Project Methodology Plan

Planned Activities and Artifacts

Prototype Iteration Phases

Each iteration will consist of 4 phases that incrementally add features to a running prototype of the project. After each iteration is completed, incomplete features may be rolled over into the next iteration, but the goal of each iteration is to create a working prototype with definitive progress to present to sponsors.

1. Planning (1/2 week)
    - Prototype planning
        - Deciding on what features will be included in the next iteration.
    - Prototype plan
        - A feature document outlining the expected features to be completed in the coming iteration.
    - Decide on new metrics to add
        - Reflect on evaluation from previous iteration and change tracked metrics for this coming iteration.
2. Research & Design (1 week)
    - Sub-teams will research their planned features and develop designs for how to implement them
    - Update old and create new diagrams and documentation
        - Diagrams are updated according to the new features.
3. Engineering & Testing (1-3 weeks)
    - Team updates and sub-team meetings
        - Teams give periodic updates throught the engineering phase. Sub-teams meet independently to work together.
    - Work towards prototype goals to demonstrate progress
    - Sub-team testing and full-team integration testing
        - Sub-teams will test their features independently before integrating them into the full prototype. The full team will then test the integrated prototype to ensure all features work together.
4. Evaluation (1/2 week)
    - Retrospective meeting
        - Meet to discuss what went well / what did not go well.
    - Collect and analyze metrics for this past prototype
        - Collect process, project, and product metrics to see the change of the project over time.
    - Overall prototype evaluation (self-grade on process)
        - The team gives a self-grade on the team's process flows for the past iteration.
    - Scope trimming meeting
        - The whole team meets to trim features that were not feasible to complete in this iteration.

Roles - How they interface with your methodology

- Sub-team leads (both for research and engineering)
- Members of sub-teams are responsible for managing issues for their respective projects
- Group meeting leaders (to keep things on track)

Standards and Quality Practices

- Engineering and testing will be time-boxed. If integration of new features is not completed in the time-frame, cut the feature from the current iteration and either roll it over to the next iteration or cut it entirely during scope trimming.
- Especially risky research will be also time-boxed.
- Artifacts regarding design decisions will be produced during the research and design phase. It is important to document decisions made during research and design so that future teams can refer back to them later.
- Sub-team unit-testing happens in its own time-box.
- Full-team integration testing happens in its own time-box.

Tools

- GitHub Issues: Tracking jobs for members/sub-teams to work on.
- Feature backlog
- Spike backlog: Architecture, Research, Decision