

## **Unit 3 – Applications of Home Networks**

### **Preface**

Given a relatively modest understanding of networking technologies, it is possible to build relatively sophisticated systems for monitoring and controlling a variety of residential appliances and systems. Home automation is a growing industry, offering a wide range of components and kits at modest prices to support virtually any home automation need or goal. During this final unit of the networking curriculum, students will complete and present their networking projects, defined in the first unit. Based on time and budget constraints, as well as anticipated student skill levels, the following applications seem feasible:

- Web-based video surveillance/motion detection system
- Voice over IP-related projects
- Web-based home automation projects (controlling monitoring/controlling lights and/or appliances, motion detection, etc.)
- Web-based weather station

### **Concepts & Processes**

See Unit 1 and Unit 2 plans.

### **Essential Questions**

See Unit 1 and Unit 2 plans.

### **Daily Plan**

1. Students will work to complete their semester projects, with the assistance of their instructors and possibly outside mentors (5 days)
2. On the final day of class, students will demonstrate their projects to the class (1 day)

### **Unit Evaluation**

- Classroom observation
- Project presentations
- Written project report

## Technological Problem-Solving Rubric

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>Score</b>
<b>Defines the Problem</b>	Needs a complete explanation of the problem before getting started	Does not state the problem adequately	Defines the problem and proceeds to the next step	Defines the problem clearly and relates it to other situations	
<b>Researches &amp; Gathers Information</b>	Does not collect any information that relates to the topic	Collects little information; some relates to the topic	Collects basic information; most relates to the topic	Collects lots of information; all relates to the topic	
<b>Plans to Solve the Problem</b>	Does not develop a coherent plan to solve the problem	Develops a marginal plan	Develops an adequate plan	Develops a clear plan to solve the problem, with alternative strategies	
<b>Carries Out the Plan</b>	Attempts to solve problem with inadequate strategy	Solves problem without appropriate modifications	Solves problem using design; makes appropriate modifications	Challenges self to try new methods to solve problem	
<b>Evaluates Results</b>	Requires assistance to evaluate solutions	Limited evaluation of solution without assistance; compares solution to problem	Compares actual and expected results	Suggests modifications; designs own evaluation criteria	
<b>Communicates Results</b>	Explains what happened in simple terms	Explains what happened using terminology related to the problem	Explains why one method is better, using specialized language and symbols	Generalizes solution; describes how solution can be used in other situations	

**Comments:**