EHS ASPECTS OF A VIRTUAL ENVIRONMENT

Team PUMA: James Schaefer, Rob Close, Zach Sproul, Chris Hinkel

Sponsors: Lisa Greenwood, John Morelli  Faculty Coach: Dr. Donald Boyd

Senior Project 2012

Background

Environmental Health and Safety (EHS) professionals often visit industrial facilities in order to evaluate safety hazards and environmental aspects. For example, dangerous working environments, harmful waste byproducts, and electricity consumption would be recorded. During the visit, the EHS professional would take a tour of the facility and interview the employees. EAVE is a tool that the CETEMS department will use to teach students how to perform such an evaluation and how to record their findings.

Stage 1: Virtual Tour

Using EAVE, the instructor of the class is able to construct a virtual facility. Students can tour the facility, interview employees, and observe the work environment.

Stage 2: Workbooks

Students are able to complete their assessment online. Instructors are able to view, evaluate, and download student workbooks.

Stage 3: User Management

Students and instructors can login using their RIT username and password. Instructors can add and remove additional user accounts.

Stage 4: Team Workbooks

Instructors can assign students to teams. Teams of students can collaborate to assemble and submit one EHS assessment.

Features of EAVE

- Terra Firma Electronics Inc Facility
- Draw - Assembler
- Shop - Head Assembler
- Worksheet

Future Work

Some lower-priority features were postponed to Stage 5 such as:
- Keeping track of which employees the student has spoken with and which departments the student has visited
- Playing audio for interviewee’s answers
- Adding an “Outside” Department
Other future work would be to expand EAVE so it can be used outside of the classroom by real EHS professionals.

Lessons Learned

- Technical knowledge was gained through working with unfamiliar technologies to build a dynamic web application
- Thinking ahead during design phases saves a lot of time later on
- Requirements elicitation can be the most critical process in a project
- Some time could have been saved upfront by using existing PHP frameworks
- It is best to communicate conflict within the team openly, honestly, and face-to-face