

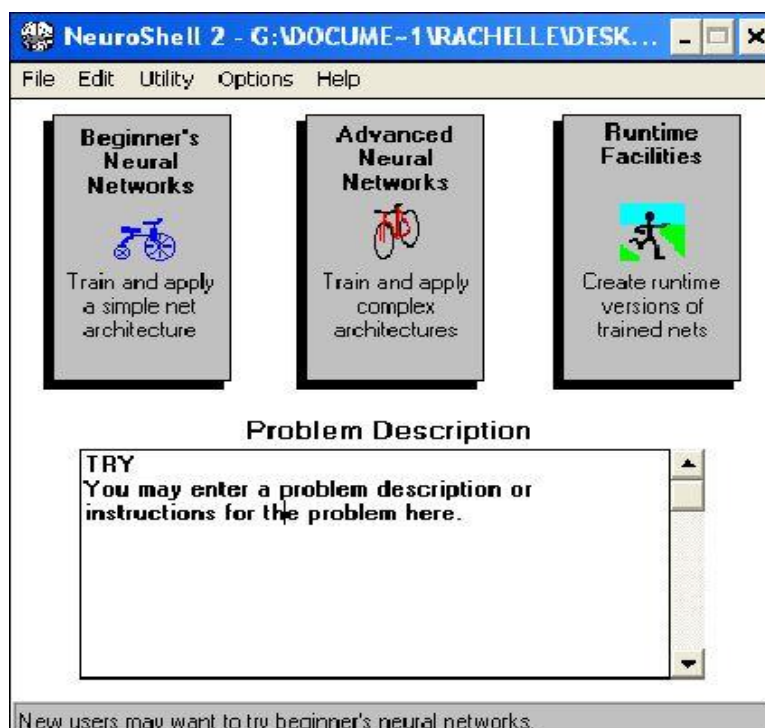
## HOW TO USE NEUROSHELL

The NeuroShell installer is an old software, and would only work in Windows XP or if you have Windows Virtual PC in your windows that will allow you to work in XP mode.

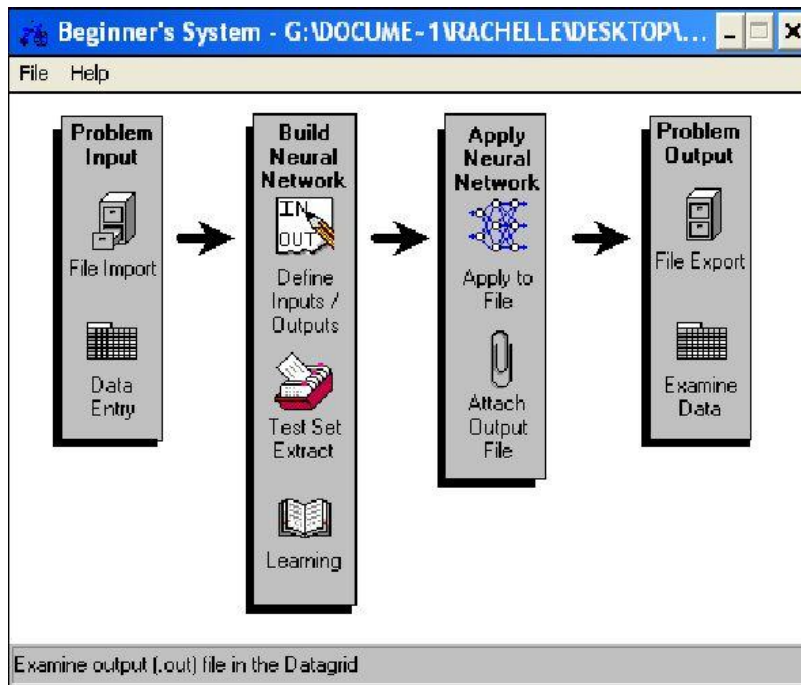
1. Open the NeuroShell folder
2. Click on NS 2 (application).



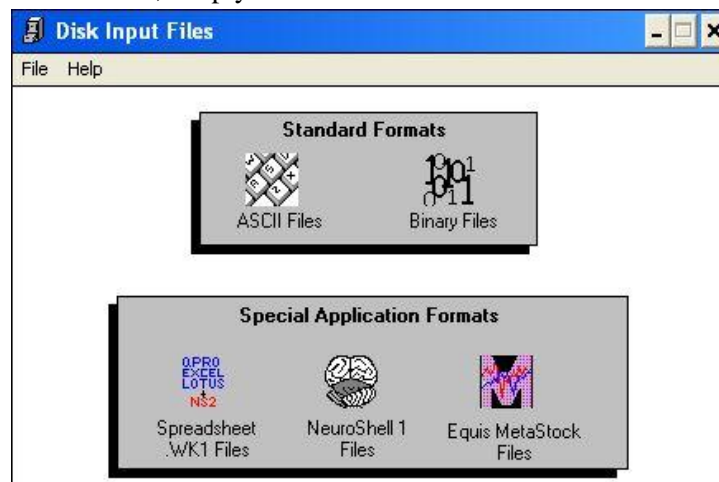
3. Go to File Tab and select New Problem.
4. Select a path and name of the problem or description file
5. A window would appear that would let users to choose whether they want to create a Beginner's NN, Advanced NN or Runtime Facilities. Beginner's NN are best for new users while Advanced are for experienced users.



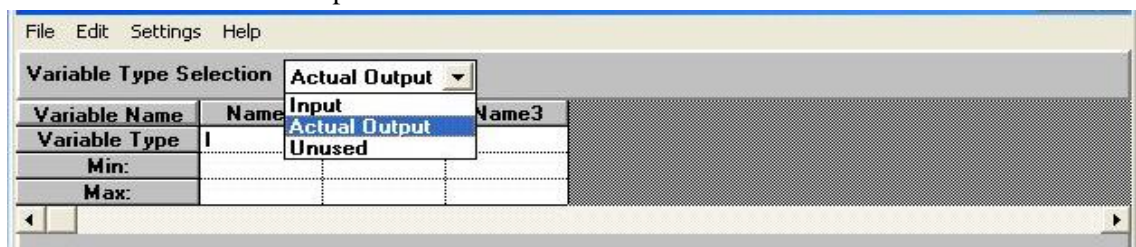
6. Choose the Beginner's NN by double clicking on its icon/picture
7. Simply follow the steps illustrated in the window.



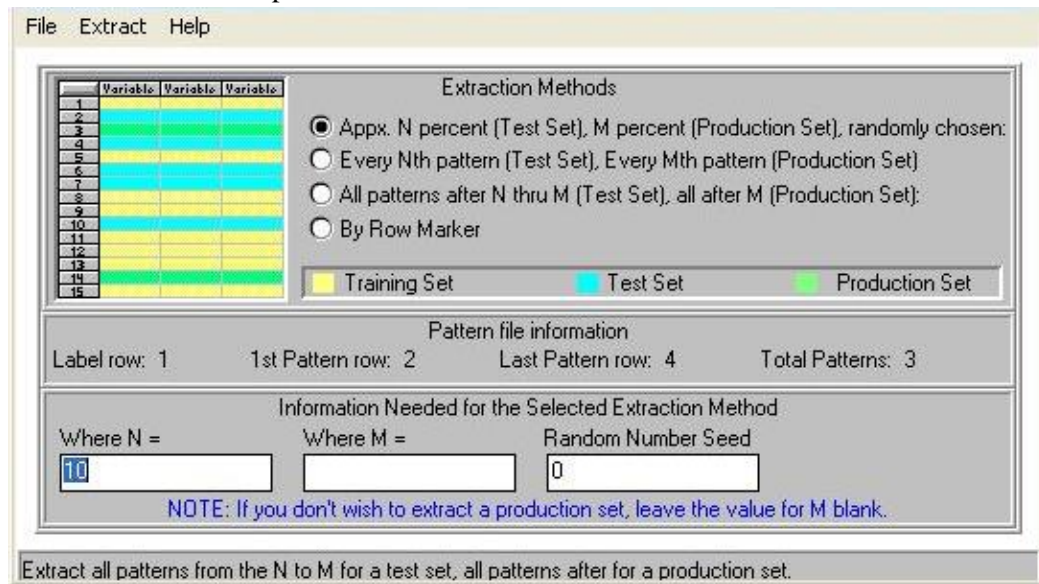
- a. First is the Problem Input. There are two options; either by File Import or by Data Entry. *File Import* allows you to enter ASCII files or Binary files while *Data Entry* allows users to manually enter the input data. To choose, simply double click on the icon.



- b. Next, we build the Neural Network, by defining which column is the input and which is the output by clicking on the Define Inputs/Outputs. Also users can put the min and max or the NeuroShell itself would compute it.



- c. NeuroShell offers several options for *Test Set extraction* as seen from below.



File Extract Help

Variable	Variable	Variable
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

**Extraction Methods**

☒ Appx. N percent (Test Set), M percent (Production Set), randomly chosen:  
☐ Every Nth pattern (Test Set), Every Mth pattern (Production Set)  
☐ All patterns after N thru M (Test Set), all after M (Production Set):  
☐ By Row Marker

Training Set
Test Set
Production Set

**Pattern file information**

Label row: 1    1st Pattern row: 2    Last Pattern row: 4    Total Patterns: 3

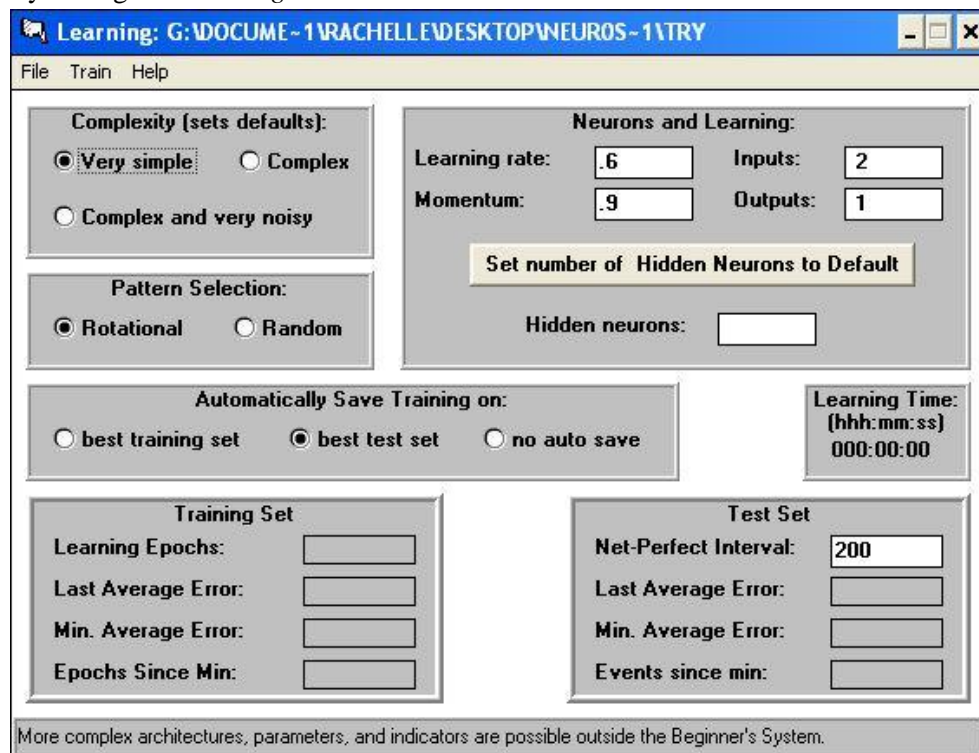
**Information Needed for the Selected Extraction Method**

Where N =     Where M =     Random Number Seed

NOTE: If you don't wish to extract a production set, leave the value for M blank.

Extract all patterns from the N to M for a test set, all patterns after for a production set.

- d. Next is by setting the *Learning Parameters*.



Learning: G:\DOCUME~1\RACHELLE\DESKTOP\NEUROS-1\TRY

File Train Help

**Complexity (sets defaults):**

☒ Very simple    ☐ Complex  
☐ Complex and very noisy

**Pattern Selection:**

☒ Rotational    ☐ Random

**Neurons and Learning:**

Learning rate:     Inputs:   
 Momentum:     Outputs:

Set number of Hidden Neurons to Default

Hidden neurons:

**Automatically Save Training on:**

☐ best training set    ☒ best test set    ☐ no auto save

**Learning Time: (hhh:mm:ss)**  
000:00:00

**Training Set**

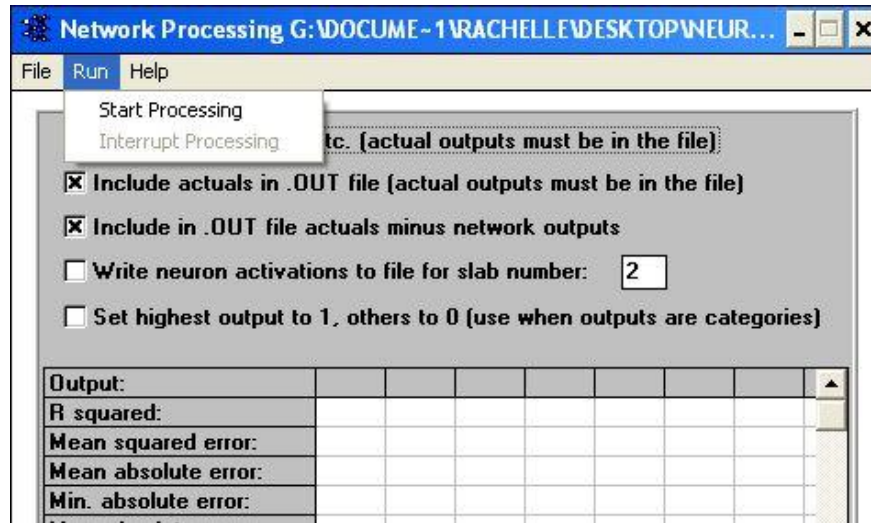
Learning Epochs:   
 Last Average Error:   
 Min. Average Error:   
 Epochs Since Min:

**Test Set**

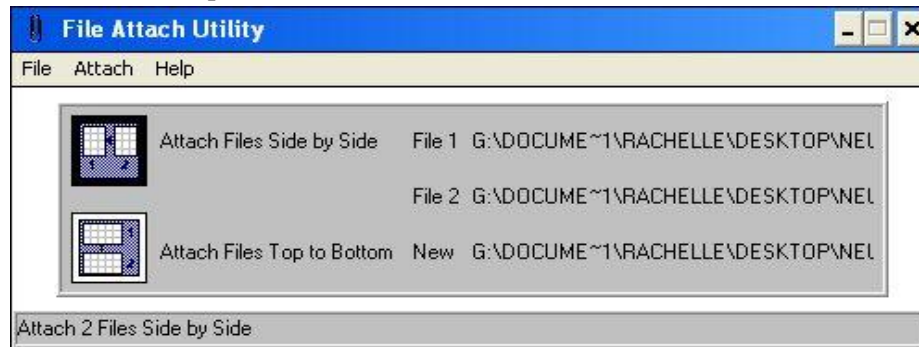
Net-Perfect Interval:   
 Last Average Error:   
 Min. Average Error:   
 Events since min:

More complex architectures, parameters, and indicators are possible outside the Beginner's System.

- e. Apply the Neural Network by clicking on *Apply to file* icon. A window would appear, click on the Run tab and select Start Processing.



- f. Users would also be asked in *Attach Output file* whether he wants to attach the output side to side with inputs or below the inputs.



- g. On the Problem Output box, click on *File Export* icon to export the output or *Examine data* if you want to see the predictions made by network. Output can be seen either on the side of the inputs, or at the bottom of it depending on how you attached outputs on the *Attach output File*.

File Edit Format Help			
Number of row with variable names (blank if none):			<input checked="" type="checkbox"/> left/right
First row containing actual training data:			Size: 17
Note: This is not a commercial spreadsheet and may not load fast enough for large files. The NeuroShell 2 Options menu allows you to change the datagrid call to your			
	A	B	C
1	2.000000000000	-99.000000000000	120.00000000
2	1.000000000000	-99.000000000000	0.00000000
3	1.000000000000	-99.000000000000	179.00000000
4	1.000000000000	67.600000000000	164.60000000
5	2.000000000000	62.000000000000	192.00000000
6	2.000000000000	-99.000000000000	0.00000000
7	1.000000000000	-99.000000000000	210.00000000
8	2.000000000000	64.000000000000	176.60000000
9	2.000000000000	-99.000000000000	256.00000000
10	2.000000000000	68.000000000000	142.60000000

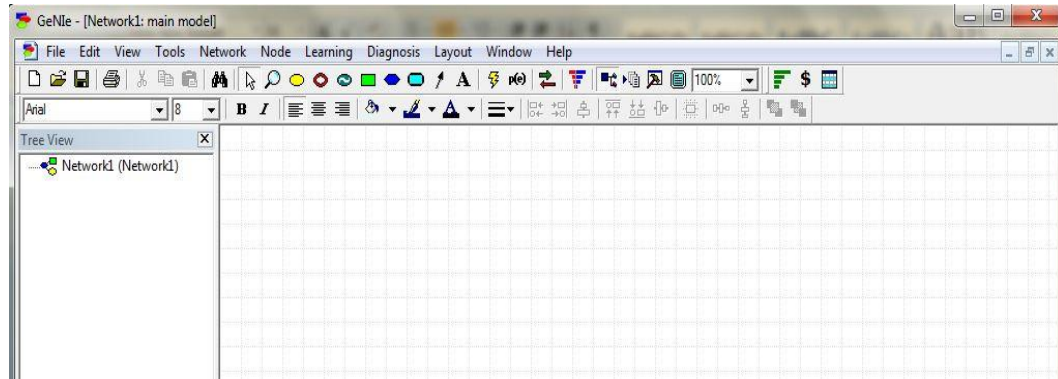


## HOW TO USE GENIE

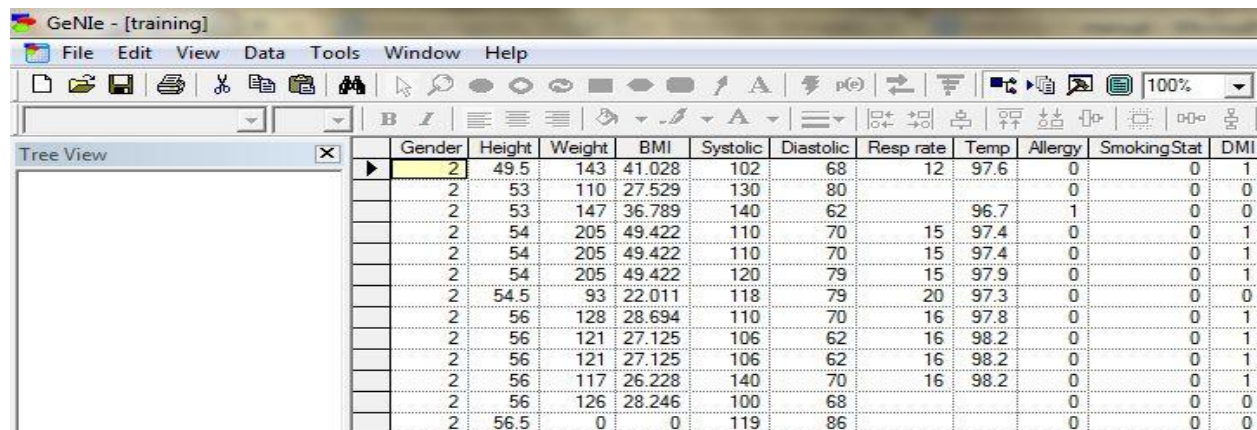
Genie offers two options in creating Bayesian Networks; first is by producing a network based from the data the user has inputted, and second by creating your own network.

### A. Produce a network from the data inputted

1. Select Genie in your list of programs. The interface of Genie would look like this

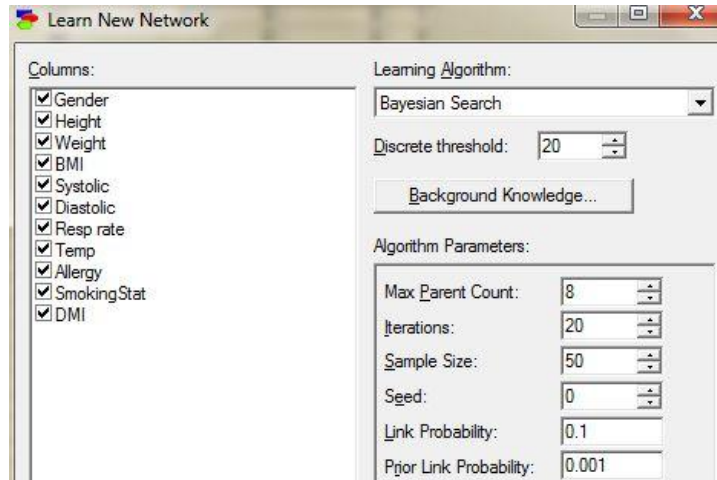


2. Go to File tab and click on “Open Data File”. A window would appear and would ask for your file with a file type of either ‘.txt, .csv, .dat, .gdat’. If successful, window would look like this:

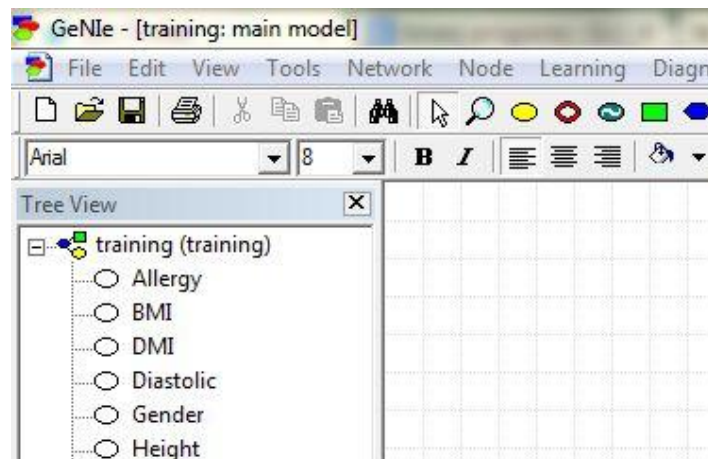


	Gender	Height	Weight	BMI	Systolic	Diastolic	Resp rate	Temp	Allergy	SmokingStat	DMI
▶	2	49.5	143	41.028	102	68	12	97.6	0	0	1
	2	53	110	27.529	130	80			0	0	0
	2	53	147	36.789	140	62		96.7	1	0	0
	2	54	205	49.422	110	70	15	97.4	0	0	1
	2	54	205	49.422	110	70	15	97.4	0	0	1
	2	54	205	49.422	120	79	15	97.9	0	0	1
	2	54.5	93	22.011	118	79	20	97.3	0	0	0
	2	56	128	28.694	110	70	16	97.8	0	0	1
	2	56	121	27.125	106	62	16	98.2	0	0	1
	2	56	121	27.125	106	62	16	98.2	0	0	1
	2	56	117	26.228	140	70	16	98.2	0	0	1
	2	56	126	28.246	100	68			0	0	0
	2	56.5	0	0	119	86			0	0	0

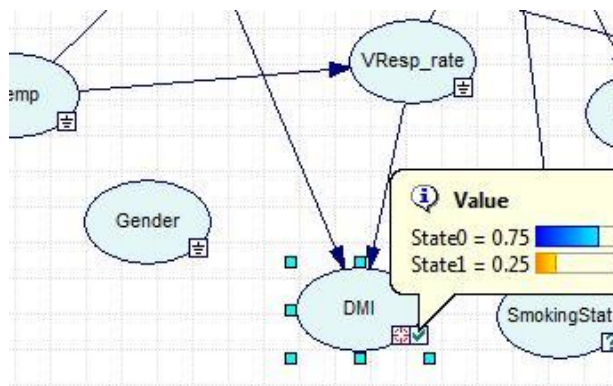
3. If the data in a column is continuous, it has to be discretized first, otherwise, remain. Right click on the column of continuous variable and select *Discretize*. A window would appear that would let the users set the Discretization parameters.
4. After all continuous variables were discretized, go to Data tab and select Learn Network. A window would appear that would allow users to choose some parameters. Then click OK.




5. The Genie will now produce a network best fitted for the data.
6. Forecast can be made by setting the target node and by putting evidences on the input nodes which can be done by right clicking on the nodes listed in the Tree View in the Left side of Genie window.

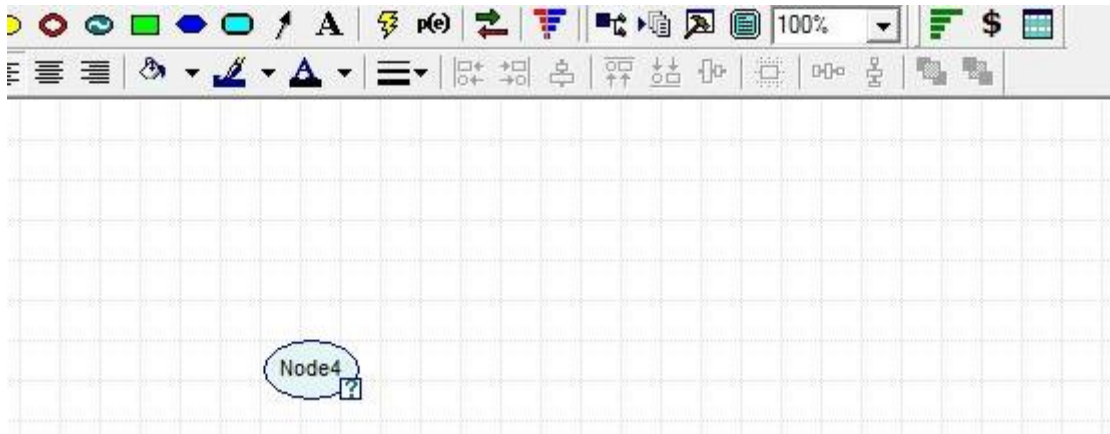


7. To see the output of network, click the check box on the target node, and hover over it which would display the probability table for the states of target node as seen from below.



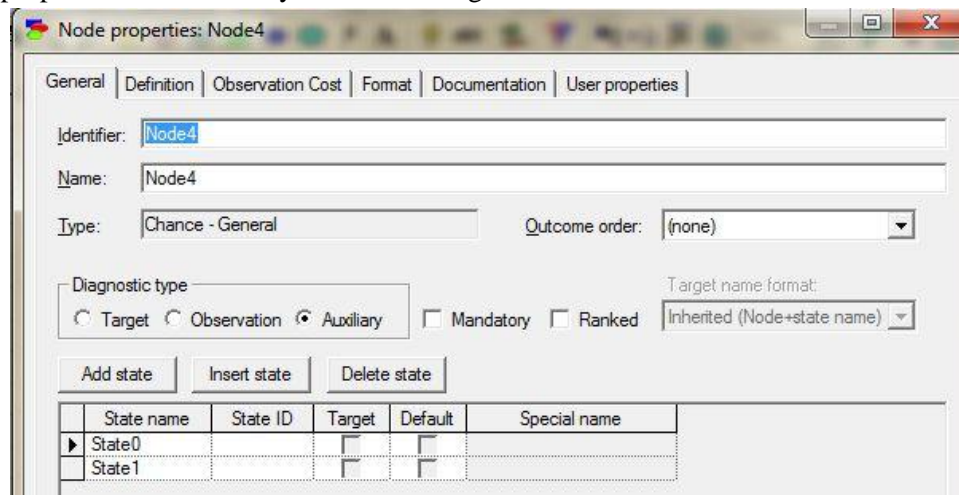
## B. Creating your own network

1. Select Genie in your list of programs.
2. Simply create a node for your variable by clicking this button  from the standard toolbar and by moving the mouse to clear portion of screen in Genie Window. A node will now appear on the screen as shown below.

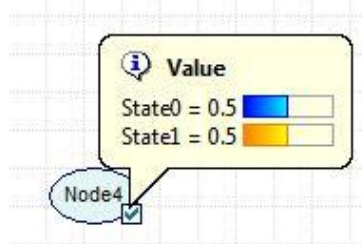



You can change the name of the node by clicking on the 'Node 4' and changing it by whatever your variable name is.

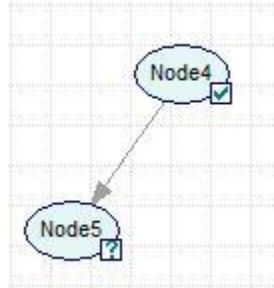
3. Assign properties of the node by double clicking on it.



4. Define the outcomes of the variable by clicking on the *Definition* tab. Here you will define the states of your variables and its probabilities. The node would look like this after initialization.



5. Draw another node and again set the properties of it. You can now draw arcs/edges that show the dependencies by clicking on the  and by dragging it from one node to another.



6. Forecast can be made by putting evidences on the input nodes and by setting the target node.