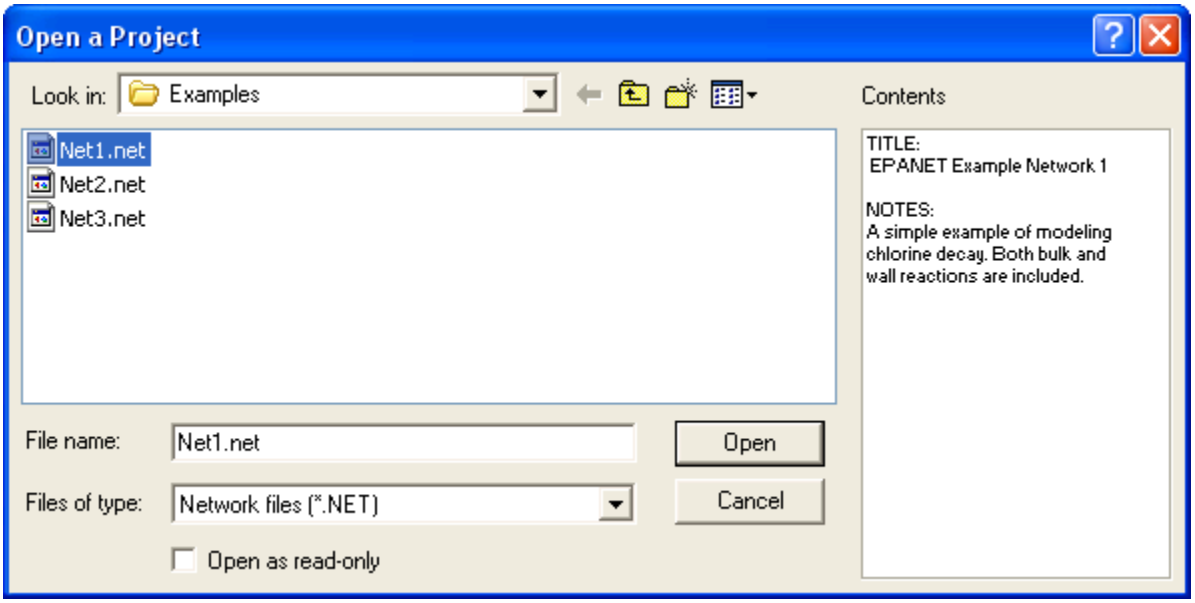
HOMEWORK NO. 6: EPANET EXERCISE

CEEN 4800/6965 - Special Topics
Geographic Information Systems and Hydrologic & Hydraulic Modeling

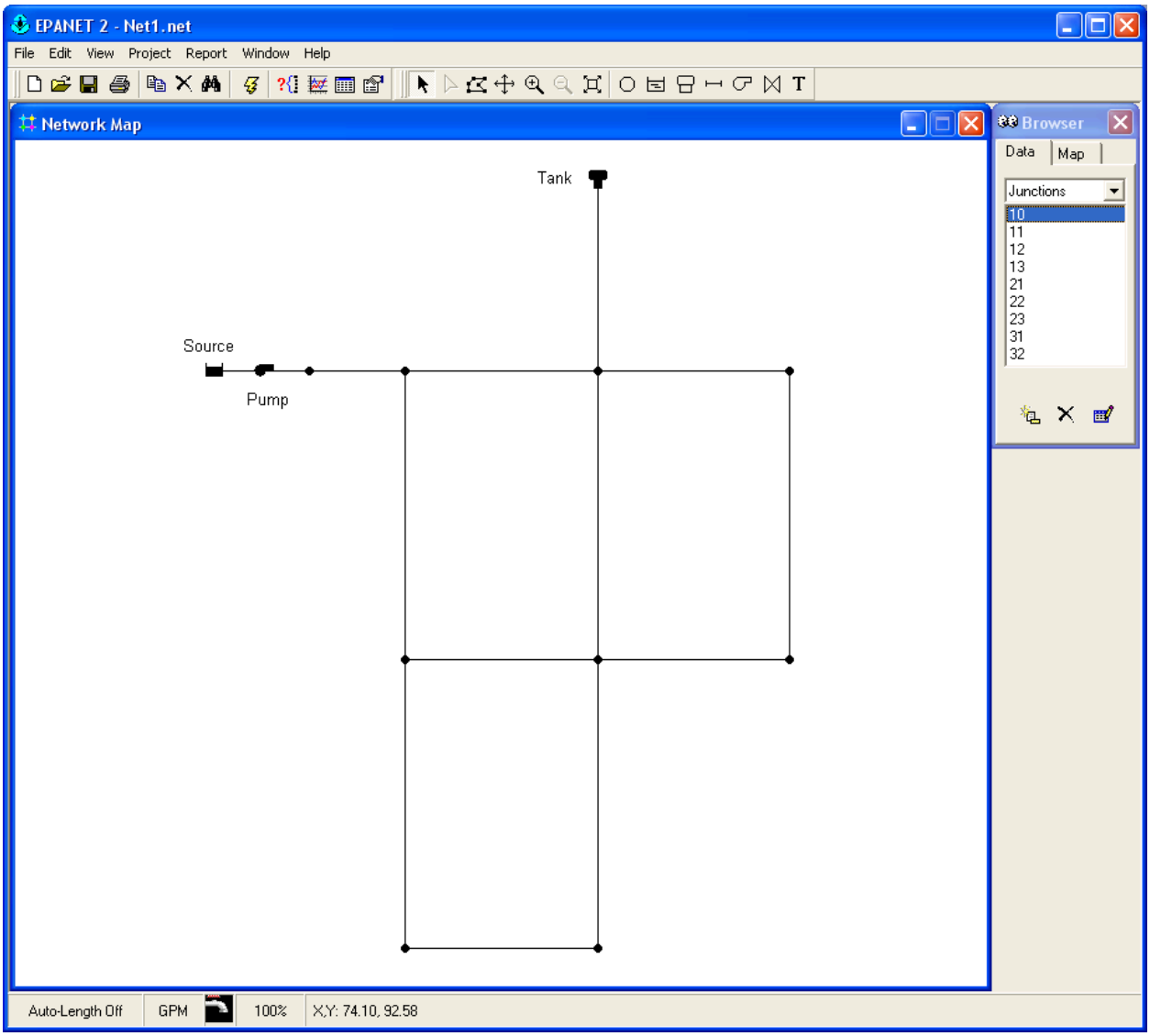
Student Name: _____

1) Launch EPANET software from Start → All Programs → EPANET 2.0

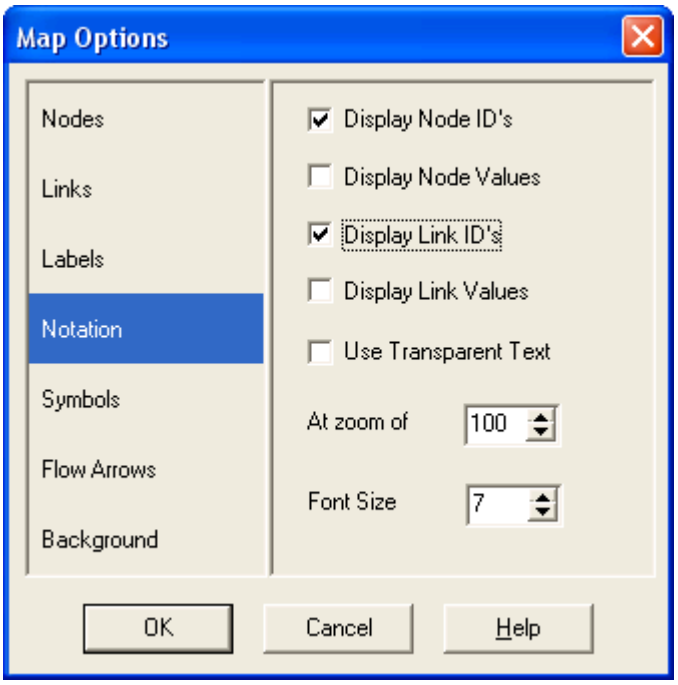
2) From File menu select Open. Navigate to C:\Program Files\EPANET2\Examples folder if necessary. Select the EPANET input file Net1.net and click open.



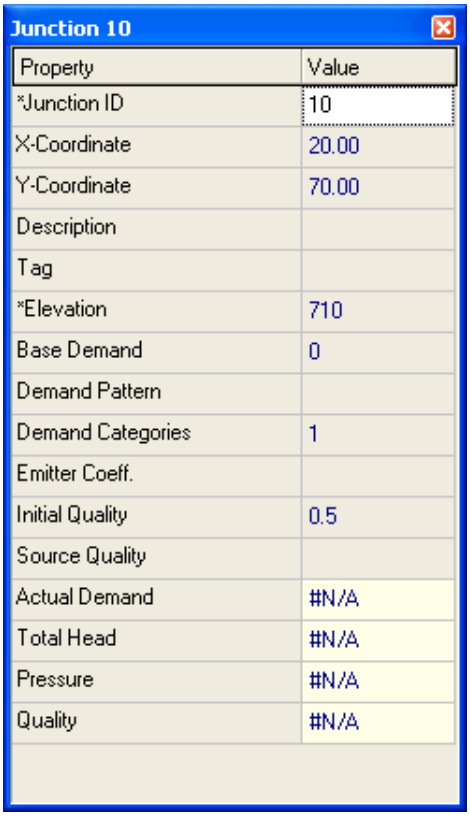
3) Make sure your screen looks like the screenshot shown below. It shows a Network Map and a Browser window.



4) Turn on Junction and Pipe IDs From View menu by selecting Options and then Notation tab as shown below.



5) From the Browser window, double click on Junction 10 to review its input data. Bottom of the query window shows output data marked as #N/A because we have not run the model yet generates the output data.



Property	Value
*Junction ID	10
X-Coordinate	20.00
Y-Coordinate	70.00
Description	
Tag	
*Elevation	710
Base Demand	0
Demand Pattern	
Demand Categories	1
Emitter Coeff.	
Initial Quality	0.5
Source Quality	
Actual Demand	#N/A
Total Head	#N/A
Pressure	#N/A
Quality	#N/A

6) From the Browser window, double click on Pipe 10 to review its input data.

   a) Question: What's the length of pipe? _____

7) From the Browser window, double click on Tank 2 (the only tank in the model) to review its input data.

   a) Question: What's the Elevation of the tank? _____

8) From the Browser window, double click on Reservoir 9 (the only water supply source reservoir in the model) to review its input data.

   a) Question: What's the Total Head of the Reservoir? _____

9) From the Browser window, double click on Pump 9 (the only pump in the model) to review its input data.

   a) Question: What's the initial status of the pump? _____

10) From the Browser window, double click on Curve 1 (the pump curve for Pump 9) to review its input data.

   a) Question: What's the Head for a Flow of 1500 GPM? _____

11) Run the model by clicking on the lightening bolt on the top toolbar.

12) Turn on arrows From View menu by selecting Options and then Flow Arrows tab.

   a) Question: What's the flow direction in Pipe 112? From Junction _____ to Junction _____

13) From the Browser window, double click on Junction 10 to review its output data.

   a) Question: What's the pressure at node 10 in psi (pounds per square inch)? _____

14) To see an animated map of model output results, select the Map tab from the Browser window. Then, map the nodes by pressure and links (pipes) by Flow. Click on the Forward button to see the animated map of hourly variation of node pressures and pipe flows.

   a) Question: What's the total simulation duration in hours? _____

   b) Question: What's the reporting time step in hours? _____

   c) Hint: You can get these answers from the Time window or from Browser → Data → Options → Time.

15) Select Node 10 and click the Graph button on the top toolbar. Select Time Series for Graph Type and Pressure for Parameter to display a graph of pressure at Node 10.

   a) Question: What's the peak pressure at Node 10? _____

   b) Question: What's the peak pressure time at Node 10? _____

16) Repeat the previous step to display a graph of flow for Link 10.

   a) Question: What's the peak flow in GPM at Link 10? _____

   b) Question: What's the peak flow time at Link 10? _____

17) Change the Node 11 demand from 150 GPM to 300 GPM. From the File menu save the project as MyNet1.net. Run the model by clicking on the lightening bolt on the top toolbar.

18) Redisplay the graph of pressure for Node 10.

   a) Question: What's the peak pressure at Node 10? _____

   b) Question: What's the peak pressure time at Node 10? _____

19) Redisplay the graph of flow for Link 10.

   a) Question: What's the peak flow in GPM at Link 10? _____

   b) Question: What's the peak flow time at Link 10? _____