Software Development Process (SDP)

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# **Principles**

* *We answer communications within 24 hours on weekdays.*
* *We’ll use the Github issue tracker to keep track of what each developer is currently working on.*
* *Each Github issue will have a corresponding issue branch where work to complete that issue will take place.*
* *When an issue is complete, a pull request will be made into main.*
* *Pull requests can be merged only after approval from at least one other developer who is familiar with the issue subject.*
* *No breaking changes will be merged into main - “breaking” meaning any changes that could result in errors or misbehavior that other developers may need to fix before they can start work on an unrelated issue.*
* *We will organize issues into weekly sprints with issues assigned at the weekly group meeting, and with the intention that they be completed by the next weekly group meeting.*

# **Process**

* *Sprint Review & Planning (1/week)*
* *Github Issues*
* *Demo/Review with Project Partner (1/week)*

# **Roles**

***Project Management - Dylan Oldham***

*Responsible for meeting management and the issue backlog.*

***Backend Simulation Engineering - Dylan Oldham & George Connor Hutchinson***

*Responsible for creating a simulation of the evolution of microstructural defects in materials which are exposed to radiation, and ensuring the simulation can meet the needs of the project partner.*

***Data Engineering & Data Analysis - Ella Riis***

*Responsible for working with the simulation engineers to extract useful information from the simulations for use by the project partner, and to use insights from the simulation data to improve the simulation. Role may involve directly modifying the simulation to better suit the needs of the project partner.*

***Design & Frontend UI Engineering - Benjamin Reed***

*Responsible for creating the simulation UI according to the needs of the project partner. Works closely with the Data Analyst to interpret the simulation output and create any needed data visualizations.*

# **Tooling**

| **Version Control** | GitHub |
| --- | --- |
| **Project Management** | GitHub Issues and Projects |
| **Documentation** | GitHub Wiki |
| **CI/CD** | GitHub Actions |
| **IDE** | Visual Studio Code |

# **Definition of Done (DoD)**

* *Acceptance criteria are validated*
* *Changes are merged (to main branch)*
* *Unit, integration, and smoke tests are successful*
* *Documentation is updated, incl. deployment instructions if any*
* *Breaking changes are evaluated/avoided*
* *Changes are deployed to staging*

# **Release Cycle**

*Not applicable yet - We are still hashing out the project outcome.*

# **Environments**

*Choice of environment will vary depending on whether we decide to use CUDA next week and whether we decide to support cloud computing.*