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Tugas Praktikum 3: Penelusuran / Searching

Manchester = Man	Bham = Bha
Liverpool = Liv	Aberystwyth = Abe
Sheffield = She	Cardiff = Car
Shrewsbury = Shr	Bristol = Bri
Nottingham = Not	Southampton = Sou
Oxford = Oxf	

1. Breadth First Search

a. Dengan cara manual

Queue = {}	Visited = {Man}
Queue = {Liv}	Visited = {Man, Liv}
Queue = {Liv, She}	Visited = {Man, Liv, she}
Queue = {She, Shr}	Visited = {Man, Liv, she, Shr}
Queue = {She, Shr, Not}	Visited = {Man, Liv, she, Shr, Not}
Queue = {Shr, Not}	Visited = {Man, Liv, she, Shr, Not}
Queue = {Not, Abe}	Visited = {Man, Liv, she, Shr, Not, Abe}
Queue = {Not, Abe, Car}	Visited = {Man, Liv, she, Shr, Not, Abe, Car}
Queue = {Not, Abe, Car, Bha}	Visited = {Man, Liv, she, Shr, Not, Abe, Car, Bha}
Queue = {Abe, Car, Bha}	Visited = {Man, Liv, she, Shr, Not, Abe, Car, Bha}
Queue = {Abe, Car, Bha, Oxf}	Visited = {Man, Liv, she, Shr, Not, Abe, Car, Bha, Oxf}
Queue = {Car, Bha, Oxf}	Visited = {Man, Liv, she, Shr, Not, Abe, Car, Bha, Oxf}
Queue = {Bha, Oxf}	Visited = {Man, Liv, she, Shr, Not, Abe, Car, Bha, Oxf}
Queue = {Bha, Oxf, Bri}	Visited = {Man, Liv, she, Shr, Not, Abe, Car, Bha, Oxf, Bri}
Queue = {Oxf, Bri}	Visited = {Man, Liv, she, Shr, Not, Abe, Car, Bha, Oxf, Bri}
Queue = {Bri}	Visited = {Man, Liv, she, Shr, Not, Abe, Car, Bha, Oxf, Bri}
Queue = {}	Visited = {Man, Liv, she, Shr, Not, Abe, Car, Bha, Oxf, Bri}
Queue = {Sou}	Visited = {Man, Liv, she, Shr, Not, Abe, Car, Bha, Oxf, Bri, sou}
Queue = {}	Visited = {Man, Liv, she, Shr, Not, Abe, Car, Bha, Oxf, Bri, sou}

Result = {Manchester, Liverpool, sheffield, Shrewsbury, Nottingham, Aberystwyth, Cardiff, Bham, Oxford, Bristol, southampton}

b. Dengan kode AIMA-Python

```
map_britain = UndirectedGraph(dict(  
    Manchester=dict(Liverpool=30, Sheffield=40),  
    Liverpool=dict(Shrewsbury=70, Nottingham=110),  
    Cardiff=dict(Bristol=50),  
    Oxford=dict(Nottingham=100, Bham=70),  
    Shrewsbury=dict(Bham=50, Aberystwyth=80, Cardiff=110),  
    Aberystwyth=dict(Cardiff=120),  
    Bristol=dict(Bham=90, Southampton=80),  
    Southampton=dict(Oxford=70),  
    Nottingham=dict(Bham=50, Sheffield=40))
```

```

    britain_prob= GraphProblem('Manchester', 'Southampton', map_britain)
    print([node.state for node in
    breadth_first_tree_search(britain_prob).path()])

```

Result

```
['Manchester', 'Sheffield', 'Nottingham', 'Oxford', 'Southampton']
```

2. Depth First Search

a. Dengan cara manual

Stack = {Man(top)}	Visited = {Man}
Stack = {Man, Liv(top)}	Visited = {Man, Liv}
Stack = {Man, Liv, Shr(top)}	Visited = {Man, Liv, Shr}
Stack = {Man, Liv, Shr(top)}	Visited = {Man, Liv, Shr}
Stack = {Man, Liv, Shr, Abe(top)}	Visited = {Man, Liv, Shr, Abe}
Stack = {Man, Liv, Shr, Abe, Car(top)}	Visited = {Man, Liv, Shr, Abe, Car}
Stack = {Man, Liv, Shr, Abe, Car, Bri(top)}	Visited = {Man, Liv, Shr, Abe, Car, bri}
Stack = {Man, Liv, Shr, Abe, Car, Bri, sou(top)}	Visited = {Man, Liv, Shr, Abe, Car, bri, sou}

Result = {Manchester, Liverpool, Shrewsbury, Aberystwyth, Cardiff, Bristol, Southampton}

b. Dengan kode AIMA-Python

```

map_britain = UndirectedGraph(dict(
    Manchester=dict(Liverpool=30, Sheffield=40),
    Liverpool=dict(Shrewsbury=70, Nottingham=110),
    Cardiff=dict(Bristol=50),
    Oxford=dict(Nottingham=100, Bham=70),
    Shrewsbury=dict(Bham=50, Aberystwyth=80, Cardiff=110),
    Aberystwyth=dict(Cardiff=120),
    Bristol=dict(Bham=90, Southampton=80),
    Southampton=dict(Oxford=70),
    Nottingham=dict(Bham=50, Sheffield=40)))

britain_prob= GraphProblem('Manchester', 'Southampton', map_britain)
print([node.state for node in
depth_first_graph_search(britain_prob).path()])

```

Result

```
['Manchester', 'Liverpool', 'Shrewsbury', 'Cardiff', 'Bristol',
'Southampton']
```