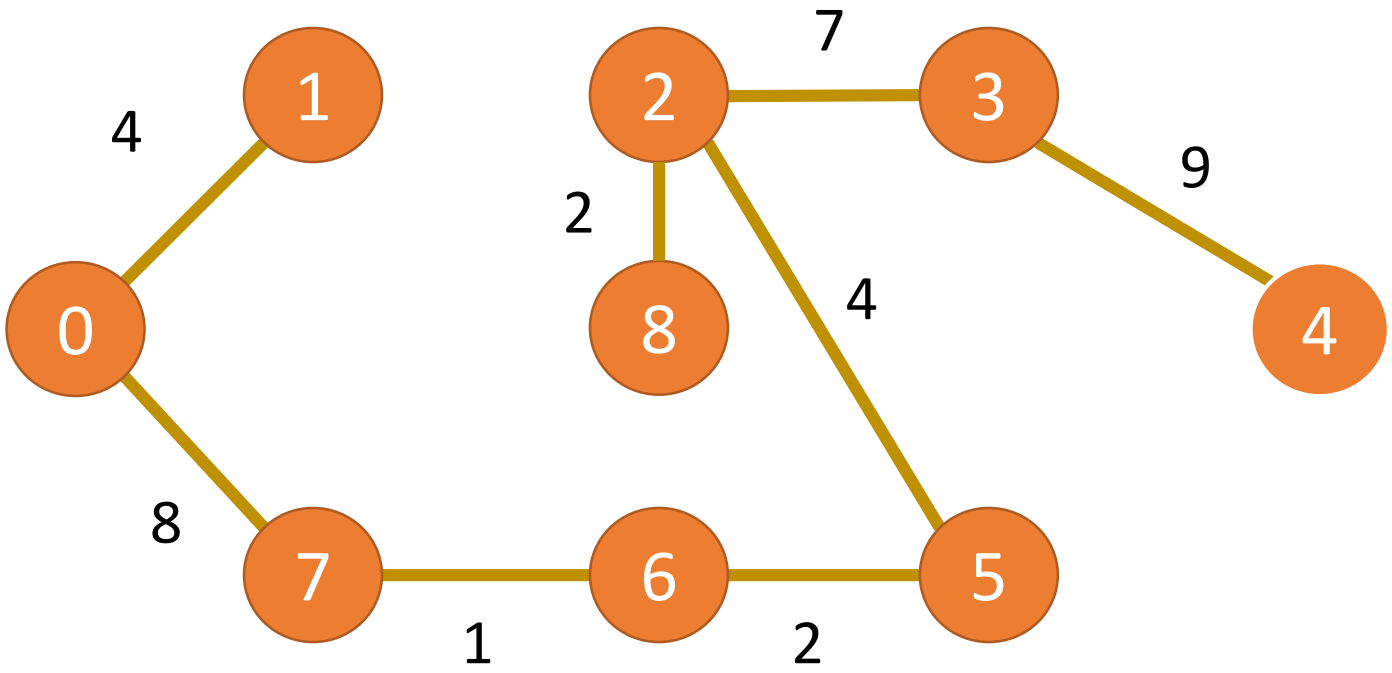
Kruskal Algoritması



Weight	Src	Dest
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11	1	7
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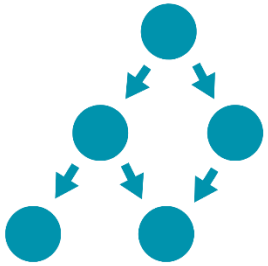

Veri Yapıları ve Algoritmalar

ZAFER CÖMERT
Öğretim Üyesi

BTK AKADEMİ