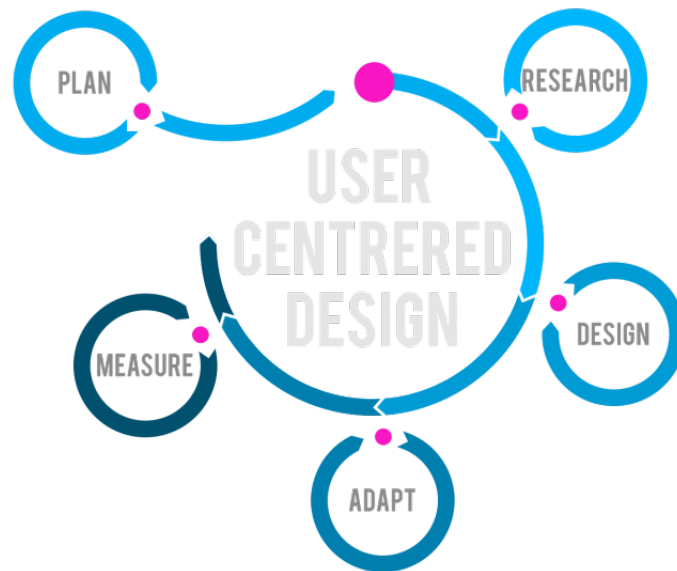A Compilation Process Visualisation and Interaction Ecosystem for Efficient Teaching and Learning

Software design and development process

ID: 1466610

Software design process

The software design process will follow the user centred design (UCD) illustrated below:

The planning and research phase define the user requirements and research the market (i.e. tools already out there). The design phase focuses on how the user interaction will be implemented. This is done through sketching, prototyping, story-boarding etc... The measure phase is the evaluation of the alternative designs to give scores which design route should be chosen.
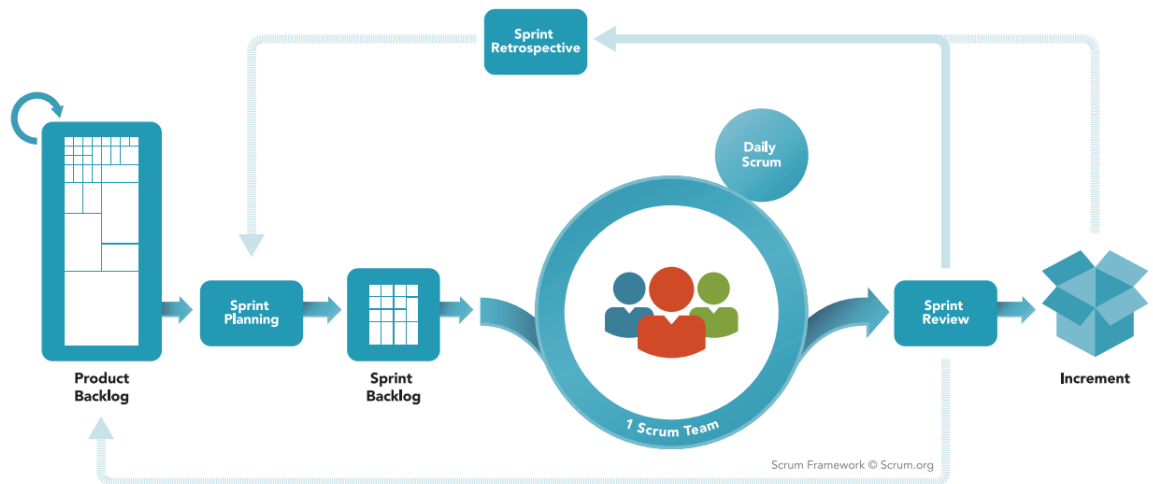
The technologies used in this phase are:

- Sketching as a preliminary phase before prototyping

- Large paper and markers for lo-fi prototyping

- InVision for platform hi-fi prototyping

- Google Scholar for paper research

- User evaluation through walkthrough/think aloud and questionnaire

- Heuristic evaluation using Jakob Nielsen's design principles

Software development process

The software development process will follow a Scrum variant where the team component is eliminated or adapted (like stand-up meeting will be a self reflection on what to complete etc...). The diagram is illustrated below:

The changes to the standard process is that the roles have all been merged into one (the lone developer).

In this case the **product backlog** will be an ordered list of everything that might be needed in the product and is the single source of requirements for any changes to be made to the product. This will be stored in the *Boards* feature of GitLab.

The **sprint backlog** is the set of product backlog items selected for the sprint (divided into todo, doing and done). This is as well stored in the *Boards* section.

The daily scrum will be a reflection time where the developer will spend some time to create a plan for the next 24 hours. This is done by inspecting the work since the last daily scrum and forecasting the work that could be done before the next one.

The sprint review will be removed since stakeholders won't be available all the time and the sprint retrospective will be enabled with the supervisor.

The technologies and tools used in this phase are:

- **Trello** for documentation todo list

- **GanttLab** for live Gantt chart on GitLab

- **GitLab Board** feature for product and sprint backlog

- **GitLab Issues** tracking system

- **JUnit** for TDD