

## 1. Objectives

IPRO 329 entitled Edutainment attempts to entertain as well as educate simultaneously. Past successes include *Scholars of the Lost Exhibit*, a math and science computer game written for fourth graders, *College Pursuit*, a financial aid computer game for college-bound high school students, and *Credit Safe*, a credit card management computer tool for teenagers.

This semester our target audience is the Department of Energy (DOE). More specifically, we are aiming at helping Radiation Control Technicians (RCTs) who are preparing for their oral certification boards. Our goal this semester is to design, develop, program, and test a computer-based scenario-driven exercise which will simulate the skill-set tested in the oral board. Our intent is to provide the DOE with a proof of concept consisting of one fully programmed scenario as well as at least two additional fully designed scenarios.

While IPRO 329 takes great pride in past achievements, we have set the bar even higher this semester. We anticipate recognition not only from the IPRO office, but also genuine interest from DOE facilities. Should the DOE demonstrate an interest in our proof of concept, a long-term objective would be to convert this IPRO into an EnPRO. The EnPRO could develop and market additional scenarios based on input from the DOE or other interested customers.

Our group is broken into two main teams: Design Team (DT) and Programming Team (PT). The project team leader along with the PT and DT team leaders form the Project Management (PM) team. The current objectives of these teams are as follows:

### Design Team

- Work with Programming Team to implement precise and logical scenarios.
- Design a packet for usability testing once the programming is completed.
- Create an informative and thorough end of semester presentation for IPRO day.

**Programming Team**

- Create a working computer-based scenario that assesses the problem solving and critical thinking skills which are required of a Radiation Control Technician.
- Make the training tool entertaining for the user so that they would want to try additional scenarios.
- Implement audio stimulation to add realism.
- Develop simple and easy to use controls so that the focus is on problem solving, not figuring out how to maneuver through the scenario.

**Project Management**

- Use backwards planning to develop work schedules and task lists.
- Allot at least half of our meeting time for sub-team meetings.
- Brief the group and advisors weekly on team progress.

**2. Results To Date****Design Team**

- Developed backgrounds for each room in the simulation
- Created three basic scenarios for the initial proof of concept.
- Our expert consultant reviewed and approved our scenarios and background rooms.
- Finalized and delivered all design products for use by the programming team.

**Programming Team**

- Developed a user interface for the training tool
- Created an item list along with corresponding effects in the scenario
- Programmed a tool grid with pictures that can be viewed by selecting a tab
- Developed usage errors to notify the users when an incorrect tool is chosen.

**Project Management**

- Developed and established grading criteria.
- Created a work / brief cycle which increased productivity.
- Generated an agenda for each meeting.
- Constructed task lists based on a 4-week cycle.

### 3. Revised Schedule of Events / Tasks

Event	Date
Estimate of Contamination Readings	20 March
Linking Map to Backgrounds	20 March
Opening of Map Locations in Scenario	20 March
Add Contaminated Objects for Scenario	22 March
Finish Scenario (First Draft)	25 March
Test Scenario	25 March
Fix Errors	27 March
Finish Scenario	29 March
Testing Packets Prepared	29 March
Meeting Minutes Due	6 April
Draft Deliverables Due	12 April
Mock IRPO Day Presentation	17 April
Begin User Testing	19 April
IPRO Day Deliverables Due	20 April
IPRO Day Presentation Due	25 April
IPRO Day	27 April

Tasks and Goals	Team
Create computer-based scenario driven exercise	Programming
Develop three complete scenarios for future development	Design
Compile final report	Project Management
Compile all weekly reports	Project Management
IPRO Poster	Design
IPRO Website	Design
Compile and Practice Presentation	All

**See attached Excel Spreadsheet for Individual Tasks Breakdown**

## **4. Updated Individual Assignments and Team Organization**

### **Project Management**

#### *Keith McManus – Team Leader*

Keith is a newcomer to IPRO. He is a graduate student in the Health Physics Professional Science Master's (PSM) program. He is also a captain in the U.S. Army. In addition to his leadership and management skills, Keith is considered a subject-matter expert (in-training) in the Health Physics field. He was responsible for creating a list and sourcing pictures of tools that the RCT (player) might need.

#### *Christopher Hahn – Design Team Leader*

Chris is the head of the design team. His main role in the team is keeping everyone on task and up to speed with project developments. He is also tasked with prioritizing the workload for the team. He worked closely with Tony on the revision of the Flash backgrounds to make sure they were consistent with the game's setting. His main focus for the remainder of the semester will be the major IPRO deliverables, while his team completes the design of the presentation and usability packet.

#### *James Aguirre – Programming Team Leader*

James is the head of the programming team. He has been working with his group to get a working product in time to have product testing and revision if necessary. James schedules out tasks and also facilitates the group's feedback to improve or make certain tasks simpler. He has worked on and completed the inventory items and functions list and is helping with the completion with the text-based interaction in the game.

**Design Team***Anthony Smith*

Tony is the main Macromedia Flash designer because his computer art skills exceed the rest of the group. Since all of the design is completed, Tony will begin working on usability testing packets as well as visual aids for our IPRO Day presentation. He has also taken minutes for each of our group meetings and posted a copy to iGroups.

*Shravani Pasupneti*

Shravani developed detailed written scenarios as well as designing several of the rooms in Flash. She is now poised to develop testing materials and preparing the documentation necessary to receive IRB approval for our usability tests. She will then focus on the script for our final presentation, along with providing content for the webpage.

*Joseph Crowley*

Joseph worked to develop the written scenarios along with Shravani. Earlier in the semester he contributed to the creation of the backgrounds for the game in Flash. He will focus on providing content for the website, creating the abstract for the final presentation, and organizing the power point presentation for IPRO day.

**Programming Team***Yun Tan*

Yun is the primary person working with the interface to get the game working correctly. He has created the interface, the map, and the inventory along with the corresponding buttons that appear in the interface for the map and inventory. He is currently working on linking the map buttons to the corresponding backgrounds that they go with. After this task is completed, he will add in the contaminated object with the corresponding sound file that go with the object.

*Jason Klopping*

Jason is working on the scenario to implement how the game progresses. To keep the game from jumping around, we are allowing access into the rooms based on the progress of the game. Jason is the person who is creating the mapping of the progress to the availability of the rooms. He has also worked on the completion of the inventory item and function list. Along with looking through the scenario Jason is compiling a list of possible questions and answers to be used in a text-based interaction with characters in the game.

*Brandon Potocki*

Brandon created the map layout used in the interface. He is also working on the development of the radiation output, (how the sound should interact with distance from the radiation source). Along with this, he is working on the probe and its functions; the probe can be used in different ways to determine the classification of the radiation. Brandon also played an instrumental role in finishing the item and functionality list.

**Team Advisors***Susan Feinberg*

Susan has been the leader of this IPRO for several semesters. She has prize-winning experience in game design with past IPROs. In addition, she brings expertise in usability testing and human factors design to the team.

*Laurence Friedman*

Laurie is the subject matter expert for the content in this project. He is a Certified Health Physicist and has administered oral certification boards to RCTs in the past. He is a great asset in the reviewing, testing, and marketing, of our product.

## **5. Barriers and Obstacles**

### **Design Team**

Our biggest obstacle was the lack of experience in the design team with using Macromedia Flash to create visuals. We each tried to complete the early work on designing rooms and quickly found that Tony was the most talented. He handled the final revisions of most backgrounds at that point, as he could complete them more quickly and professionally than the other team members. We allocated non-artistic work to the rest of the design team to contribute to the overall progress of the IPRO.

Since nobody on the design team has created a usability test in the past, it will be a challenge to create one that provides the group with enough organized feedback to effectively judge our progress. Our advisor, Susan Feinberg, has dealt extensively with usability tests and will be a valuable source of guidance once we start that process. Her advice will help us complete our task much more effectively.

### **Programming Team**

The programming team only has one member who is proficient with Macromedia Flash, which makes it hard to distribute the actual programming evenly throughout the group. It also makes it difficult to move forward if there is an obstacle that he cannot figure out. This game also takes a lot more code in comparison to previous years. In order to get in proper testing the programming team needs to have a completed project by the start of April, which may be hard to do if any unforeseen complications arise.

### **Project Management**

Our major obstacle to overcome is creating a compressed time table to produce a proof of concept. It does not make sense for this IPRO to waste several semesters on this venture if there is not going to be an interest in what we produce. Therefore, we are attempting to get a bare-bones prototype out to the folks who would use such a tool to see if it would be something valuable. However, with the reality that we may not be able to program these complicated scenarios in such a short time frame, we have developed several scenarios on paper. Since the major design portion of the project has been completed, we have re-focused the Design Team onto usability testing and IPRO Day presentations.