Progress Report:

Roles:

- Phillip: Parametrized Queue
- David: Fetch Stage
- Brian: Datapath

Functionalities:

1. **Parametrized Queue (Phillip)**:
   - Implemented a parametrized queue data structure capable of handling variable sizes and configurations.
2. **Fetch Stage (David)**:
   - Developed the fetch stage responsible for fetching instructions from memory.
   - Verified correct instruction fetching using simulation and unit tests.
3. **Datapath (Brian)**:
   - Designed the core datapath for the processor.

Testing Strategy:

- Unit tests: Each component (Parametrized Queue, Fetch Stage, Datapath) was thoroughly tested in isolation using unit tests to verify individual functionalities.

Timing and Energy Analysis: Not Specified

Roadmap: Roles:

- Phillip: Worked on RS as well as the Arithmetic FP
- David: ROB, RAT, RRF, Free List
- Brian: Integrated the Multiplier FP

Features/Functionalities:

- (FP) Multiplier: Brian will modify the datapath to support FP multiplication operations and ensure compatibility with out-of-order execution requirements.
- Support for Out-of-Order Execution:
  - Phillip and David will focus on implementing components essential for out-of-order execution, such as RS, ROB, RAT, RRF, and Free List.
  - These components will enable the processor to execute instructions out of order while maintaining program order correctness and ensuring proper retirement of completed instructions.
- Arithmetic Floating-Point Unit:
  - This unit will be integrated into the datapath to support floating-point arithmetic alongside integer operations.