

**CS 451**  
**Activity 8**  
**(As a group of two or three team members)**

**When an organization's problem is solved, the following seven-step model-building procedure should be followed:**

1. Formulate the Problem
  - ☐ Define the problem.
  - ☐ Specify objectives.
  - ☐ Determine parts of the organization to be studied.
2. Observe the System
  - ☐ Determine parameters affecting the problem.
  - ☐ Collect data to estimate values of the parameters.
3. Formulate a Mathematical Model of the Problem
4. Verify the Model and Use the Model for Prediction
  - ☐ Does the model yield results for values of decision variables not used to develop the model?
  - ☐ What eventualities might cause the model to become invalid?
5. Select a Suitable Alternative
  - ☐ Given a model and a set of alternative solutions, determine which solution best meets the organizations objectives.
6. Present the Results and Conclusion(s) of the Study to the Organization
7. Implement and Evaluate Recommendations

**Suggest the seven-step model-building procedure to develop the following police patrol scheduling system (PPSS).**

- Taylor and Huxley (1989) developed a police patrol scheduling system (PPSS).
  - ☐ All San Francisco (SF) police precincts use the PPSS to schedule their officers.
  - ☐ It is estimated that the PSS saves the SF police more than \$5 million annually.
  - ☐ Other cities have also adopted PPSS.
- Following the seven-step model here is a description of PPSS.