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In [1]: import pandas as pd
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In [2]: data = pd.read_csv("books.csv")
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In [3]: data.head(10)
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Out[3]:

	edition	citation	prize	size	inlibrary	buy
0	many	few	ok	small	no	no
1	one	many	not ok	big	no	yes
2	few	few	not ok	big	always	no
3	many	many	not ok	medium	no	yes
4	many	many	ok	small	no	yes

```
In [4]: def package_hypothesis(hypothesis, outcome):
        ln = dict()
        ln['hypothesis'] = hypothesis
        ln['outcome'] = outcome
        return ln

#Test hypotheses
h1 = package_hypothesis(["?", "?", "ok", "?", "?"], "no")
h2 = package_hypothesis(["few", "few", "?", "?", "?"], "no")
h3 = package_hypothesis(["many", "?", "ok", "?", "?"], "yes")
h4 = package_hypothesis(["many", "few", "not ok", "?", "?"], "yes")
h5 = package_hypothesis(["?", "many", "?", "medium", "?"], "yes")
h6 = package_hypothesis(["?", "?", "?", "always", "?"], "no")
h7 = package_hypothesis(["?", "many", "?", "?", "?"], "yes")
h8 = package_hypothesis(["?", "few", "?", "?", "?"], "no")
```

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In [5]: def compare(values, hypo):
        for i in range(len(values)):
            if(hypo[i] != "?"):
                if(values[i] != hypo[i]):
                    return False
        return True

def list_then_eliminate(data, *hypothesis):
    consistent_space = []
    inconsistent_space = []

    for hyp in hypothesis:
        state = True
        for i in range(data.shape[0]):
            if(hyp['outcome'] == data.iloc[i,-1]):
                if(not compare(hypo = hyp['hypothesis'], values = list(d
ata.iloc[i,:-1])[:-1])):
                    inconsistent_space.append(hyp)
                    state = False
                    break
        if(state):
            consistent_space.append(hyp)

    return (inconsistent_space, consistent_space)
```

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In [6]: list_then_eliminate(data, h1,h2,h3,h4,h5,h6,h7,h8)
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Out[6]: ([{'hypothesis': ['?', '?', 'ok', '?', '?'], 'outcome': 'no'},
          {'hypothesis': ['few', 'few', '?', '?', '?'], 'outcome': 'no'},
          {'hypothesis': ['many', '?', 'ok', '?', '?'], 'outcome': 'yes'},
          {'hypothesis': ['many', 'few', 'not ok', '?', '?'], 'outcome': 'yes'},
          {'hypothesis': ['?', 'many', '?', 'medium', '?'], 'outcome': 'yes'},
          {'hypothesis': ['?', '?', '?', 'always', '?'], 'outcome': 'no'}],
          [{'hypothesis': ['?', 'many', '?', '?', '?'], 'outcome': 'yes'},
          {'hypothesis': ['?', 'few', '?', '?', '?'], 'outcome': 'no'}])
```

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In [ ]:
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