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ECET 32900 – Lab 7

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**Goal:**

This lab was to learn about Agile and SCRUM project management process as well as how they can be implemented into future embedded system projects.

**Summaries:****1. Agile Philosophy**

- a. Agile is a mindset that emphasizes iterative development, customer collaboration and customization, and adaptability over stiff fixed planning.
- b. Some of the core values are as follows:
  - i. Individuals and interactions are preferred over processes and other tools.
  - ii. Creating working software over comprehensive documentation.
  - iii. Having customer collaboration over contract negotiation.
  - iv. Responding to change over following a fixed plan.
- c. Key principles include:
  - i. Continuous Feedback
  - ii. Sustainable Development
  - iii. Delivering Working Increments frequently.

**2. Scrum Framework**

- a. Scrum is an Agile subset that focuses more on interactive progress through fixed-length cycles called Sprints. These sprints typically last anywhere from 2-4 weeks.
- b. Typical Roles Seen in Scrum Framework:
  - i. Product Owner: Manages the product, creates the task priority, and represents the stakeholders.

- ii. Scrum Master: Implements Scrum practices, removes issues in the process, and ensures that all members are following the Agile principles.
  - iii. Development Team: Those who are responsible for delivering the increments.
- c. Typical Scrum Events:
  - i. Spring Planning: Defines the goals and makes items for the backlog.
  - ii. Daily Scrum: A roughly 15 minute meeting where team members discuss progress.
  - iii. Sprint Review: Demonstrates the completed work to stakeholders and gathers stakeholder feedback.
  - iv. Sprint Retrospective: Reflects on the improvements for the next Sprints.
- d. Typical Scrum Documentation:
  - i. Backlog of prioritized list of features and requirements.
  - ii. A prototyped, shippable product version delivered after each sprint.

### 3. Key Terminologies

- a. User Stories: Description of features from the user's perspective.
- b. Story Points: Metrics used to estimate task complexity based on effort, dependencies, and testing.
- c. Burn-Down Charts: Track remaining work in a Sprint.

### 4. Scrum Implementation

- a. Scrum is suitable for complex projects with changing and evolving user requirements.

- b. Scrum requires collaboration, communication, and interactive feedback loops in order to find success.

**Conclusion:**

I learned that Agile and Scrum prioritize flexibility, teamwork, and incremental delivery enabling teams to effectively and efficiently adapt to changing requirements. The structured roles, events, and documentation in Scrum ensures accountability and transparency on projects.

This can be used for future real-world embedded systems development projects as the sprints allow for iterative hardware and software integrations. The adaptability of the Scrum framework is also great for addressing changing requirements incrementally without compromising the entire project.

## References

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