|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Transactions | A | B | C | D | E | F | G |  |
| 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 |  |
| 2 | 0 | 0 | 1 | 0 | 1 | 1 | 1 |  |
| 3 | 0 | 1 | 0 | 0 | 1 | 0 | 1 |  |
| 4 | 0 | 0 | 1 | 1 | 1 | 0 | 1 |  |
| 5 | 0 | 1 | 0 | 0 | 1 | 0 | 1 |  |
| 6 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |  |
| 7 | 0 | 1 | 1 | 1 | 0 | 0 | 1 |  |
| 8 | 0 | 0 | 1 | 1 | 1 | 0 | 1 |  |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |
| 10 | 1 | 1 | 1 | 1 | 0 | 0 | 0 |  |
| 11 | 0 | 0 | 1 | 0 | 1 | 0 | 1 |  |
| 12 | 0 | 0 | 1 | 1 | 1 | 0 | 1 |  |

After analyzing the data, the manager found some association rules and wants to figure out their levels of “Support” and “Confidence.” Specifically, she asks you to

1. Compute “Support” and “Confidence” for the rule of {C&G} -->{B}

Transactions in C are

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| G | C | B | Support | Confidence |
| 1 | 1 | 1 | T | T |
| 1 | 1 | 0 | F | T |
| 1 | 0 | 1 | F | f |
| 1 | 1 | 0 | F | T |
| 1 | 0 | 1 | F | f |
| 0 | 0 | 0 | T | T |
| 1 | 1 | 1 | T | T |
| 1 | 1 | 0 | F | T |
| 0 | 0 | 0 | T | T |
| 0 | 1 | 1 | F | f |
| 1 | 1 | 0 | F | T |
| 1 | 1 | 0 | F | T |

4 True out of 24 Transactions

Formula for Support is = Transaction contain both A and B / Total number of Transaction

= 4/24 = 0.16

Formula for Confidence is = Transaction contain both A and B / number of Transaction A Contain

= 4/9 = 0.4

b) Compute “Support” and “Confidence” for the rule of {C&E} -->{B}

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| E | C | B | Support | Confidence |
| 1 | 1 | 1 | T | T |
| 1 | 1 | 0 | F | T |
| 1 | 0 | 1 | F | f |
| 1 | 1 | 0 | F | T |
| 1 | 0 | 1 | F | f |
| 1 | 0 | 0 | F | f |
| 0 | 1 | 1 | F | f |
| 1 | 1 | 0 | F | T |
| 0 | 0 | 0 | T | T |
| 0 | 1 | 1 | F | f |
| 1 | 1 | 0 | F | T |
| 1 | 1 | 0 | F | T |

2cTrue out of 24 Transactions

Formula for Support is = Transaction contain both A and B / Total number of Transaction

= 2/24 = 0.083

Formula for Confidence is = Transaction contain both A and B / number of Transaction A Contain

= 2/7 = 0.285