

## Traceis™ Data Exploration Studio Associative rules

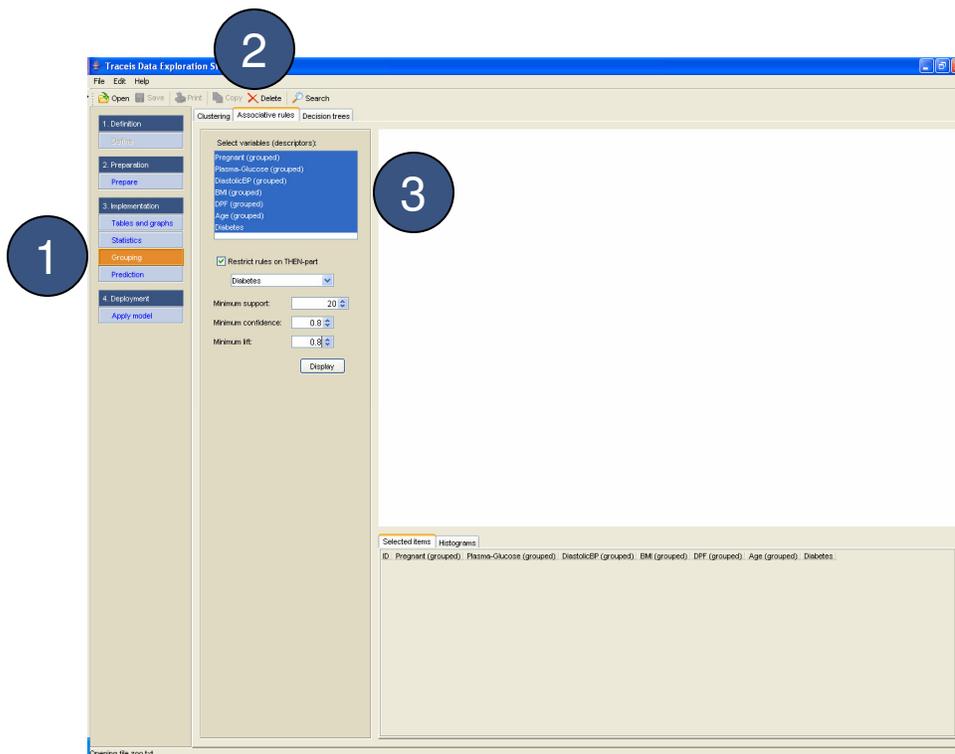
### 1 Select the grouping step

In this example, the diabetes dataset was used. First, select the grouping step.

### 2 Select the associative rules tab

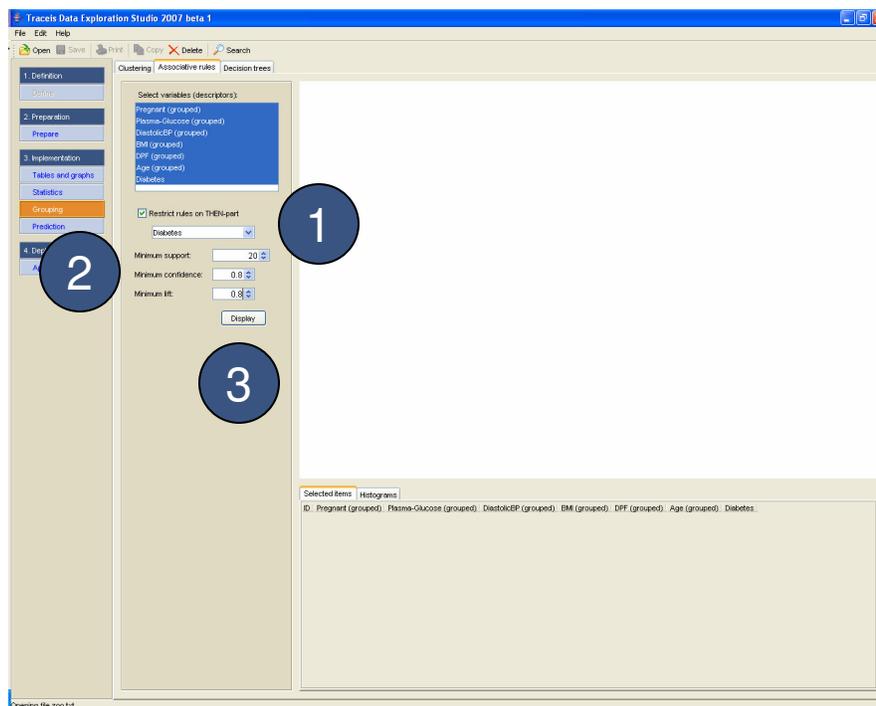
### 3 Select the descriptors

Select all variables to use as descriptors. In this example, all variables were selected. To select multiple non-contiguous variables, use ctrl-click and for contiguous variables use the shift-click.



# MAKING SENSE OF DATA

- 1 Optionally restrict rules on THEN-part  
In this example, only rules where diabetes is in the THEN-part of the rule are generated.
- 2 Specify minimum rule support, confidence and lift
- 3 Display the rules



# MAKING SENSE OF DATA

## 1 IF-part display

The first column displays the IF-part of the rule.

## 2 THEN-part display

The second column displays the THEN-part of the rule.

## 3 Rule statistics

The following rule statistics are displayed: count, support, confidence and lift.

IF-part	THEN-part	Count	Support	Confidence	Lift
Pregnant (grouped) = low	Diabetes = no	181	0.29	0.891	1.225
Plasma-Glucose (grouped) = low	Diabetes = no	82	0.131	0.943	1.442
BM (grouped) = low	Diabetes = no	80	0.128	0.92	1.406
DiastolicBP (grouped) = medium AND Pregnant (grouped) = low	Diabetes = no	133	0.213	0.821	1.286
Plasma-Glucose (grouped) = low AND Pregnant (grouped) = low	Diabetes = no	41	0.066	0.976	1.493
DiastolicBP (grouped) = normal AND Pregnant (grouped) = low	Diabetes = no	156	0.25	0.843	1.29
BM (grouped) = low AND Pregnant (grouped) = low	Diabetes = no	40	0.064	0.976	1.492
BM (grouped) = normal AND Pregnant (grouped) = low	Diabetes = no	58	0.093	0.921	1.406
DFP (grouped) = low AND Pregnant (grouped) = low	Diabetes = no	88	0.141	0.846	1.284
DFP (grouped) = medium AND Pregnant (grouped) = low	Diabetes = no	68	0.109	0.81	1.238
Age (grouped) = 20-39 AND Pregnant (grouped) = low	Diabetes = no	173	0.277	0.84	1.284
Plasma-Glucose (grouped) = low AND Pregnant (grouped) = medium	Diabetes = no	22	0.035	0.88	1.346
BM (grouped) = low AND Pregnant (grouped) = medium	Diabetes = no	21	0.034	0.913	1.385
BM (grouped) = low AND Plasma-Glucose (grouped) = medium	Diabetes = no	63	0.101	0.869	1.402
DiastolicBP (grouped) = normal AND Plasma-Glucose (grouped) = low	Diabetes = no	70	0.112	0.946	1.447
BM (grouped) = normal AND Plasma-Glucose (grouped) = low	Diabetes = no	22	0.035	0.917	1.402
BM (grouped) = obese AND Plasma-Glucose (grouped) = low	Diabetes = no	28	0.045	0.933	1.427
DFP (grouped) = low AND Plasma-Glucose (grouped) = low	Diabetes = no	60	0.098	0.862	1.471
DFP (grouped) = medium AND Plasma-Glucose (grouped) = low	Diabetes = no	26	0.042	0.963	1.473
Age (grouped) = 20-39 AND Plasma-Glucose (grouped) = low	Diabetes = no	70	0.112	0.946	1.447
BM (grouped) = severe obese AND Plasma-Glucose (grouped) = High	Diabetes = yes	41	0.066	0.82	2.359
Age (grouped) = 40-59 AND Plasma-Glucose (grouped) = High	Diabetes = yes	38	0.061	0.844	2.44
BM (grouped) = low AND DiastolicBP (grouped) = normal	Diabetes = no	65	0.104	0.915	1.4
DFP (grouped) = low AND BM (grouped) = low	Diabetes = no	46	0.074	0.92	1.407
DFP (grouped) = medium AND BM (grouped) = low	Diabetes = no	24	0.039	0.889	1.359
Age (grouped) = 20-39 AND BM (grouped) = low	Diabetes = no	65	0.104	0.956	1.462
DFP (grouped) = medium AND BM (grouped) = normal	Diabetes = no	44	0.071	0.815	1.246
Age (grouped) = 20-39 AND BM (grouped) = normal	Diabetes = no	98	0.159	0.859	1.253
DiastolicBP (grouped) = normal AND Plasma-Glucose (grouped) = medium AND Pregnant (grouped) = low	Diabetes = no	113	0.181	0.876	1.34
BM (grouped) = low AND Plasma-Glucose (grouped) = medium AND Pregnant (grouped) = low	Diabetes = no	31	0.05	1	1.529
BM (grouped) = normal AND Plasma-Glucose (grouped) = medium AND Pregnant (grouped) = low	Diabetes = no	42	0.067	0.913	1.386
DFP (grouped) = low AND Plasma-Glucose (grouped) = medium AND Pregnant (grouped) = low	Diabetes = no	65	0.104	0.855	1.308
DFP (grouped) = medium AND Plasma-Glucose (grouped) = medium AND Pregnant (grouped) = low	Diabetes = no	49	0.079	0.817	1.249
Age (grouped) = 20-39 AND Plasma-Glucose (grouped) = medium AND Pregnant (grouped) = low	Diabetes = no	127	0.204	0.858	1.312
DiastolicBP (grouped) = normal AND Plasma-Glucose (grouped) = low AND Pregnant (grouped) = low	Diabetes = no	39	0.062	0.875	1.491

# MAKING SENSE OF DATA

- 1 Click on header to sort
- 2 Click on row to view observations

The screenshot displays the Tracels Data Exploration Studio 2007 beta 1 interface. The main window shows a decision tree table with columns for F-part, THEN-part, Count, Support, Consequence, and Lift. A red circle labeled '1' points to the 'Diabetes = no' header in the 'THEN-part' column. A second red circle labeled '2' points to a row in the table where 'Diabetes = yes' is the consequence. Below the table, there are histograms for various variables: ID, Pregnant (grouped), Plasma-Glucose (grouped), DiastolicBP (grouped), BMI (grouped), DFF (grouped), Age (grouped), and Diabetes. A red circle labeled '4' is positioned at the bottom right of the interface.

F-part	THEN-part	Count	Support	Consequence	Lift
DFF (grouped) = medium AND BMI (grouped) = normal AND Pregnant (grouped) = low	Diabetes = no	23	0.037	0.92	1.407
Age (grouped) = 20-39 AND BMI (grouped) = normal AND Pregnant (grouped) = low	Diabetes = no	57	0.091	0.95	1.453
DFF (grouped) = low AND BMI (grouped) = obese AND Pregnant (grouped) = low	Diabetes = no	23	0.037	0.821	1.256
Age (grouped) = 20-39 AND BMI (grouped) = obese AND Pregnant (grouped) = low	Diabetes = no	36	0.058	0.8	1.224
Age (grouped) = 20-39 AND DFF (grouped) = low AND Pregnant (grouped) = low	Diabetes = no	85	0.136	0.924	1.413
Age (grouped) = 20-39 AND DFF (grouped) = medium AND Pregnant (grouped) = low	Diabetes = no	65	0.104	0.813	1.243
BMI (grouped) = normal AND Plasma-Glucose (grouped) = medium AND Pregnant (grouped) = no...	Diabetes = no	28	0.045	0.824	1.26
Age (grouped) = 20-39 AND Plasma-Glucose (grouped) = low AND Pregnant (grouped) = medium	Diabetes = no	21	0.034	0.875	1.338
DFF (grouped) = low AND BMI (grouped) = normal AND Pregnant (grouped) = medium	Diabetes = no	25	0.04	0.806	1.233
Age (grouped) = 20-39 AND BMI (grouped) = normal AND Pregnant (grouped) = medium	Diabetes = no	32	0.061	0.821	1.255
Age (grouped) = 40-59 AND Plasma-Glucose (grouped) = high AND Pregnant (grouped) = high	Diabetes = yes	30	0.048	0.833	2.407
BMI (grouped) = low AND DiastolicBP (grouped) = normal AND Plasma-Glucose (grouped) = med...	Diabetes = no	50	0.08	0.962	1.471
Age (grouped) = 20-39 AND DiastolicBP (grouped) = normal AND Plasma-Glucose (grouped) = m...	Diabetes = no	186	0.298	0.812	1.242
DFF (grouped) = low AND BMI (grouped) = low AND Plasma-Glucose (grouped) = medium	Diabetes = no	33	0.053	0.971	1.464
Age (grouped) = 20-39 AND BMI (grouped) = low AND Plasma-Glucose (grouped) = medium	Diabetes = no	49	0.079	0.98	1.499
DFF (grouped) = medium AND BMI (grouped) = normal AND Plasma-Glucose (grouped) = medium	Diabetes = no	34	0.054	0.829	1.268
Age (grouped) = 20-39 AND BMI (grouped) = normal AND Plasma-Glucose (grouped) = medium	Diabetes = no	72	0.115	0.837	1.28
Age (grouped) = 20-39 AND DFF (grouped) = low AND Plasma-Glucose (grouped) = medium	Diabetes = no	128	0.202	0.829	1.268
BMI (grouped) = obese AND DiastolicBP (grouped) = normal AND Plasma-Glucose (grouped) = low	Diabetes = no	24	0.038	0.96	1.468
DFF (grouped) = low AND DiastolicBP (grouped) = normal AND Plasma-Glucose (grouped) = low	Diabetes = no	39	0.062	0.951	1.455
DFF (grouped) = medium AND DiastolicBP (grouped) = normal AND Plasma-Glucose (grouped) = low	Diabetes = no	25	0.04	0.862	1.471
Age (grouped) = 20-39 AND DiastolicBP (grouped) = normal AND Plasma-Glucose (grouped) = l...	Diabetes = no	62	0.099	0.954	1.459
Age (grouped) = 20-39 AND BMI (grouped) = normal AND Plasma-Glucose (grouped) = low	Diabetes = no	21	0.034	0.955	1.46
Age (grouped) = 20-39 AND BMI (grouped) = obese AND Plasma-Glucose (grouped) = low	Diabetes = no	21	0.034	0.913	1.386
Age (grouped) = 20-39 AND DFF (grouped) = low AND Plasma-Glucose (grouped) = low	Diabetes = no	39	0.062	0.975	1.491
Age (grouped) = 20-39 AND DFF (grouped) = medium AND Plasma-Glucose (grouped) = low	Diabetes = no	25	0.04	0.862	1.471
BMI (grouped) = severely obese AND DiastolicBP (grouped) = normal AND Plasma-Glucose (gro...	Diabetes = yes	25	0.04	0.833	2.407
DFF (grouped) = medium AND DiastolicBP (grouped) = normal AND Plasma-Glucose (grouped) = ...	Diabetes = yes	22	0.035	0.815	2.354
DFF (grouped) = low AND BMI (grouped) = low AND DiastolicBP (grouped) = normal	Diabetes = no	36	0.058	0.823	1.412
DFF (grouped) = medium AND BMI (grouped) = low AND DiastolicBP (grouped) = normal	Diabetes = no	21	0.034	0.875	1.338
Age (grouped) = 20-39 AND BMI (grouped) = low AND DiastolicBP (grouped) = normal	Diabetes = no	54	0.087	0.947	1.449
DFF (grouped) = medium AND BMI (grouped) = normal AND DiastolicBP (grouped) = normal	Diabetes = no	38	0.061	0.809	1.237
Age (grouped) = 20-39 AND BMI (grouped) = normal AND DiastolicBP (grouped) = normal	Diabetes = no	87	0.139	0.837	1.279
Age (grouped) = 20-39 AND DFF (grouped) = low AND DiastolicBP (grouped) = normal	Diabetes = no	143	0.229	0.812	1.243