

a)

Variable	Data Type
Transaction	Integer
Item	Nominal
date time	Date-Time
time	Nominal
Period day	Nominal
Weekday Weekend	Nominal

b) Most repeated period\_day in the given examples is afternoon. Afternoon is present in 11569 records.

Values	Absolute Count
afternoon	11569
morning	8404
evening	520
night	14

c)

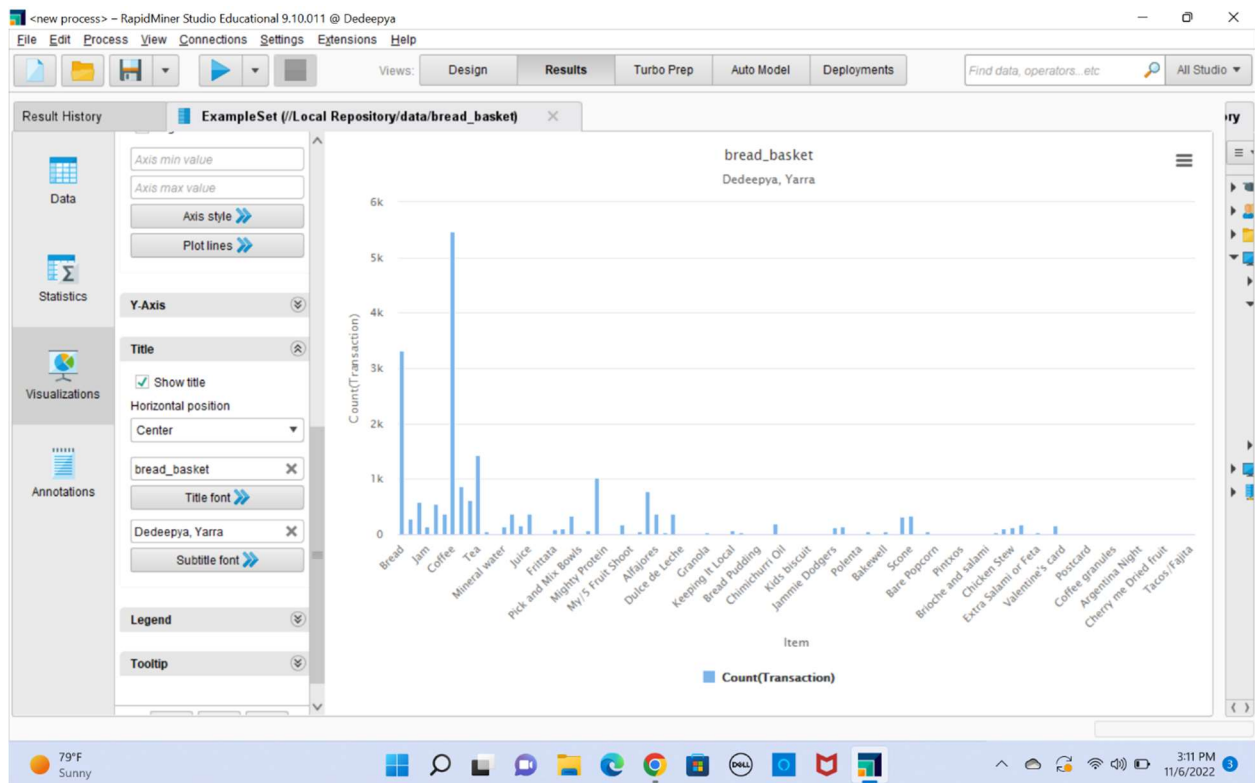
The screenshot shows the RapidMiner Studio Educational 9.10.011 interface. The main window displays the 'Results' tab for an 'ExampleSet (/Local Repository/data/bread\_basket)'. The table below summarizes the attributes and their statistics:

Name	Type	Missing	Statistics
Transaction	Integer	0	Min: 1, Max: 9684, Average: 4976.202
Item	Nominal	0	Least: The BART (1), Most: Coffee (5471), Values: Coffee (5471), Bread (3325), ...[92 more]
date_time	Date-time	0	Earliest date: Jan 11, 2016, Latest date: Dec 3, 2017, Duration: 692 days
time	Nominal	0	Least: 9:43:00 PM (1), Most: 11:06 (52), Values: 11:06 (52), 14:14 (49), ...[1253 more]
period_day	Nominal	0	Least: night (14), Most: afternoon (11569), Values: afternoon (11569), evening (520), night (14)
weekday_weekend	Nominal	0	Least: weekend (7700), Most: weekday (12807), Values: weekday (12807), weekend (7700)

A bar chart for the 'period\_day' attribute shows the distribution of values: afternoon (11569), evening (520), and night (14). The x-axis is labeled 'period\_day' and the y-axis shows the count. The bars are colored green.

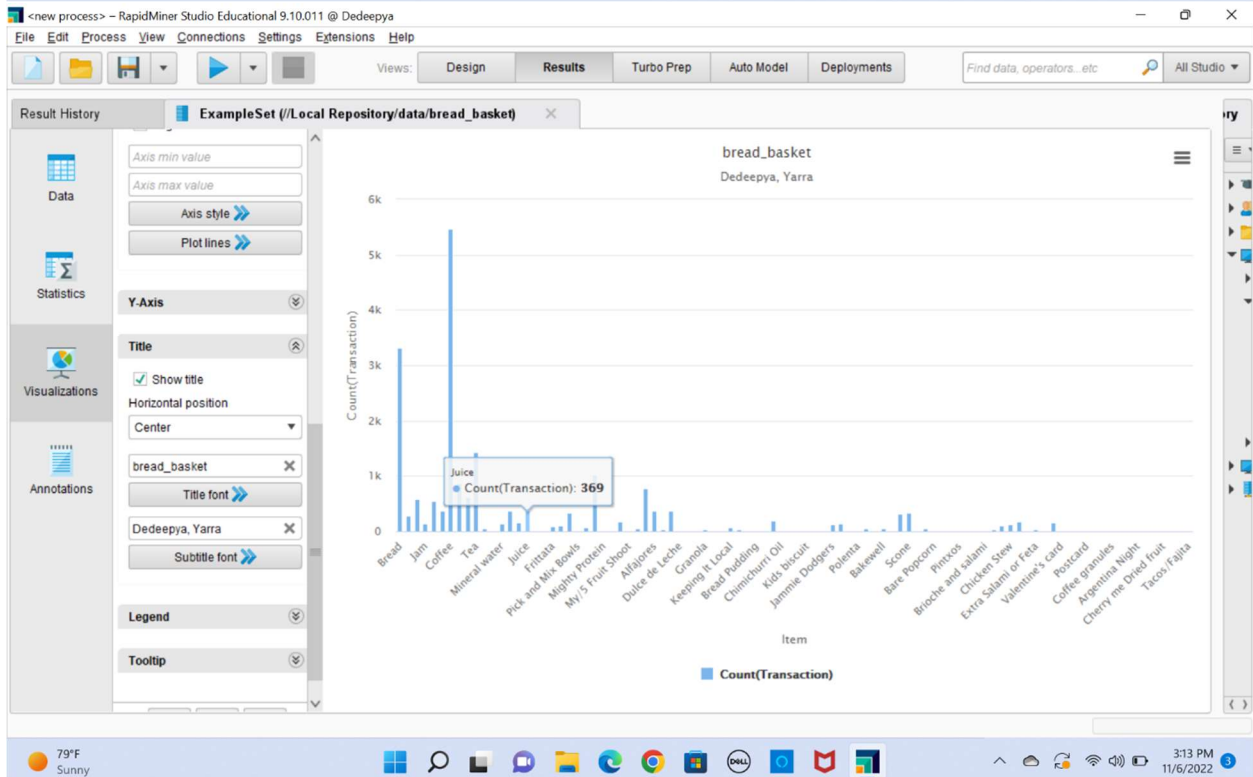
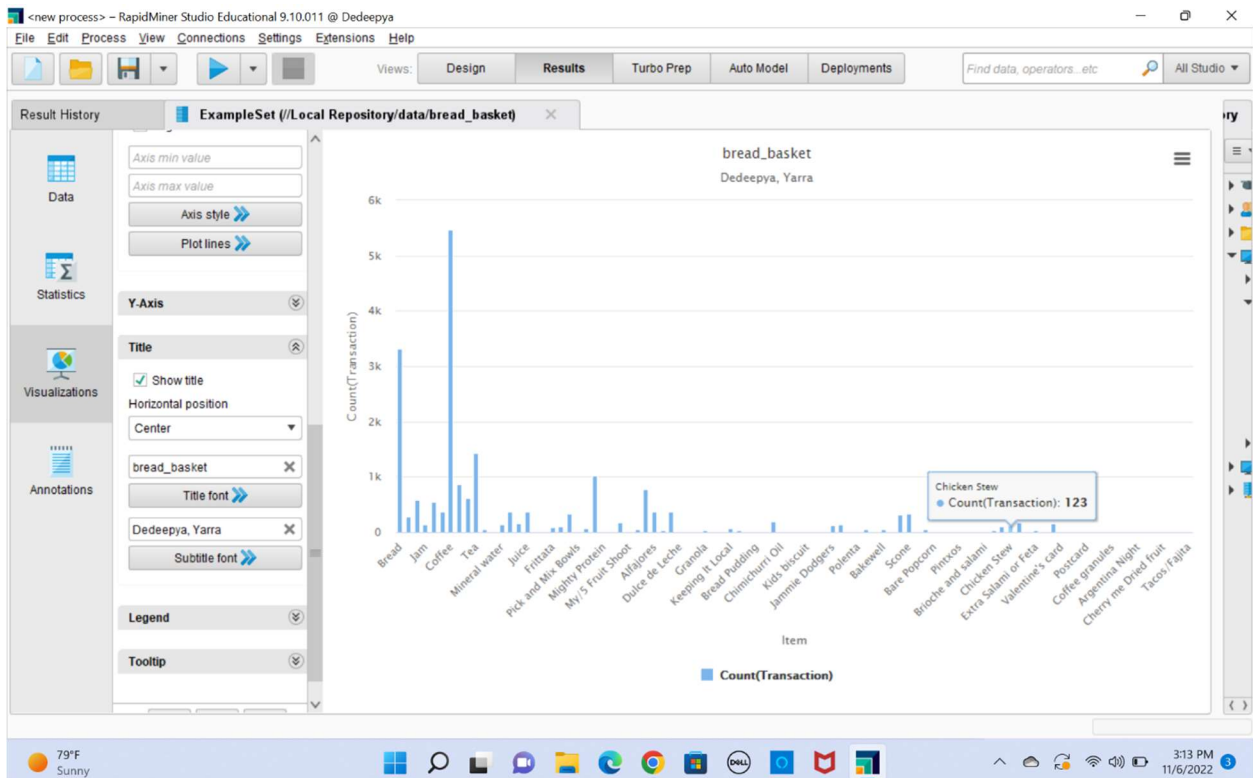
The interface also shows a sidebar with icons for Data, Statistics, Visualizations, and Annotations. The bottom status bar indicates 'Showing attributes 1 - 6' and 'Examples: 20,507 Special Attributes: 0 Regular Attributes: 6'.

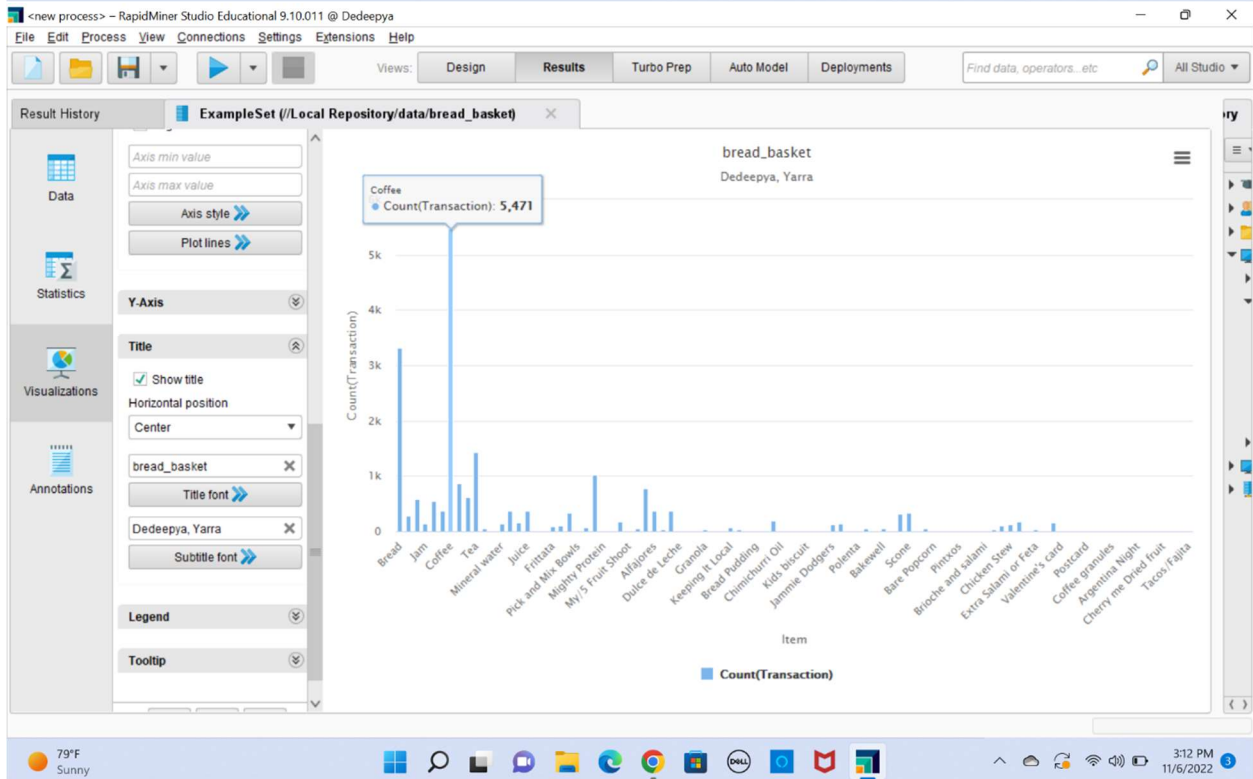
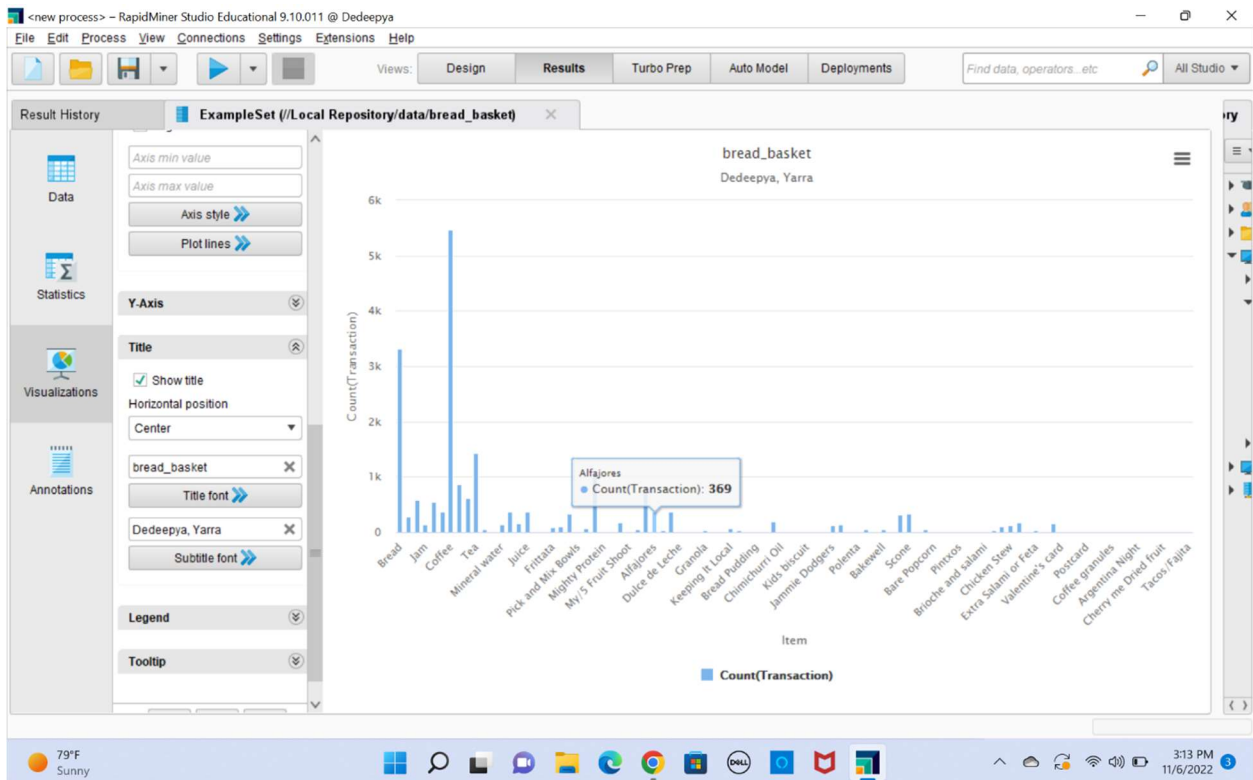
d)

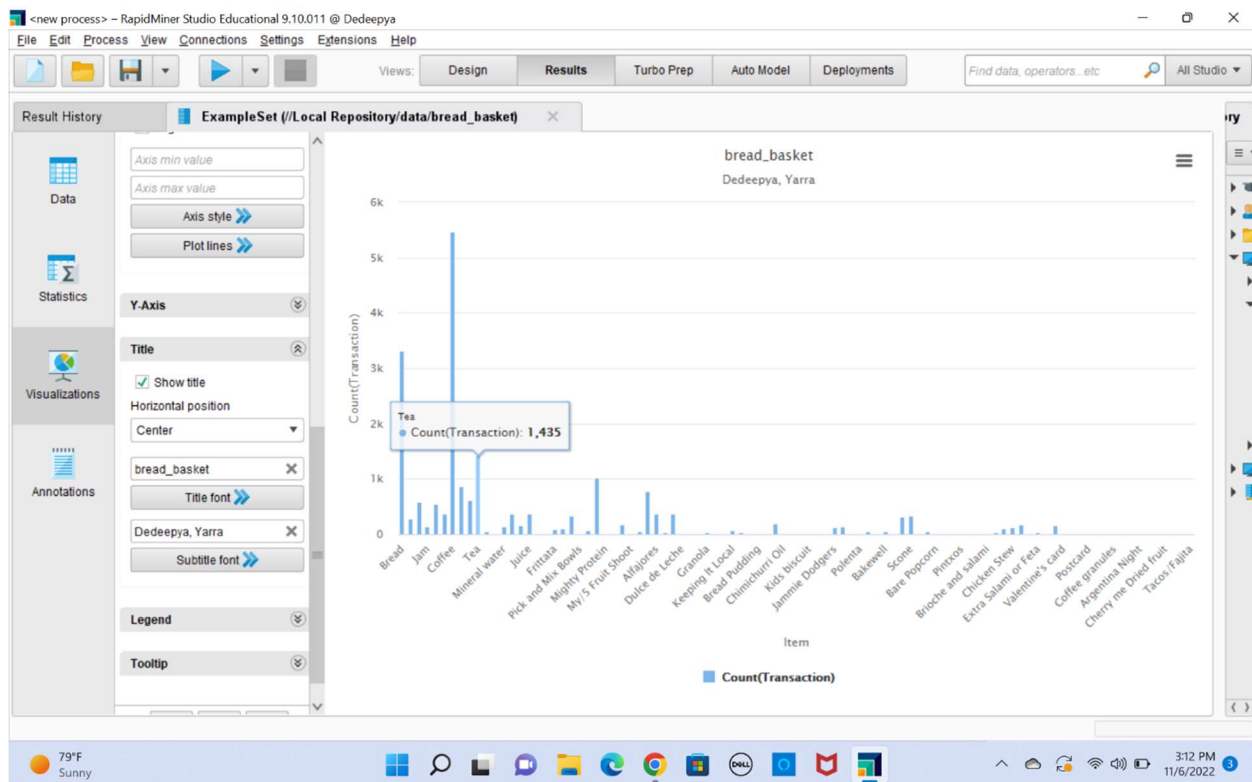


e)

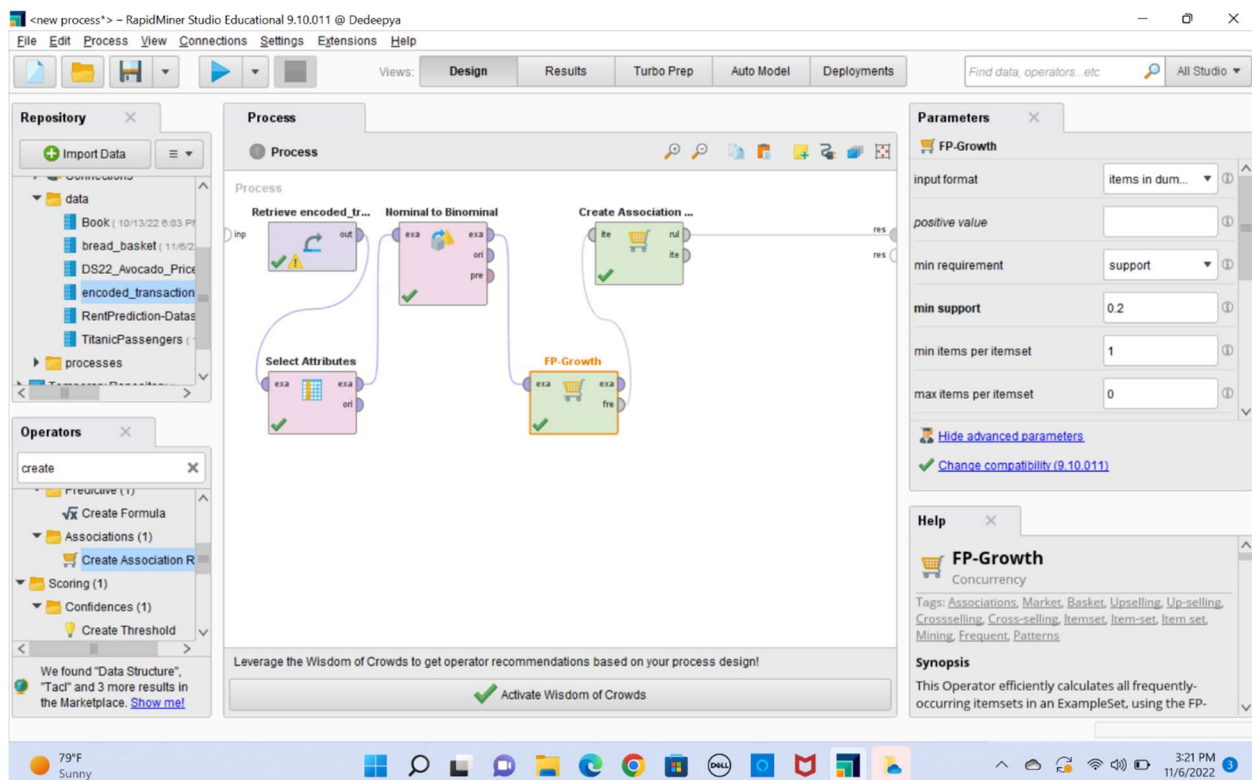
	Count of transactions
Coffee	5471
Tea	1435
Alfajores	369
Juice	369
Chicken Stew	123







## Association-Rule-Mining-Process:



## Results:

Premises	Conclusion	Support	Confidence	LaPlace	Gain	p-s	Lift	Conviction
Coffee	Bread	0.388	0.812	0.939	-0.568	0.067	1.207	1.739
Coffee, Cake	Bread	0.045	0.817	0.990	-0.065	0.008	1.214	1.784
Coffee, Tea	Bread	0.042	0.852	0.993	-0.057	0.009	1.266	2.206

RapidMiner Studio Educational 9.10.011 @ Dedeepya

File Edit Process View Connections Settings Extensions Help

Views: Design Results Turbo Prep Auto Model Deployments

Find data, operators, etc. All Studio

ExampleSet (//Local Repository/data/encoded\_transaction) ExampleSet (//Local Repository/data/bread\_basket)

Result History AssociationRules (Create Association Rules) ExampleSet (//Local Repository/data/encoded\_transaction)

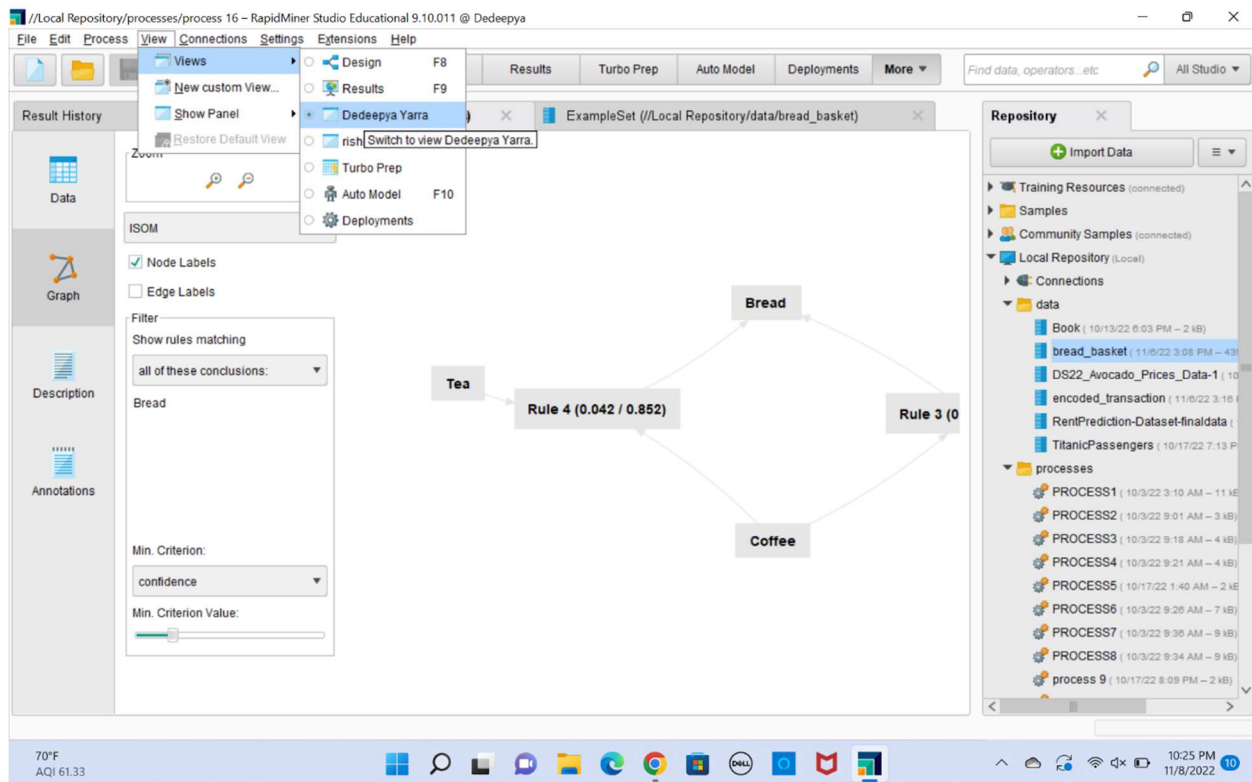
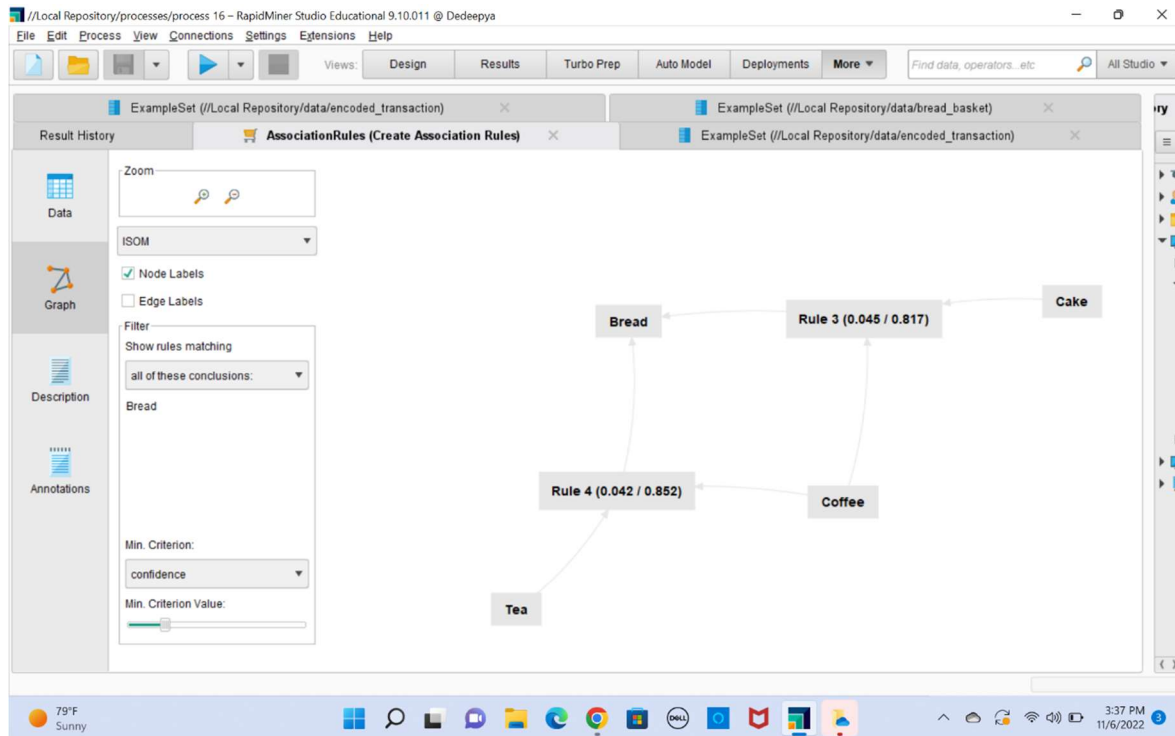
Show rules matching  
all of these conclusions: Bread

Min. Criterion: confidence  
Min. Criterion Value: 0.0

No.	Premises	Conclusion	Support	Confidence	Lift
2	Coffee	Bread	0.388	0.812	0.9
3	Coffee, Cake	Bread	0.045	0.817	0.9
4	Coffee, Tea	Bread	0.042	0.852	0.9

79°F Sunny 3:21 PM 11/6/2022

## Graph Screenshot:





From the below screenshot of AssociationRules we can see that we have 0.817 confidence for rule {coffee, cake} $\rightarrow$ {bread} and also support of 0.042

Coffee and cake are antecedents, Bread is consequent

From this we can say that

There is 0.042 support that the number of transactions that include coffee, cake, and Bread

There is 0.817 confidence for rule i.e probability of the items occurring together by the probability of the occurrence of the coffee and cake.

The screenshot displays the Orange Data Mining software interface. The main window is titled "AssociationRules (Create Association Rules)" and shows the following association rules:

Association Rules	Confidence
[Tea] --> [Bread]	0.803
[Coffee] --> [Bread]	0.812
[Coffee, Cake] --> [Bread]	0.817
[Coffee, Tea] --> [Bread]	0.852

The right sidebar shows the "Repository" panel with a tree view of data sources. The "data" folder is expanded, showing several datasets including "bread\_basket". The bottom status bar indicates the system temperature is 70°F and mostly cloudy.