

## Bookstore Data Mining Queries

### Solution

The student should submit the following document

1. - Document with Rapid Miner screenshots showing the generation of association rules where pairs of books have been bought together

#### Process

##### MARKET BASKET ANALYSIS

Model associations between products by determining sets of items frequently purchased together and building association rules to derive recommendations.

##### Step 1:

Load transaction data containing a transaction id, a product id and a quantifier. The data denotes how many times a certain product has been purchased as part of a transactions.

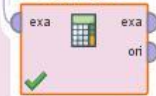
##### Load Transactions



##### Step 2:

Edit, transform & load (ETL) - Aggregate transaction data to account for multiple occurrences of the same product in a transaction. Pivot the data so that each transaction is represented by a row. Transform purchase amounts to binary "product purchased yes/no" indicators.

##### Aggregate



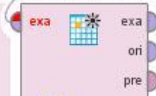
##### Pivot



##### Rename by Replacing



##### Replace Missing Val...



##### Numerical to Binomi...



##### Set Role



##### Step 3:

Using FP-Growth, determine frequent item sets. A frequent item sets denotes that the items (products) in the set have been purchased together frequently, i.e. in a certain ratio of transactions. This ratio is given by the support of the item set.

##### FP-Growth



##### Create Association ...



##### Step 4:

Create association rules which can be used for product recommendations depending on the confidences of the rules.

Outputs: association rules, frequent item set

Size	Support	Item 1	Item 2
1	0.062	Book 16 for the Nigh Charter	
1	0.062	Book 14 for the spy and the traitor	
1	0.062	Book 13 for you	
1	0.062	Book 12 for Crazy Rich Asians	
1	0.062	Book 10 for Texas	
1	0.062	A Gentleman Never Keeps Score	
2	0.062	warehouse_The spy and the traitor	The spy and the traitor
2	0.062	warehouse_Texas Glory	Texas Glory
2	0.062	warehouse_Tell me you are mine	Tell me you are mine
2	0.062	warehouse_Paradise Sky by Jose Lansdale	Paradise Sky by Jose Lansdale
2	0.062	warehouse_Crazy Rich Asians	Crazy Rich Asians
2	0.062	warehouse_Book 21 for the Bible	Book 21 for the Bible
2	0.062	warehouse_Book 20 Asians	Book 20 Asians
2	0.062	warehouse_Book 19 day friends	Book 19 day friends
2	0.062	warehouse_Book 18 Glory	Book 18 Glory
2	0.062	warehouse_Book 17 Keeps Score	Book 17 Keeps Score
2	0.062	warehouse_Book 16 for the Nigh Charter	Book 16 for the Nigh Charter
2	0.062	warehouse_Book 14 for the spy and the traitor	Book 14 for the spy and the traitor
2	0.062	warehouse_Book 13 for you	Book 13 for you
2	0.062	warehouse_Book 12 for Crazy Rich Asians	Book 12 for Crazy Rich Asians