

1.

- a. Name of attributes: Unnamed: 0, CRIM, ZN, INDUS, CHAS, NOX, RM, AGE, DIS, RAD, TAX, PTRATIO, B, LSTAT, Price
- b.
  - INDUS and NOX Correlation Coefficient: 0.763651
    - Type of Correlation: Positive
    - Note: Although this is close to 0.8, it is technically below the threshold. It is still notable as a strong correlation.
  - NOX and AGE:
    - Correlation Coefficient: 0.731470
    - Type of Correlation: Positive
    - Note: This correlation is also strong but below the 0.8 threshold.
  - AGE and DIS:
    - Correlation Coefficient: -0.747881
    - Type of Correlation: Negative
    - Note: Another strong correlation that is slightly below the 0.8 threshold.
  - RAD and TAX:
    - Correlation Coefficient: 0.910228
    - Type of Correlation: Positive
  - TAX and RAD:
    - Correlation Coefficient: 0.910228
    - Type of Correlation: Positive

2.

Example 1:

minsup = 0.00001, minconf = 0.05

| Rule   | Support | Confidence | Lift       |
|--|---------|------------|------------|
| (bed_bath_table, perfume) → (market_place)               | 0.00001 | 100%       | 347.342857 |
| (telephony, cool_stuff) → (cine_photo)                   | 0.00001 | 16.67%     | 249.374359 |
| (auto, fashion_bags_accessories) → (musical_instruments) | 0.00001 | 100%       | 154.866242 |
| (bed_bath_table, garden_tools) →                         | 0.00001 | 25%        | 99.647541  |

|   |         |      |           |
|---|---------|------|-----------|
| (construction_tools_lights)                                       |         |      |           |
| (auto,<br>musical_instruments)<br>→<br>(fashion_bags_accessories) | 0.00001 | 100% | 52.175966 |

Example 2:

minsup = 0.00002, minconf = 0.1

| Rule  | Support  | Confidence | Lift      |
|---|----------|------------|-----------|
| (fashion_childrens_clothes) →<br>(fashion_bags_accessories) | 0.000021 | 25%        | 13.043991 |
| (home_comfort) →<br>(bed_bath_table)                        | 0.000442 | 10.8312%   | 1.118618  |

Example 3:

minsup = 0.0000005, minconf = 0.5

| Rule  | Support | Confidence | Lift       |
|---|---------|------------|------------|
| (bed_bath_table,<br>perfume) →<br>(market_place)                  | 0.00001 | 100%       | 347.342857 |
| (auto,<br>fashion_bags_accessories) →<br>(musical_instruments)    | 0.00001 | 100%       | 154.866242 |
| (auto,<br>musical_instruments)<br>→<br>(fashion_bags_accessories) | 0.00001 | 100%       | 52.175966  |
| (construction_tools_lights, bed_bath_table)<br>→ (garden_tools)   | 0.00001 | 100%       | 27.645253  |
| (telephony,   | 0.00001 | 100%       | 26.777533  |

|                               |  |  |  |
|-------------------------------|--|--|--|
| cine_photo) →<br>(cool_stuff) |  |  |  |
|-------------------------------|--|--|--|