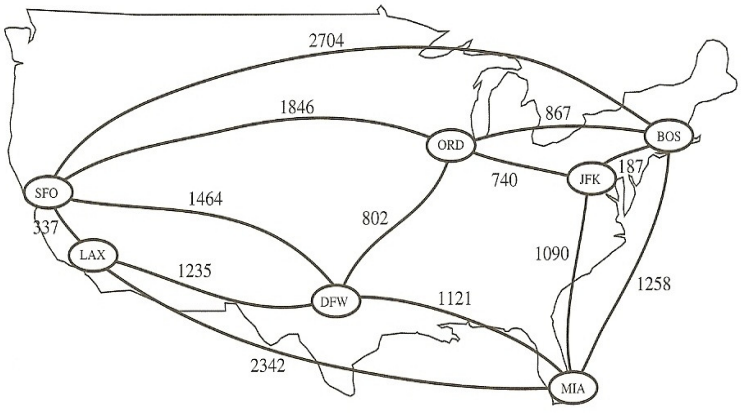
Algoritmo de Kruskal

Grafos

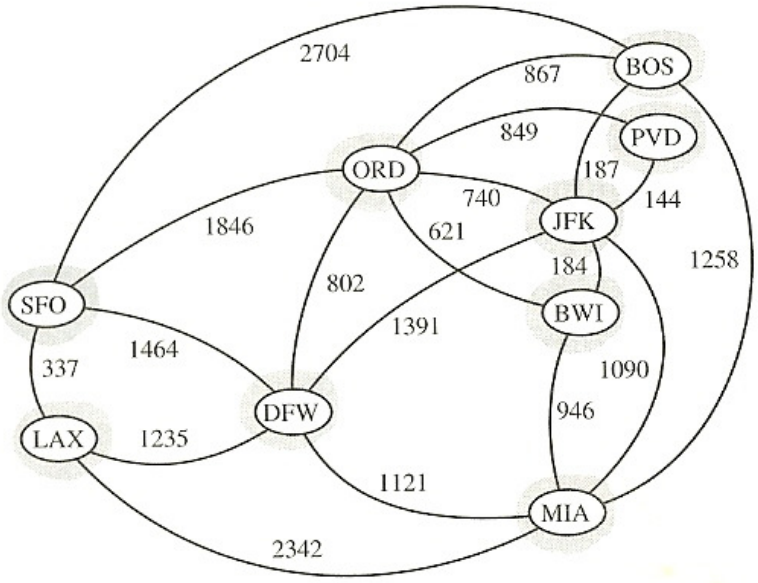
Prof. Dr. Julio Arakaki

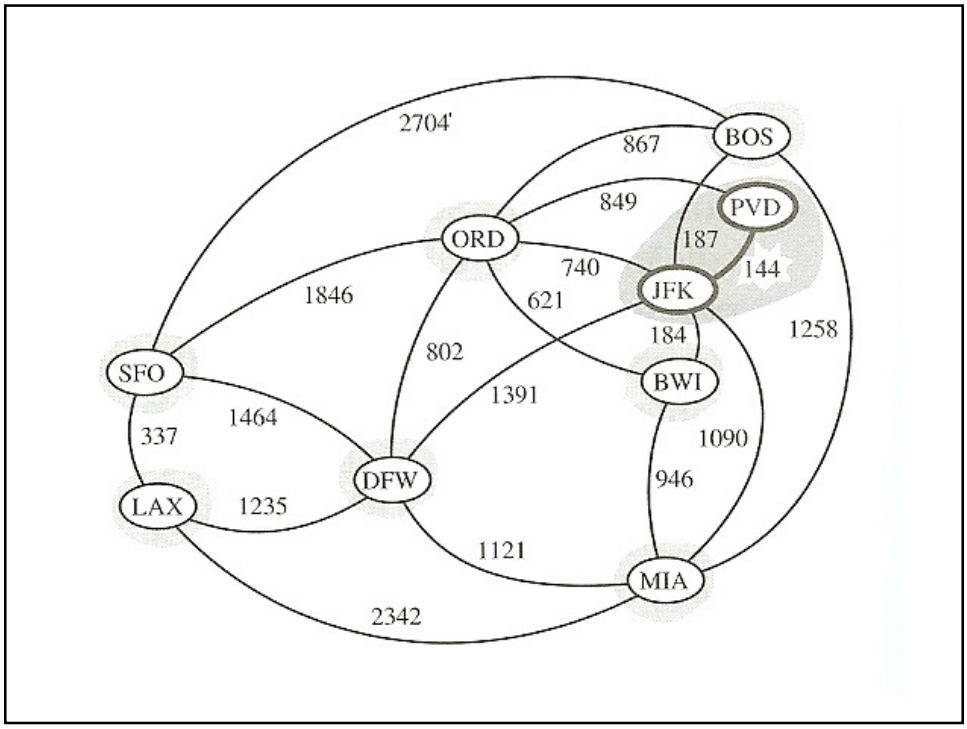
Grafo ponderado



Execução do algoritmo de Kruskal

Algoritmo Kruskal (G):
Entrada: um grafo simples, conexo e ponderado G com n vértices e m arestas.
Saída: uma árvore de cobertura mínima T para G.
para cada vértice v em G **faça**
Defina um grupo elementar $C(v) \leftarrow \{v\}$.
Inicialize uma fila de prioridade Q para conter todas as arestas em G, usando seus pesos como chaves.
$T \leftarrow \emptyset$ {T irá conter as arestas da MST}
enquanto T tem menos de $n-1$ arestas **faça**
$(u,v) \leftarrow$ Q.removeMin()
Seja $C(v)$ o grupo contendo v e $C(u)$ o grupo contendo u.
se $C(v) \neq C(u)$ **então**
Coloque aresta (v,u) em T
Unifique $C(v)$ e $C(u)$ em um grupo.
retorna a árvore T

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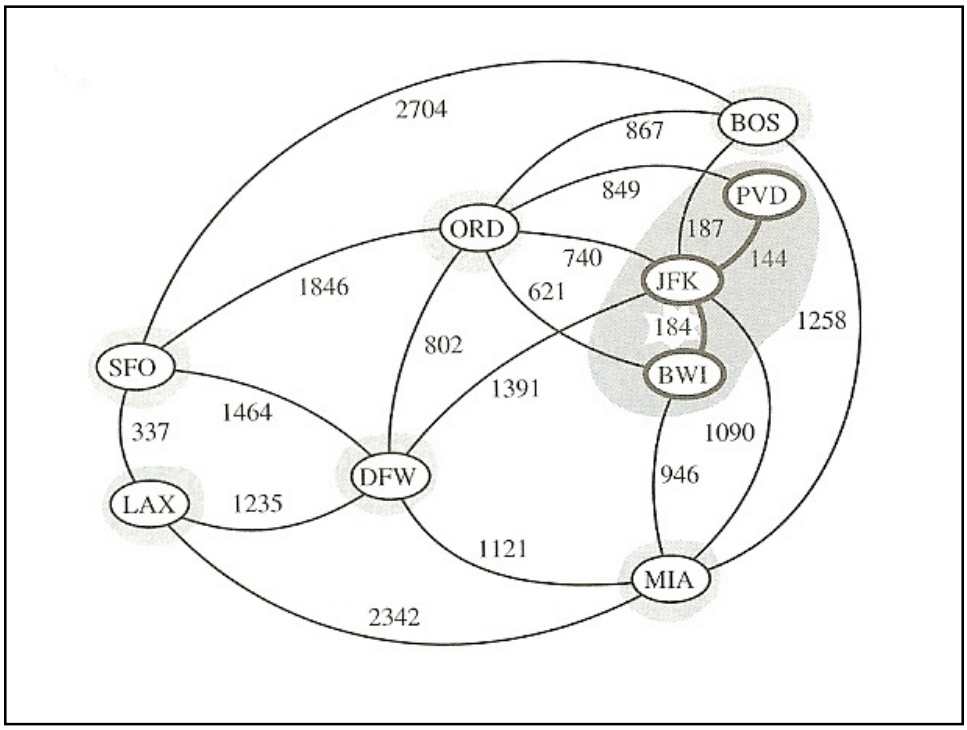
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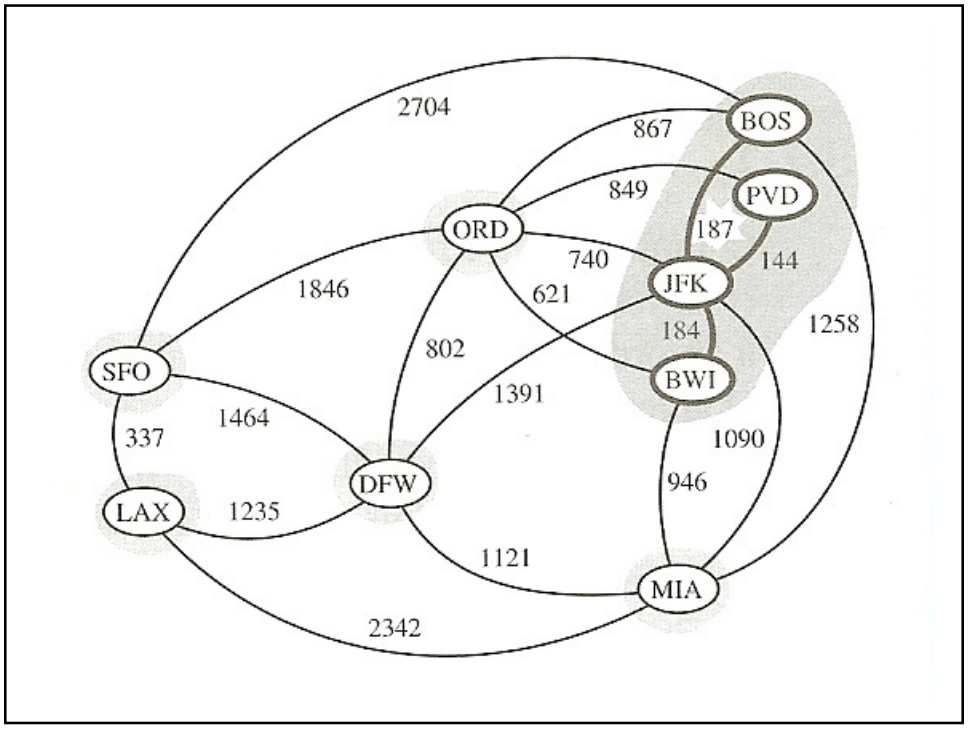
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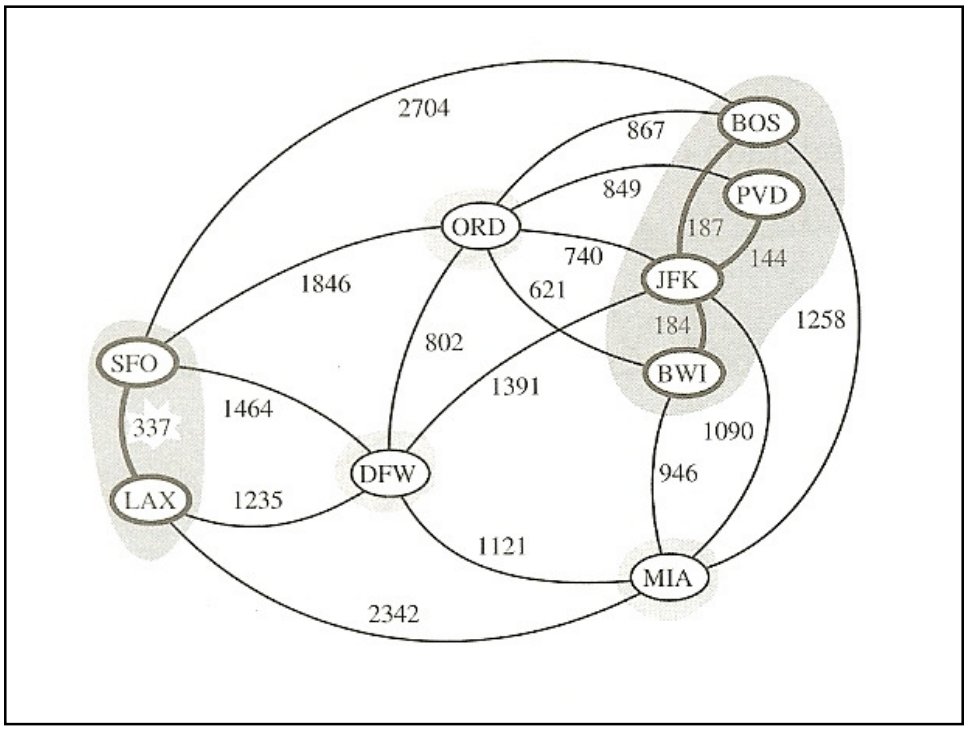
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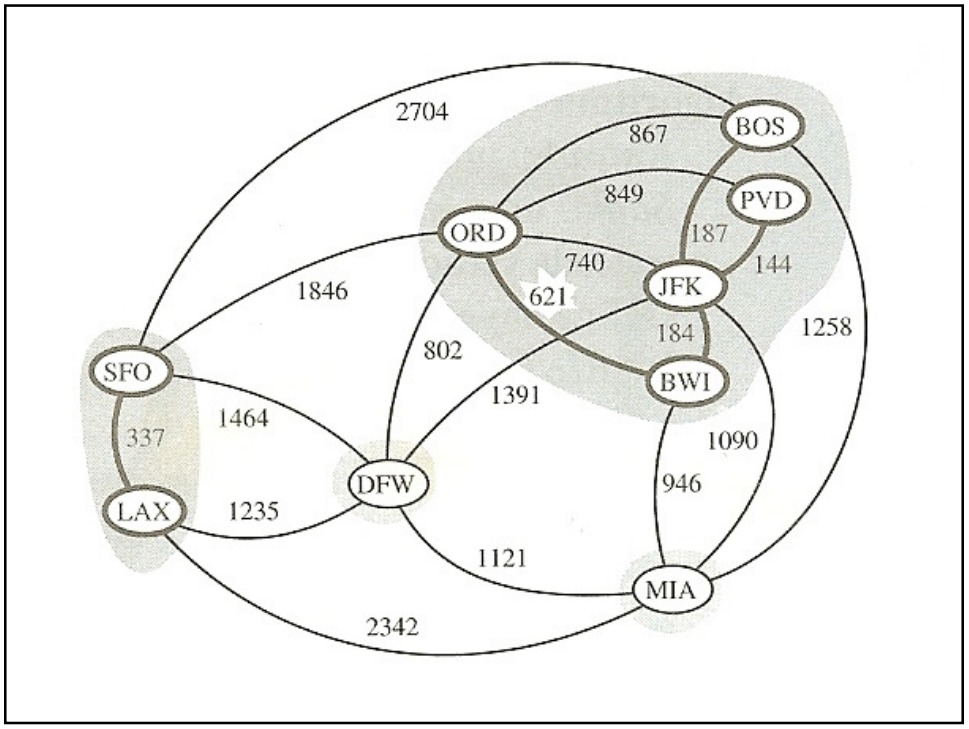
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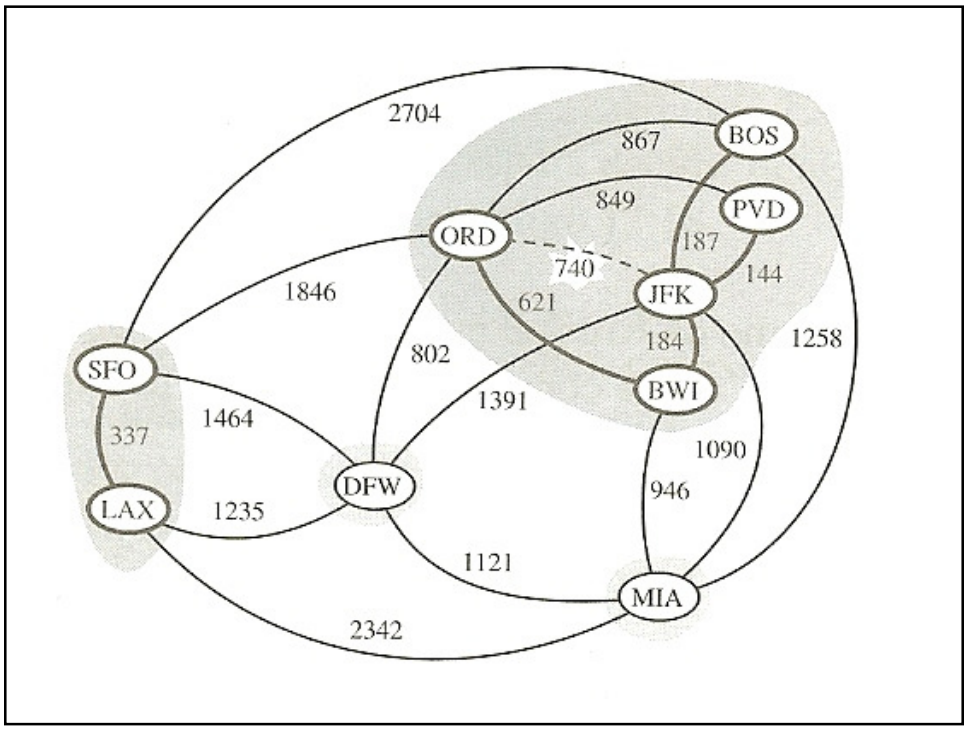
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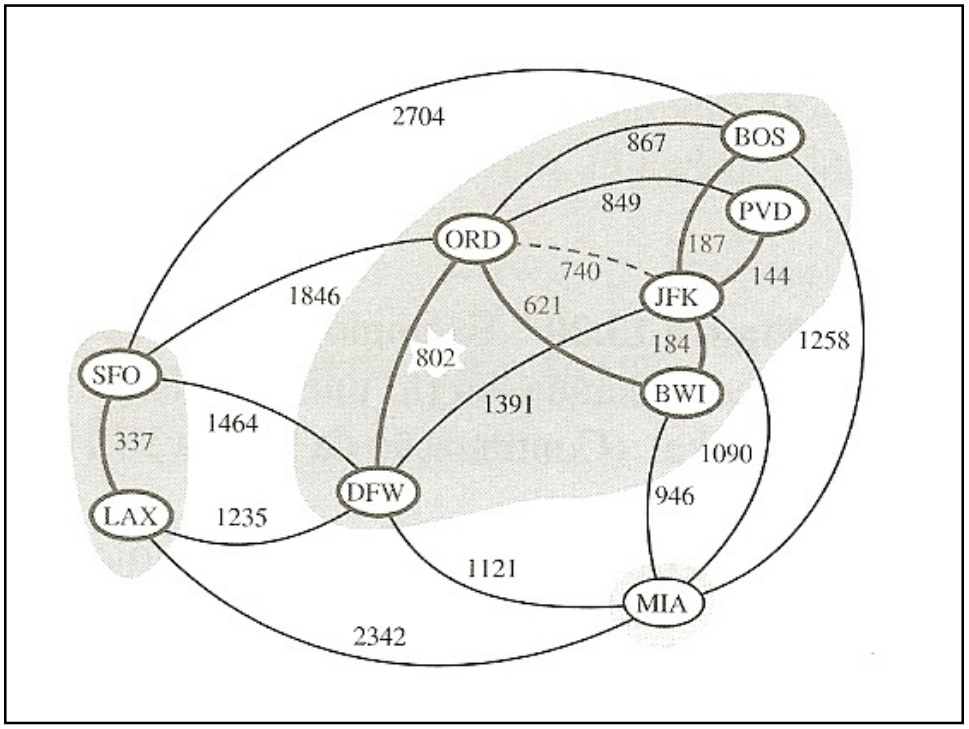
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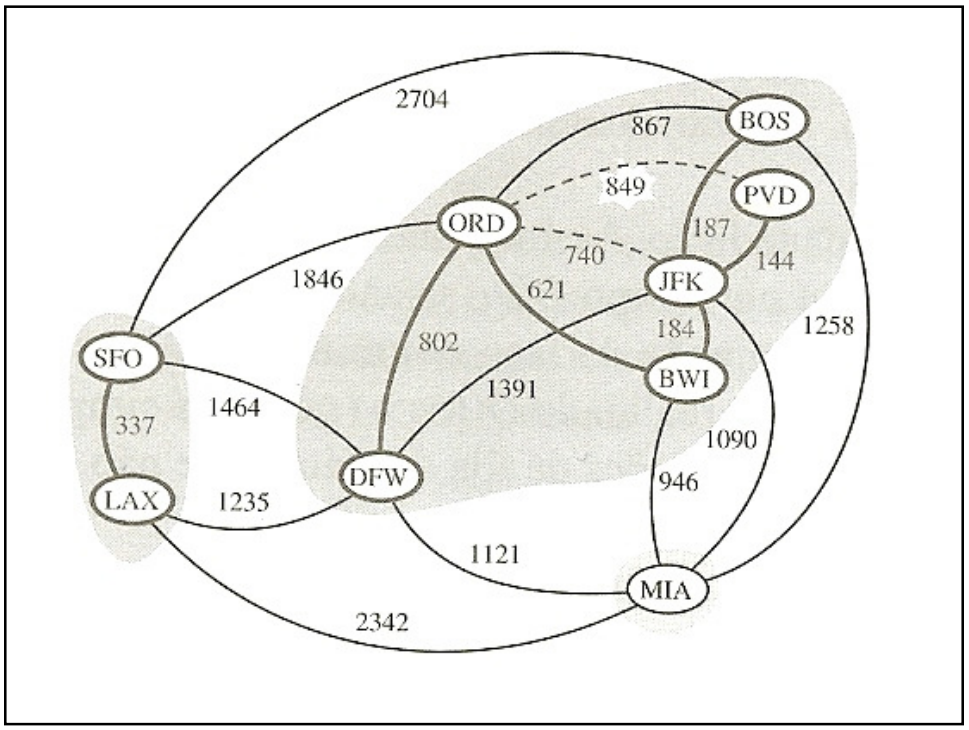
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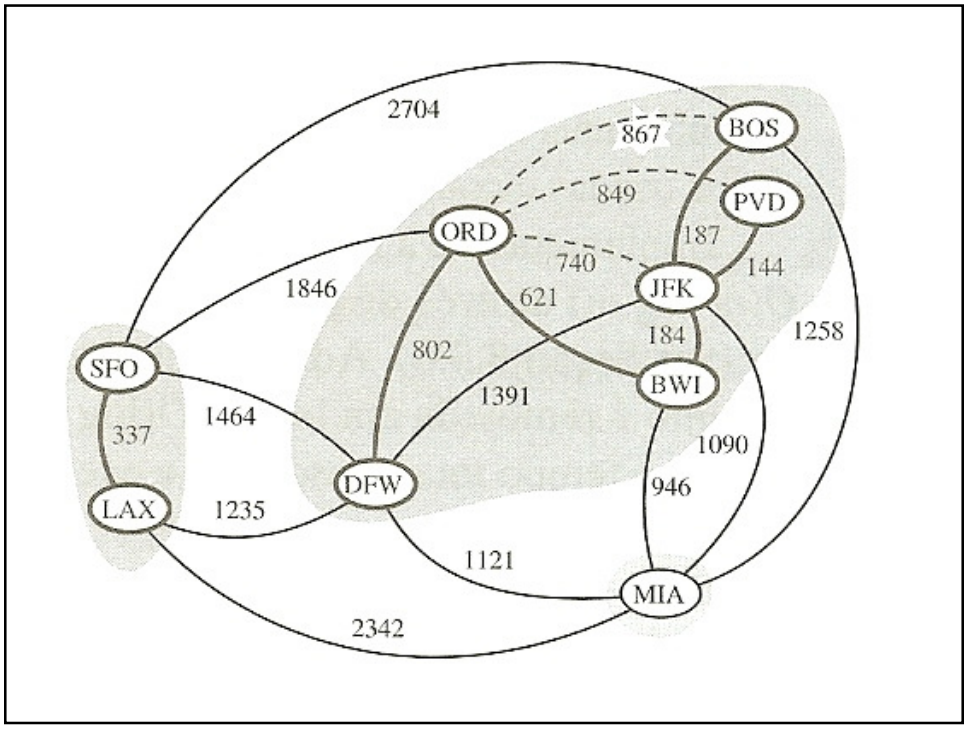
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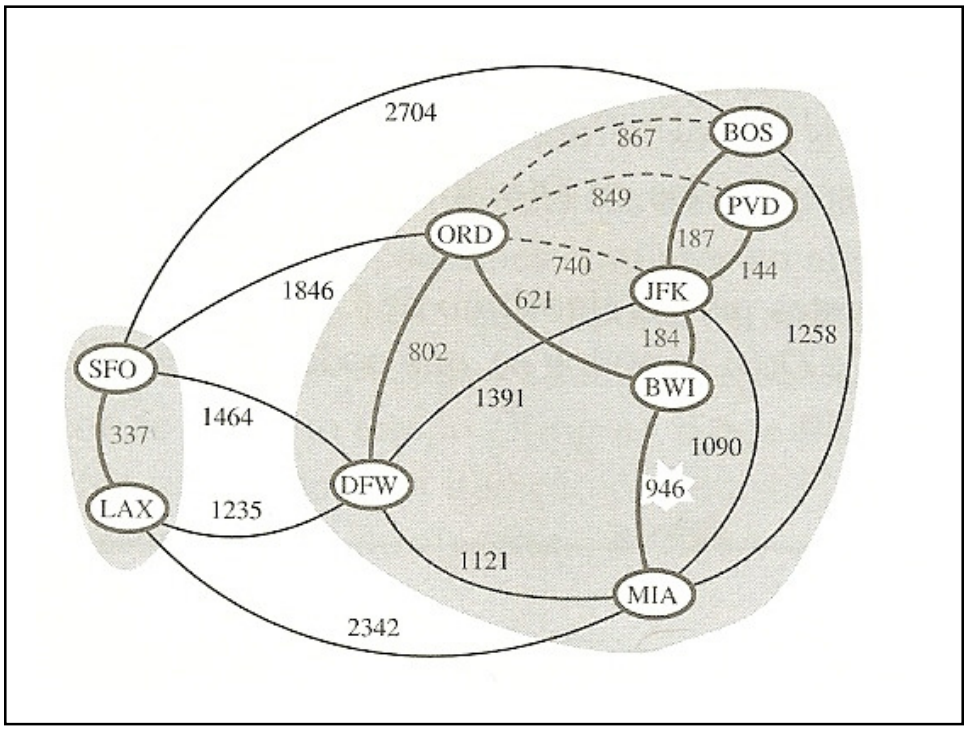
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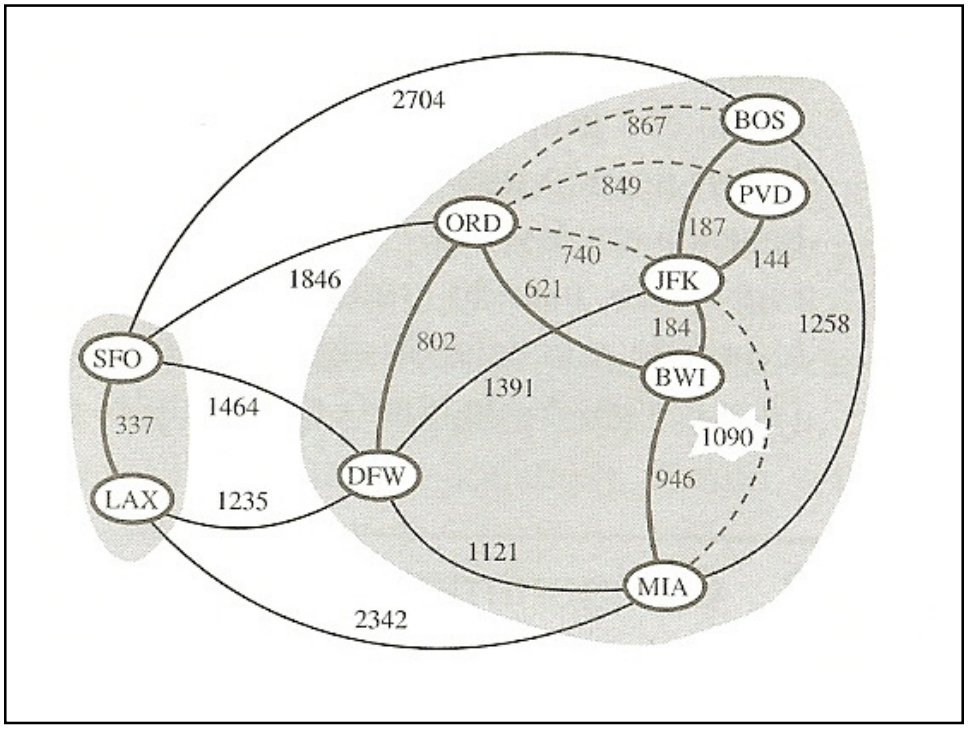
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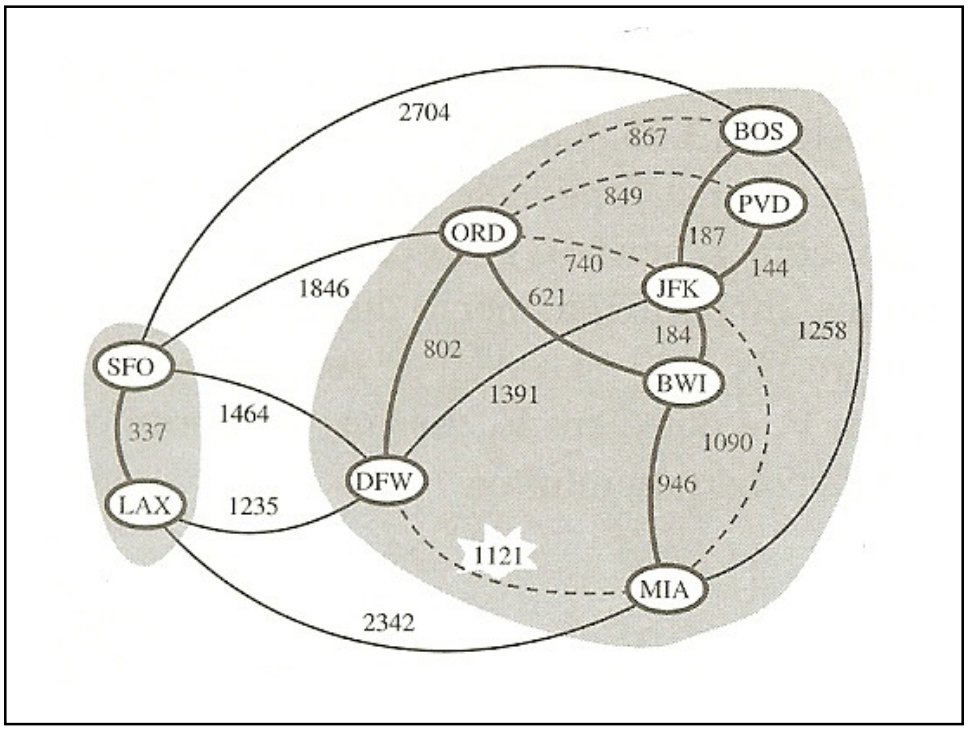
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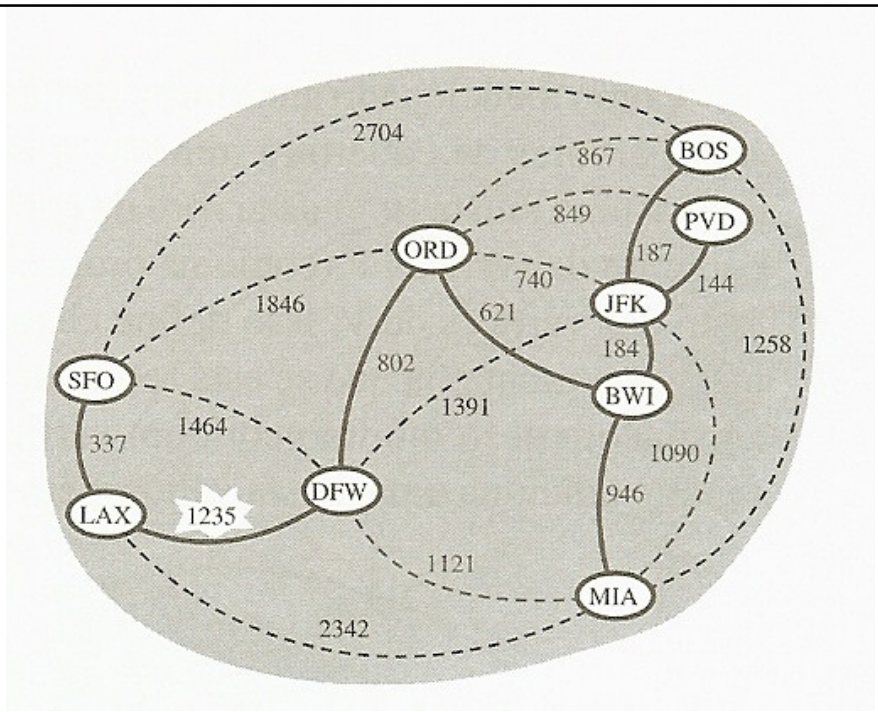
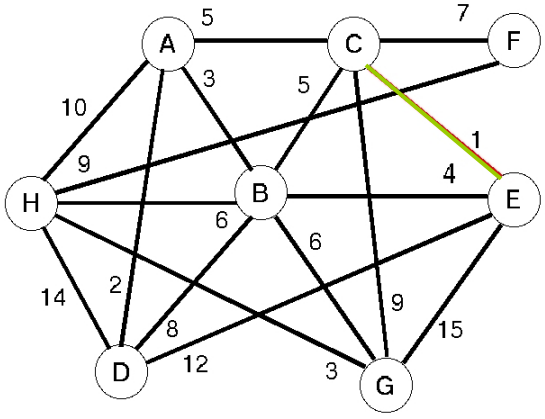


Exercício: determinar a árvore MST do grafo a seguir.



Solução: