ENGR 3400 – Software Verification & Validation

Case Study: Version Control Management System

Scenario

SoftRight Inc. is in the verge of winning a major contract to develop an Open Source Hospital Management System. This is a major software development project that could earn 3.5 million dollars in revenue. The project will be implemented by several developers dispersed globally. SoftRight's Product Manager (the leader of your team) suggests the use of a Version Control Management System to meet the requirements set by an internal audit. There are two major audit requirements:

1. Centralized Source Code Repository
2. Traceability (who, when, why and what) of the changes.

The Product Manager feels that the use of a reliable Version Control Management tool is critically important, not only for the success of this project, but also for maintaining the application on an ongoing basis. The Product Manager is also passionate about Open Source movement and would like to leverage an Open Source Tool to manage this process. Your team has been tasked to research Version Control Management tools (Open Source or commercial) that will meet the audit requirements and will be suitable for your development environment.

OBJECTIVES

Upon completion of this module, students will be able to meet the following **ABET** *Criterion 3* **Outcomes:**

1. **Outcome 7**: *Graduates have an ability to communicate effectively*.
2. **Outcome 11**: *Graduates have an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.*

Step by step:

- Read on your own Lecture Slides on Configuration Management
- Discuss the exercise questions in teams of 2.
- Carry out necessary research
  o Begin with understanding the objective
  o Write down the criteria you will use to search
  o Say why you would prefer one over the others.
- Relate your answers to the Open Source Hospital Management System
- Prepare power points to facilitate discussion
- Be ready to discuss you findings.

Exercise:

1. Define Version Control Management System
2. Justify the need for a Version Control Management System
   - Why is it important?
   - What are its uses?
   - What can happen if a Version Control Management System is not used?
   - What other factors and issues are key?
3. What functionalities are you looking for in a Version Control Management System? Why do you need such functionalities? What criteria are important?
4. Did you find Open Source Version Control Management Tools that meets your criteria? Are they widely used? Are they suitable and fully developed?
5. Did you find a commercial product that was superior to Open Source tool(s)?
6. Does the commercial tool support other changes such as database scripts, configuration files, etc.?
7. Identify three tools and discuss one in detail.
8. Prepare a 5-to-6 page Power Point presentation to be shared with the class (allow approximately 8-10 minutes for your presentation).

(Assume appropriate information when necessary.)

Remarks:

Discuss thoroughly in teams. Remember this is not a Calculus problem.

Source:

Lecture slides, Class Discussion