UNIVERSIDAD TECNOLOGICA DE LOS ANDES
INGENIERIA DE SISTEMAS E INFORMATICA
ALGORITMOS Y PROGRAMACION II

TEMA: 2° EXAMEN PARCIAL
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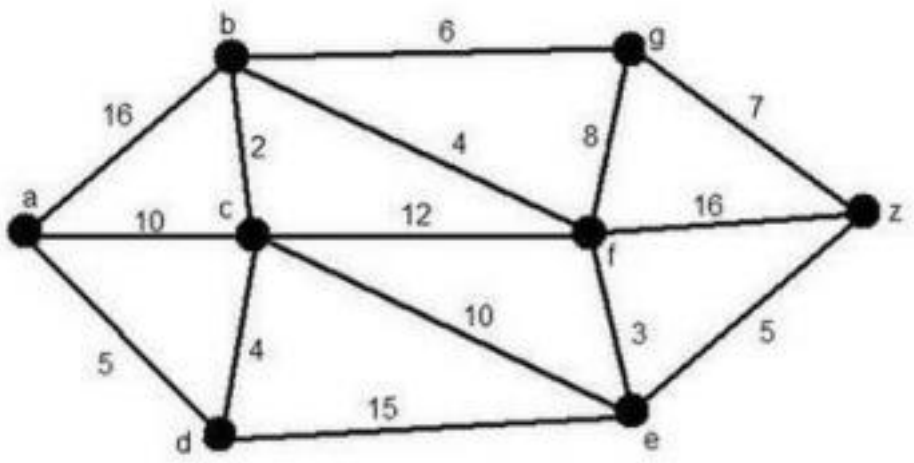
Nota: La entrega se realiza en formato PDF, Para su revisión:

Pregunta1.-Usando como base la guía 19, ejercicio propuesto 2 algoritmo de Disjktra con Clases encuentre la ruta mínima del siguiente grafo desde el nodo (a) hasta el nodo (z), se desea imprimir los vértices con sus respectivos pesos.



```python
from heapq import *
from collections import defaultdict

def dijkstra(edges, strat_node, end_node):
    g = defaultdict(list)
    for start, end, weight in edges:
        g[start].append((weight, end))
    q, visited = [(0, strat_node,())], set()
    while q:
        (cost,v1,path) = heappop(q)
        if v1 not in visited:
          visited.add(v1)
        path = (v1, path)
        if v1 == end_node:
           return (cost, path)
        for c, v2 in g.get(v1, ()):
            if v2 not in visited:
                heappush(q, (cost+c, v2, path))

    print (q)
    return float("inf")
if __name__ == "__main__":
#Bordes
   edges = [
       ("A", "B", 16),
       ("A", "C", 10),
       ("A", "D", 5),
       ("B", "G", 6),
       ("B", "F", 4),
       ("B", "C", 2),
       ("C", "B", 6),
       ("C", "F", 12),
```

```
        ("C", "D", 4),

        ("C", "E", 10),
        ("D", "C", 4),
        ("D", "E", 15),
        ("E", "F", 3),
        ("E", "Z", 5),

        ("F", "G", 8),
        ("F", "Z", 16),
        ("F", "E", 3),

        ("G", "F", 8),
        ("G", "Z", 7)
    ]
print ("=== Dijkstra ===")
print ("A >> Z:")
print (dijkstra(edges, "A", "Z"))
```