

CMP5354

Software Design

Module Intro

+ModuleOverview:String
+AssessmentOverview: List(String)
+ModuleBreakdown:List(String)
+ProjectLifecycles: List(String)
+DesignStageActivitiesAndTools>List(Strings)

ModuleOverview

Linking Module Overview to First Year

The screenshot shows a software interface for searching through a dataset. On the left, there is a sidebar titled "Search Results Filters" containing fields for "Date Range", "Publisher", "Platform", "Region", "Language", "Stance", and "Article Type". On the right, under "Topic Results", there are six entries, each labeled "Topic X - coverage: 1.2k articles" followed by a horizontal bar indicating progress or coverage. At the bottom of the interface is a button labeled "Create briefing from selection".

Questions to be answered in the Software Design module which build up on your Website Design module:

What is the problem?
(Week 1 - 2)

What will the solution do?
(Week 2-3)

How will the solution look like?
(Week 4-11)

Linking Module Overview to Final Year Project

Project Details #520006



Title: Artificially Intelligent Journalist

Topic Areas: Artificial Intelligent, Natural Language Processing

Tags: IBM

Business Case: Fake news is a big problem and users are losing the ability to trust pieces of content they read online or in the media. Users can often be influenced by articles that play on emotional triggers or portray certain entities/characters in a certain way. For an end user, it can be difficult to see a balanced view of the news surrounding a particular topic and news platforms such as Facebook wish to remain impartial on the content they display.

Research Problem: Create a cross publisher, cross platform view of news content related to a specific topic. This system would be able to provide balanced selection of articles around a particular topic, to give the reader informed articles providing a 'for/against' view.

Technologies: Within your research explore and discuss available alternative technologies in addition to the recommended ones.

- Watson Semantic Analysis [Recommended]
- Azure Text Analysis [Alternative]
- Amazon Comprehend [Alternative]

Skills Needed:

- Semantic Feature Analysis
- Natural Language Processing
- AI Modelling

Questions to be answered for your final year project / skills built up in the Software Design module:

What is the problem?
(Week 1 - 2)

What will the solution do?
(Week 2-3)

How will the solution look like?
(Week 4-11)

What is the final year project timeline?
(Week 12)

AssessmentOverview

AI Guidelines

AI Tools at BCU: Student Guidelines



AI tools Decision Tree



ModuleBreakdown

What is the problem?	Week 1	Module Overview Assessment Overview Module Breakdown Project Lifecycles	Case study briefings
	Week 2	Ethical & Legal Issues, Requirements Engineering, and Risk Assessment	Drafting ethical/legal issues + requirement tables + risk tables for your chosen case study -- build up for D1.
What will the solution do?	Week 3	Use Cases	Sample Quiz preparing for D1

D1	Individual	Quiz	25%
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How will the solution look like?	Week 4	UML Class Diagrams	Drafting class diagrams in groups for chosen case study -- build up to D2
	Week 5	UML Class Diagram Advanced Relationships	Reviewing and re-drafting class diagrams from previous week with annotations -- build up to D2
	Week 6	Linking Module to Careers	D2 Support Session
	Week 7	Sequence Diagrams	Drafting sequence diagrams -- build up to D2
	Week 8	MVP Design + Linking UML to Code	Choosing MVP scope + Deriving MVP from design
	Week 9	Design Patterns	D2 Final Checks
	Week 10	Feedback Workshop (tentative)	D3 Practice and Feedback
	Week 11	Feedback Workshop (tentative)	D3 Practice and Feedback

D2	Group	Coursework	40%
D3	Group	In-person Presentation	25%

**What is the final
year project
timeline?**

Week 12

Final Year Project Briefing

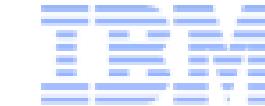
D3 Presentations

D3	Group	In-person Presentation	25%
D4	Individual	Final Year Project Choice Documentation	10%

ProjectLifeCycles

Starting from a given brief...

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What needs to be done to fulfil this?

Research Problem: Create a cross publisher, cross platform view of news content related to a specific topic. This system would be able to provide balanced selection of articles around a particular topic, to give the reader informed articles providing a 'for/against' view.

What needs to be done to fulfil this?

Button design

Implementing
the account
creator

Identifying
features

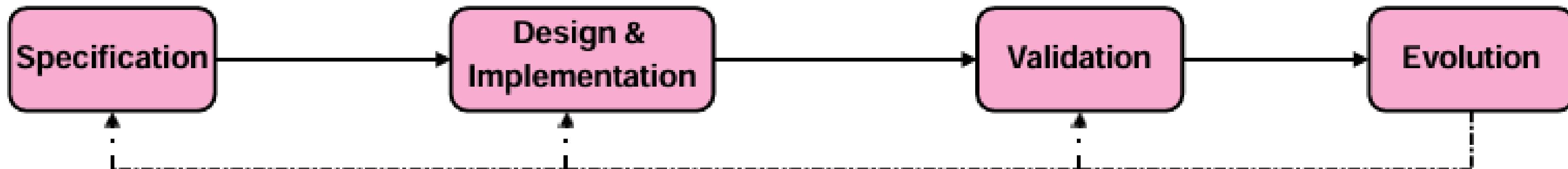
Research Problem: Create a cross publisher, cross platform view of news content related to a specific topic. This system would be able to provide balanced selection of articles around a particular topic, to give the reader informed articles providing a 'for/against' view.

Testing the
selector

Allocating
tasks
to 5 people

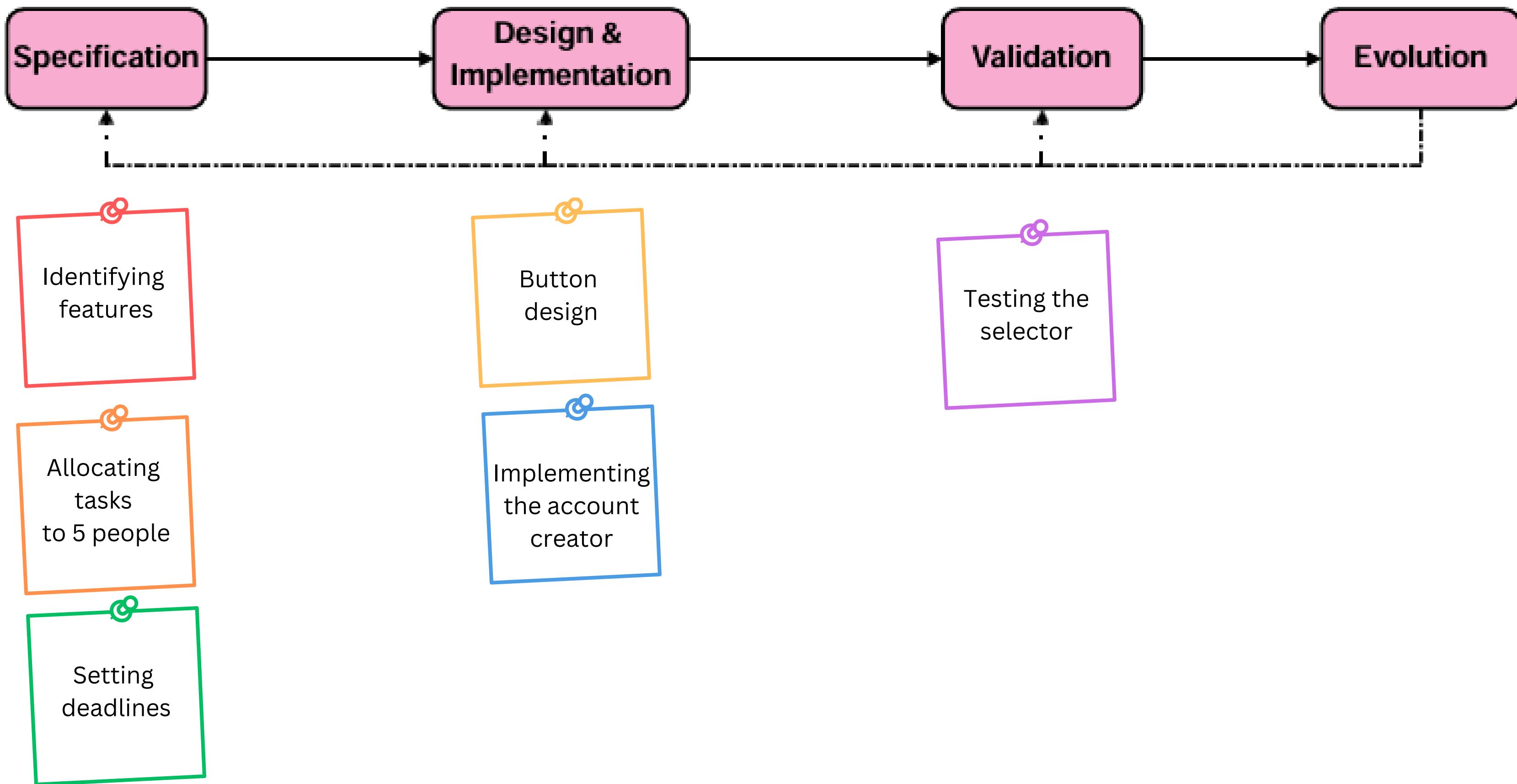
Setting
deadlines

In which phases would this activities be done?



Taken from Computer Programming Week 1 content

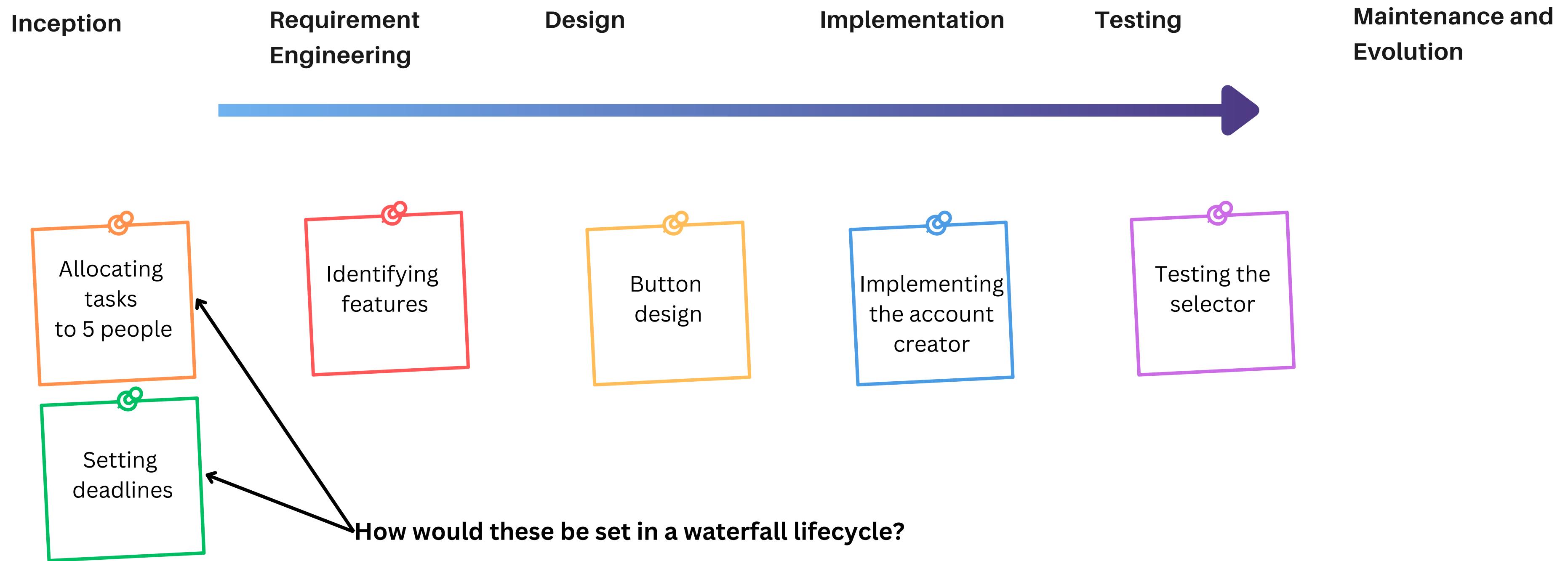
In which phases would this activities be done?



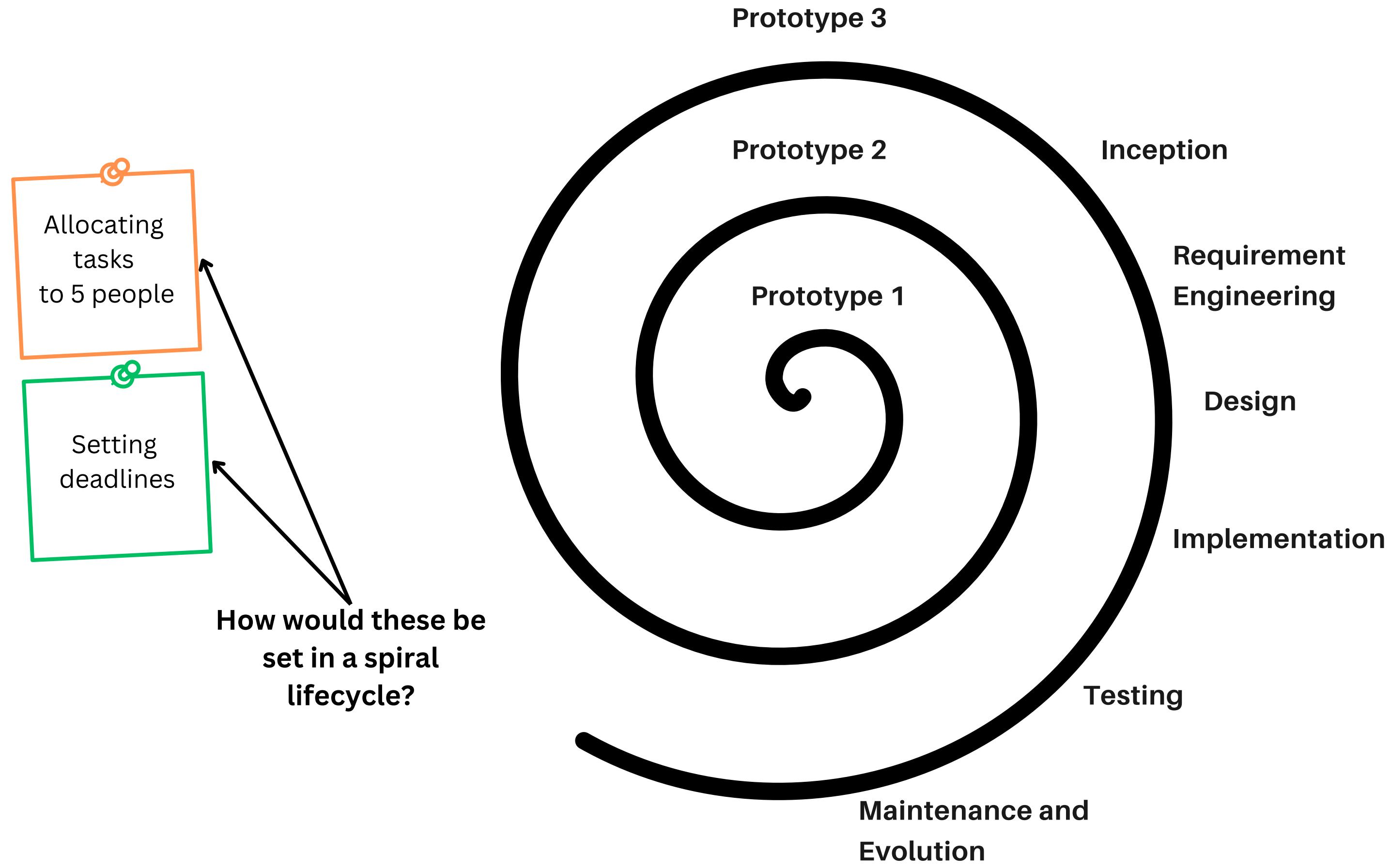
Project Life Cycle Activity Detailing and Definitions

<u>Activity</u>	<u>Definition</u>
Inception	Defining project problem, high-level features, feasibility, target users and solution scope
Requirements Engineering	Eliciting, analyzing, specifying, and validating the functional and non-functional requirements of the solution
Design	Defining solution architecture and components to meet the requirements and guide implementation
Implementation	Translating the design into executable code
Testing	Verifying that the solution meets the functional and non-functional requirements
Maintenance and Evolution	Ongoing process of updating, modifying, and improving a software solution after deployment to address issues and adapt to changing needs

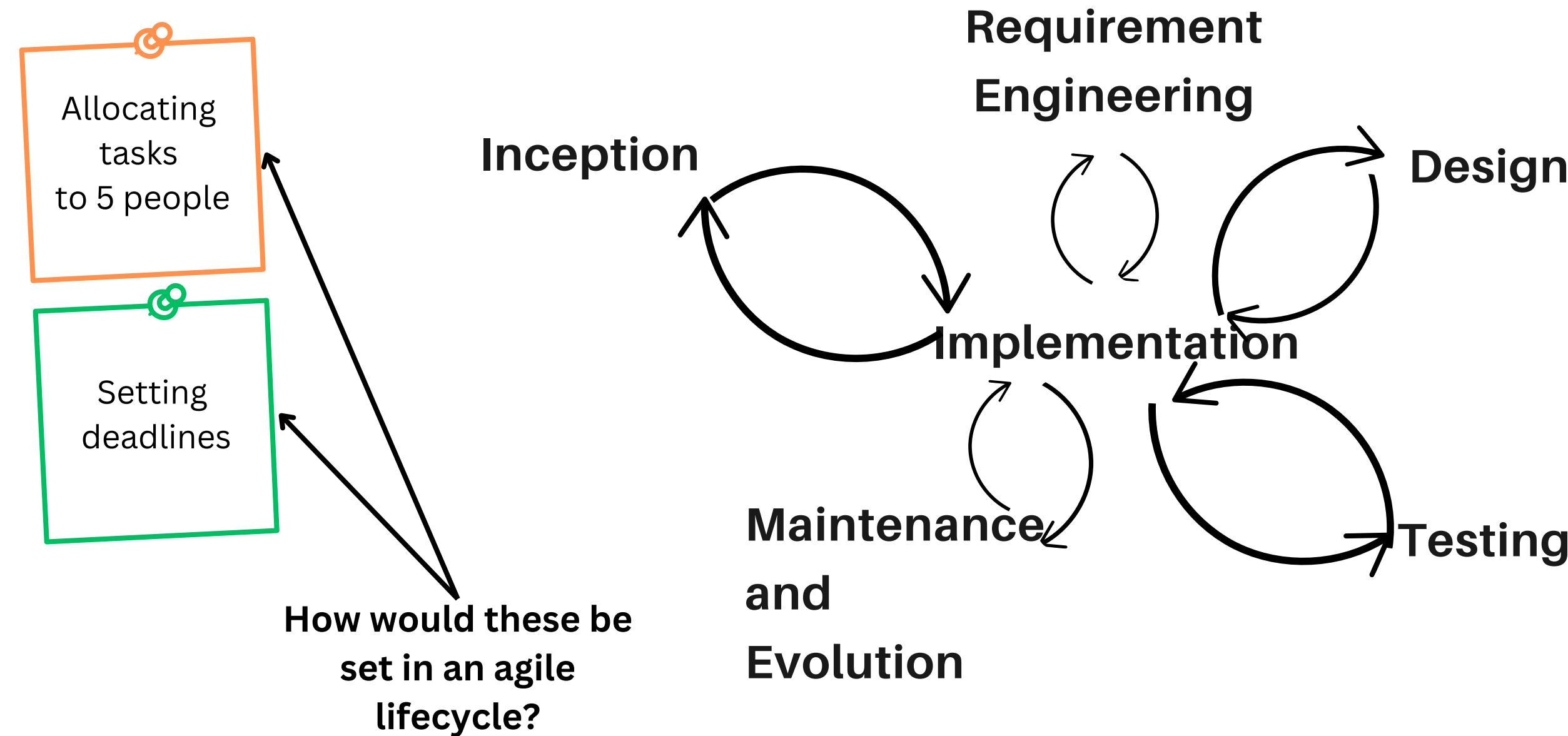
Waterfall LifeCycle



Spiral LifeCycle

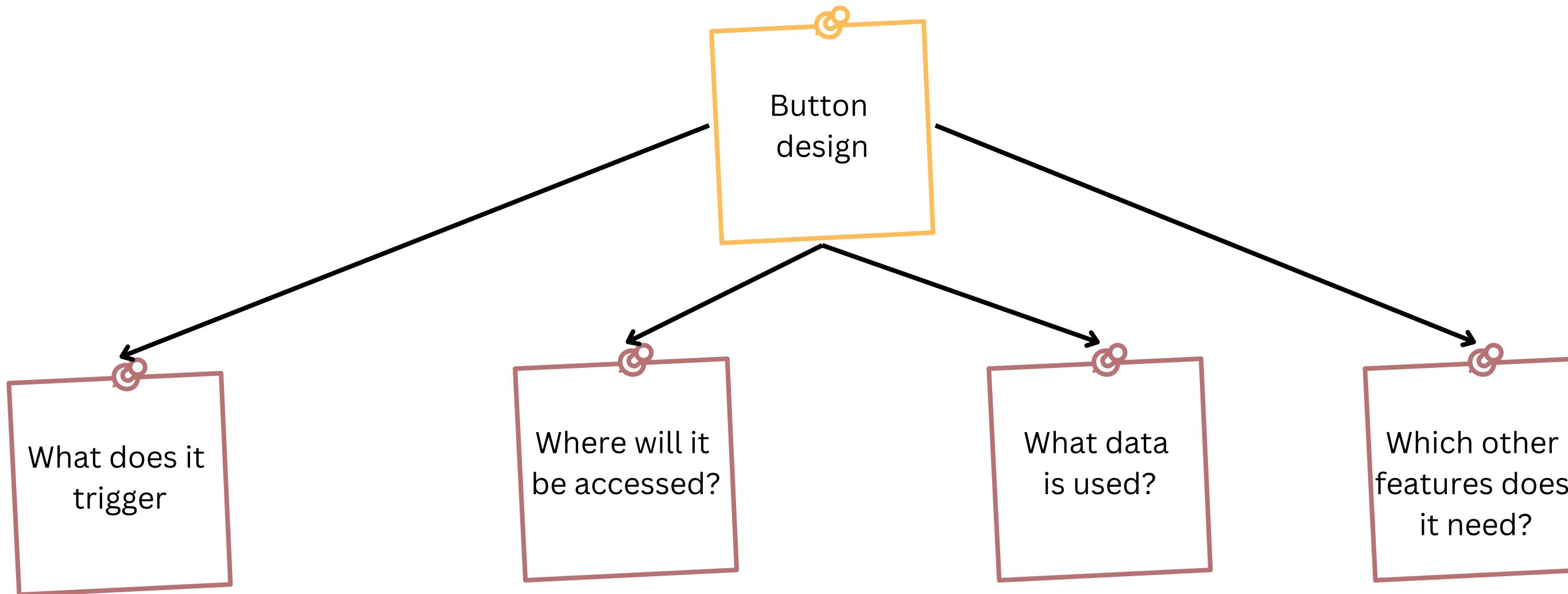


Agile LifeCycle



Design Stage Activities and Tools

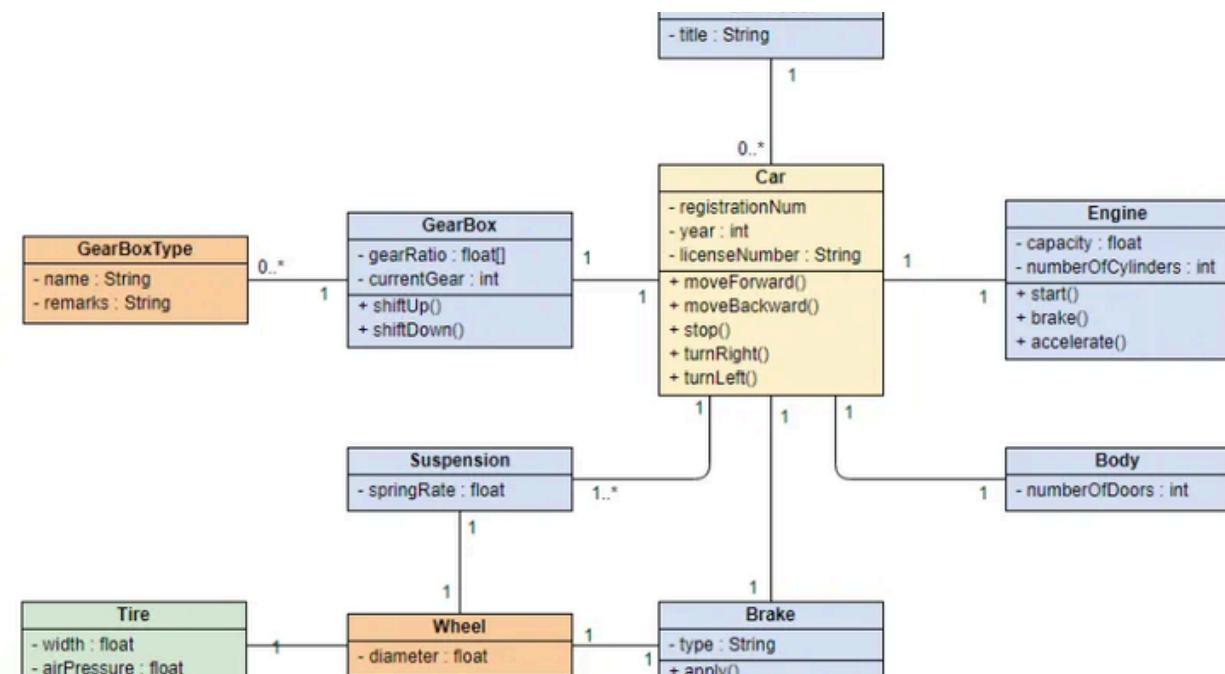
Design Stage Activities Example



Design Stage Tools

Graphic Tools

- Mock-ups
- **Unified Modelling Language Models**



Non-graphical tools

- Text-based models (e.g., Text-based representation for Business Process Model)
- Text-based entity-relationship diagrams