```python
from itertools import permutations

def tsp_bruteforce(graph, start):
    nodes = list(graph.keys())
    nodes.remove(start)
    min_path = None
    min_cost = float('inf')

    for perm in permutations(nodes):
        current_cost = 0
        current_path = [start] + list(perm) + [start]
        for i in range(len(current_path)-1):
            current_cost += graph[current_path[i]][current_path[i+1]]

        if current_cost < min_cost:
            min_cost = current_cost
            min_path = current_path

    return min_path, min_cost

graph = {
    'A': {'A':0, 'B':10, 'C':15, 'D':20},
    'B': {'A':10, 'B':0, 'C':35, 'D':25},
    'C': {'A':15, 'B':35, 'C':0, 'D':30},
    'D': {'A':20, 'B':25, 'C':30, 'D':0}
}

start_node = 'A'
path, cost = tsp_bruteforce(graph, start_node)

print("Shortest path:", " -> ".join(path))
print("Minimum cost:", cost)

```

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>>> %Run -c $EDITOR_CONTENT

  Shortest path: A -> B -> D -> C -> A
  Minimum cost: 80

>>>
```