Learning Management System Design

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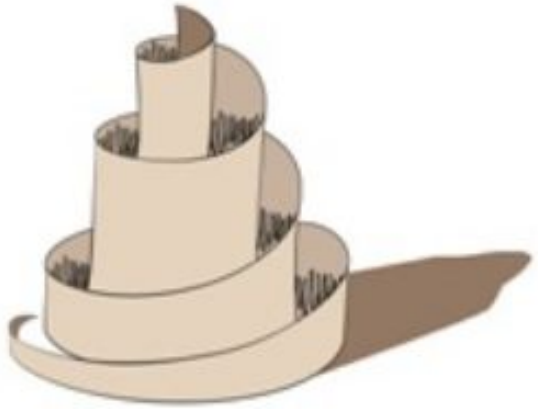
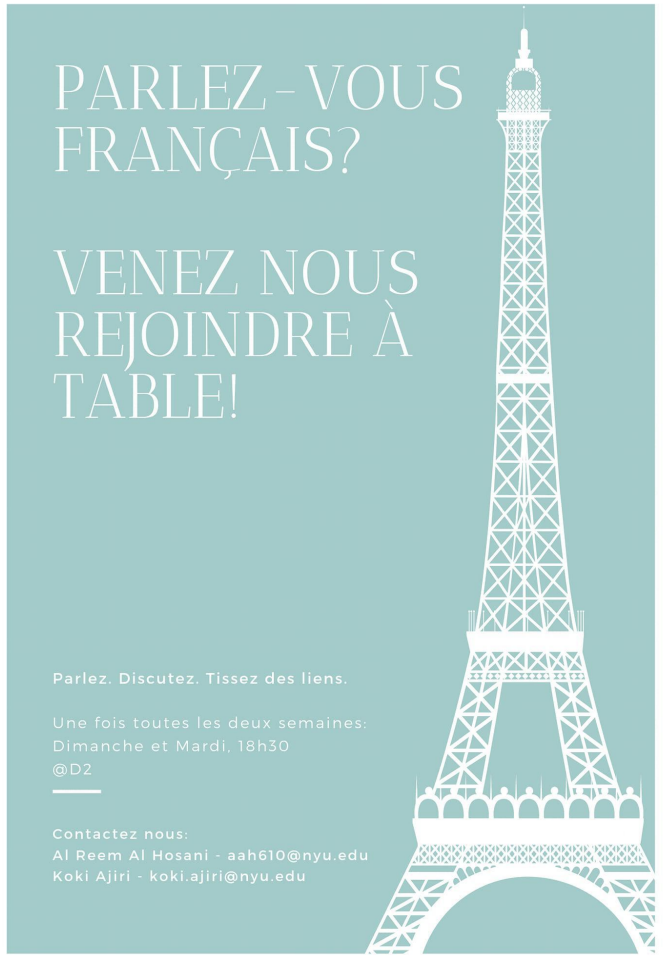


TOWER OF BABEL

Tower of Babel SIG



Requirements Gathering

Methods

- Interview
- Questionnaires (Google Form)

Participants

- Instructors
- E-Board
- Students

System Requests

- Convenient communication
- Efficient Management
- Increased Publicity and Social Media Influence
- Flexible Logistics

Key Functionalities

COURSE ENROLLMENT

COURSE MATERIAL MANAGEMENT

FORUM

REGISTRATION AND USER LOGIN

NOTIFICATION

Feasibility Analysis

- Ssers will be (1) students, (2) instructors, and (3) admin.

- We, the developers, are familiar with the SIG (and NYUClasses).

- Reactjs, MongoDB, etc. : learn the way through

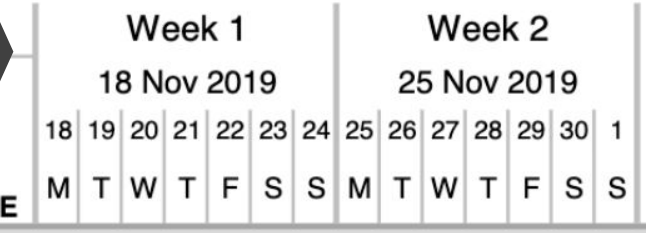
- Simple economic analysis:
- Non-profit: nature of SIGs (no salaries from software side)
- Maintenance (server) cost
- Funded by NYU as a SIG

Risks

Risks	Category	Probability	Impact		Impact Values	
Product may not be completed in time	PS	90%	1		1	Catastrophic
Allocated tasks may not be synchronized in time	TE	80%	2		2	Critical
End users resist system	BU	70%	2		3	Marginal
Functionalities may not integrate well together	TE	50%	2		4	Negligible
Product may not stand out in the market	BU	20%	4			
Development team may lack the appropriate knowledge and tools for implementation	DE	20%	3			
Requirements may change during development	PS	50%	3			
Product functionality design may not cover all customer needs	BU	50%	2			
Product interface may not be user-friendly	DE	30%	3			
Documentation may lack detail	DE	50%	2			
Larger number of users than planned	PS	20%	3			

Project Schedule

WBS	TASK	ASSIGNED TO	START	END	DAYS	% DONE
1	**Project Definition and Planning**			-		
1.1	System Requirements Gathering	Yiming	Mon 11/18/19	Sun 11/24/19	7	100%
1.1.1	Surveys	Yiming	Mon 11/18/19	Thu 11/21/19	4	100%
1.1.2	Interview	Yiming	Mon 11/18/19	Thu 11/21/19	4	100%
1.1.3	Requirements Specification	Yiming	Fri 11/22/19	Sun 11/24/19	3	100%
1.2	Risk and Feasibility Analysis	Hongyi	Mon 11/18/19	Sun 11/24/19	7	100%
1.2.1	Feasibility Study	Hongyi	Mon 11/18/19	Thu 11/21/19	4	100%
1.2.2	Function Point Analysis	Hongyi	Fri 11/22/19	Sun 11/24/19	3	100%
1.3	Scheduling and Planning	Chunxiao	Mon 11/18/19	Sun 11/24/19	7	100%
1.3.1	Project Development Work Plan	Chunxiao	Mon 11/18/19	Thu 11/21/19	4	100%
1.3.2	Project Process Model Construction	Chunxiao	Fri 11/22/19	Sun 11/24/19	3	100%
2	**Content and Architecture Design**			-		
2.1	Website Framework Constuction	Ellen	Mon 11/18/19	Sun 11/24/19	7	100%
2.2	Use Case Model Construction	Hongyi	Mon 11/25/19	Thu 11/28/19	4	100%
2.2.1	Use Case Diagram	Hongyi	Mon 11/25/19	Thu 11/28/19	4	100%
2.2.2	Use Case Textual Description	Hongyi	Mon 11/25/19	Thu 11/28/19	4	100%
2.3	Class Diagram	Yiming	Mon 11/25/19	Sun 12/01/19	7	100%
2.4	Activity Diagram	Chunxiao	Fri 11/29/19	Sun 12/01/19	3	100%
2.5	Sequence Diagram	Chunxiao	Fri 11/29/19	Sun 12/01/19	3	100%
3	**Software Development**			-		
3.1	UI Design	Ellen	Mon 11/25/19	Sun 12/01/19	7	100%

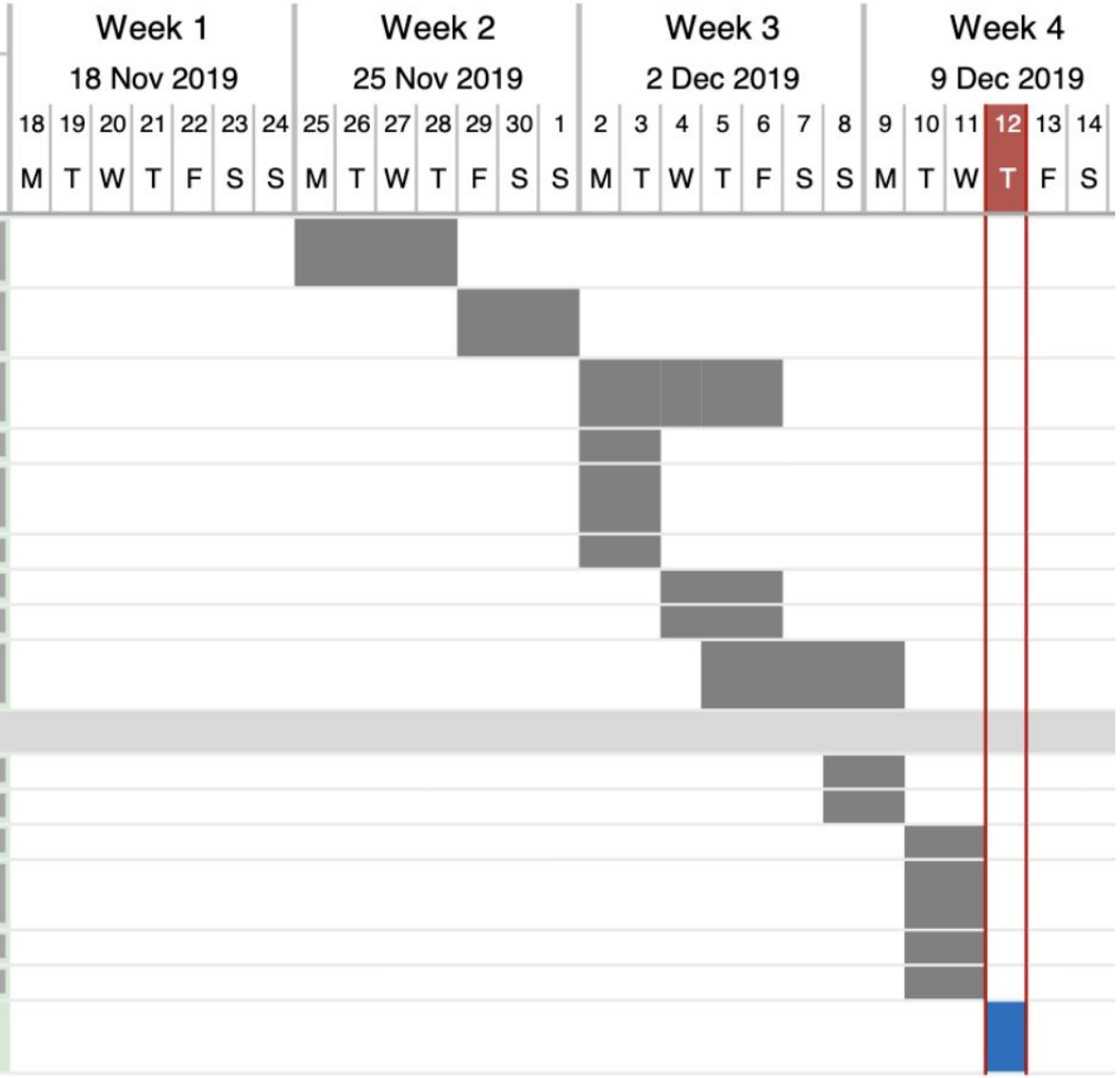


Project Schedule (cont.)

Project Start Date: 11/18/2019 (Monday)

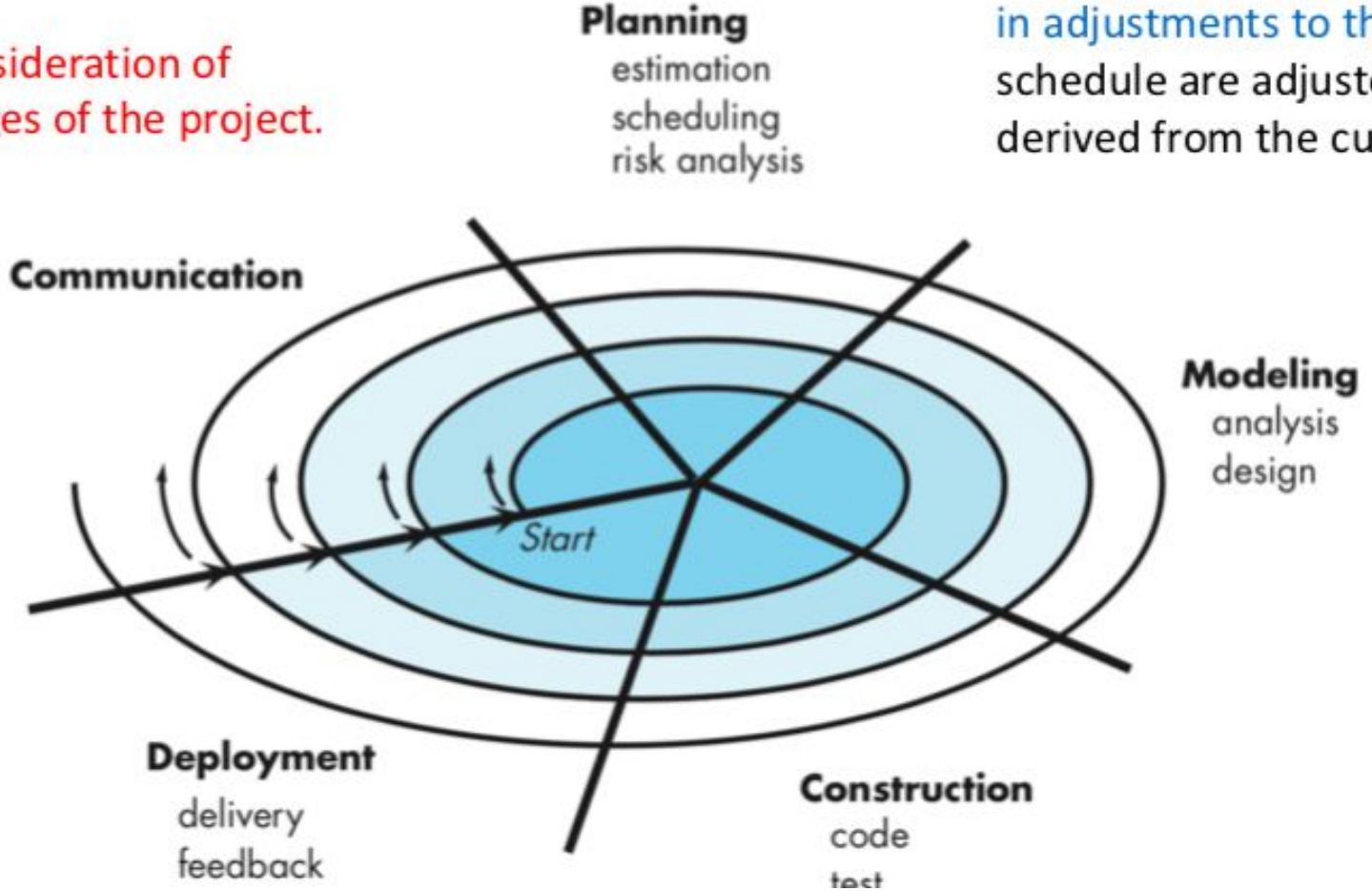
Project Lead: Yiming Huang, Hongyi Liu,Chunxiao Wang, Ellen Xu

WBS	TASK	ASSIGNED TO	START	END	DAYS	% DONE
3.1.1	Overall Framework Supplementation	Ellen, Yiming	Mon 11/25/19	Thu 11/28/19	4	100%
3.1.2	Workflow and Identity Design	Ellen	Fri 11/29/19	Sun 12/01/19	3	100%
3.2	Front-end Implementation	Ellen, Yiming	Mon 12/02/19	Fri 12/06/19	5	100%
3.2.1	Homepage	Ellen	Mon 12/02/19	Tue 12/03/19	2	100%
3.2.2	Login and Registration Page	Yiming	Mon 12/02/19	Tue 12/03/19	2	100%
3.2.3	Courses Page	Ellen	Mon 12/02/19	Tue 12/03/19	2	100%
3.2.4	User profile	Ellen	Wed 12/04/19	Fri 12/06/19	3	100%
3.2.5	Forum and posts	Ellen	Wed 12/04/19	Fri 12/06/19	3	100%
3.3	Back-end Implementation	Ellen, Yiming	Thu 12/05/19	Mon 12/09/19	5	100%
4	**Testing**			-		
4.1	Test Plan	Chunxiao	Sun 12/08/19	Mon 12/09/19	2	100%
4.1.1	Test Case Design	Chunxiao	Sun 12/08/19	Mon 12/09/19	2	100%
4.2	Test Execution	Ellen	Tue 12/10/19	Wed 12/11/19	2	100%
4.2.1	Defect Root Cause Tracing	Yiming,Ellen	Tue 12/10/19	Wed 12/11/19	2	100%
4.2.2	Defect Resolving	Yiming,Ellen	Tue 12/10/19	Wed 12/11/19	2	100%
4.3	Test Documentation	Chunxiao	Tue 12/10/19	Wed 12/11/19	2	100%
4.4	Project Delivery		Thu 12/12/19	Thu 12/12/19	1	0%

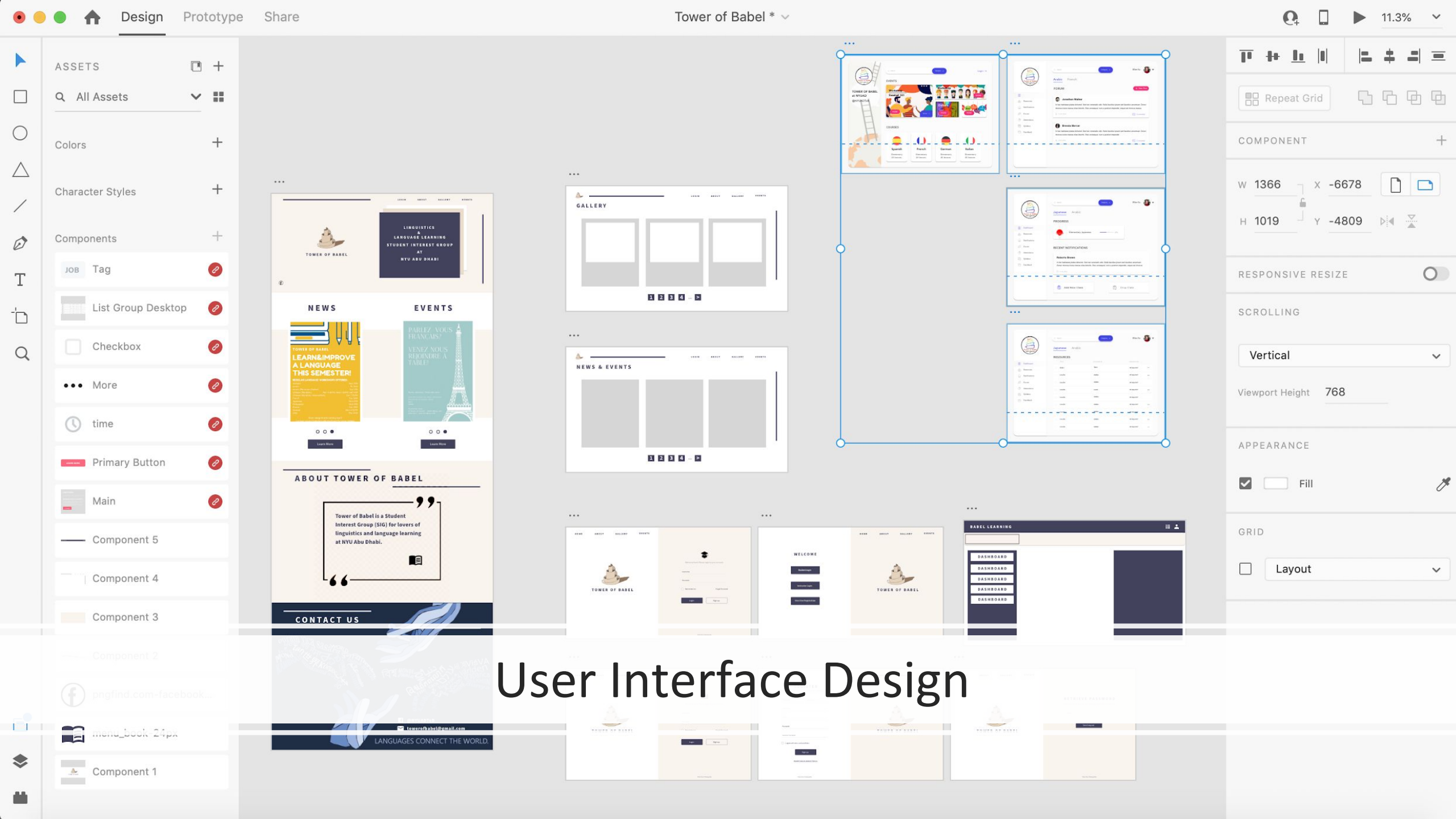


Software Process Model - Spiral

It demands a direct consideration of technical risks at all stages of the project.



Each pass through the planning region results in adjustments to the project plan. Cost and schedule are adjusted based on feedback derived from the customer.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ASSETS
All Assets
Colors
Character Styles
Components
Tag
List Group Desktop
Checkbox
More
time
Primary Button
Main
Component 5
Component 4
Component 3
Component 2
Component 1
Repeat Grid
COMPONENT
W 1366
X -6678
H 1019
Y -4809
RESPONSIVE RESIZE
SCROLLING
Vertical
Viewport Height 768
APPEARANCE
Fill
GRID
Layout
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LINGUISTICS & LANGUAGE LEARNING STUDENT INTEREST GROUP AT NYU ABU DHABI
NEWS
EVENTS
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ABOUT TOWER OF BABEL
Tower of Babel is a Student Interest Group (SIG) for lovers of linguistics and language learning at NYU Abu Dhabi.
CONTACT US
towerofbabel@gmail.com
LANGUAGES CONNECT THE WORLD.
GALLERY
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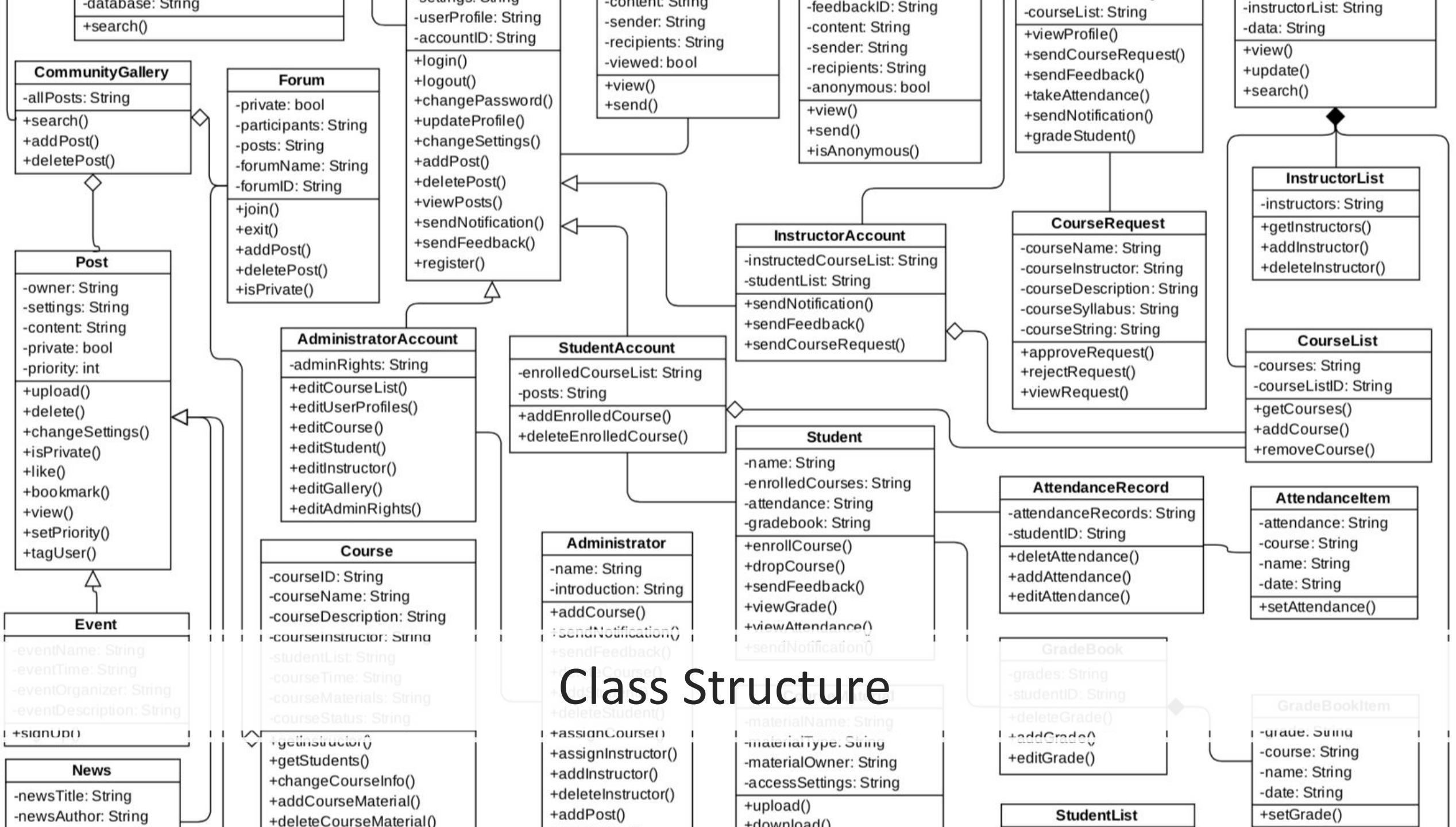
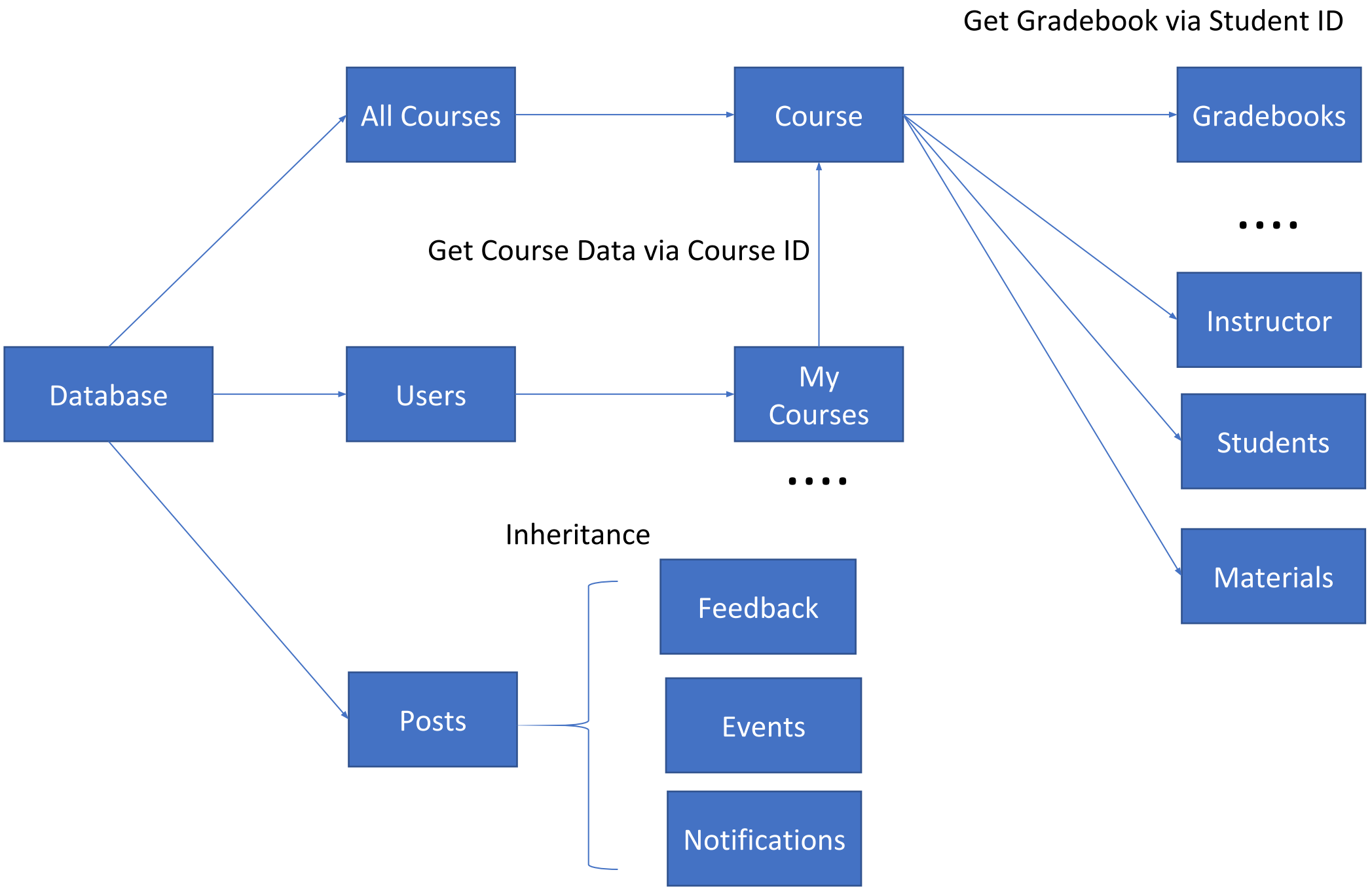
WELCOME
BABEL LEARNING
DASHBOARD
User Interface Design



Class Structure


Get Gradebook via Student ID
All Courses
Course
Gradebooks
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Get Course Data via Course ID
Instructor
Database
Users
My Courses
Students
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Materials
Inheritance
Feedback
Posts
Events
Notifications

Framework

- React JS
- Node JS
- mongoDB

Test Planning

QA Activity	Estimated effort in hours	Assigned to
A) Gather System Information	3	Yiming
B) Test Planning	5	Chunxiao
B1) Design Test Plan	3	Chunxiao
B2) Determine Metrics and Criteria	1	Chunxiao
B3) Review/Approve Plan	1	Yiming & Ellen
C) Test Case Design	5	Chunxiao
C1) Design Validation Test Cases	4	Chunxiao
C2) Review/Approve Test Cases	1	Yiming & Ellen
D) Test Development	5	Yiming & Ellen
D1) Develop Test Scripts	4	Yiming & Ellen
D2) Review/Approve Test Scripts	1	Chunxiao
E) Test Execution	2	Yiming
E1) Setup Environment	1	Hongyi
E2) Execution	0.5	Ellen
E3) Evaluate, Log, and Solve Defects	0.5	Yiming
F) Summarize Report	2	Hongyi
F1) Prepare Final Test Closure Report	1	Hongyi
F2) Review/Approve Test Closure Report	1	Chunxiao

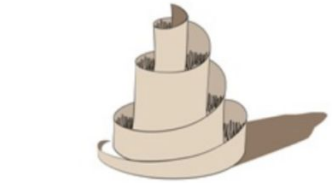
Test Case Design & Execution

Test Environment: MacOS, Safari, Google Chrome

Validation Testing for:

1. Login, Logout, Registration
2. File Upload
3. Course Enrollment

Demo



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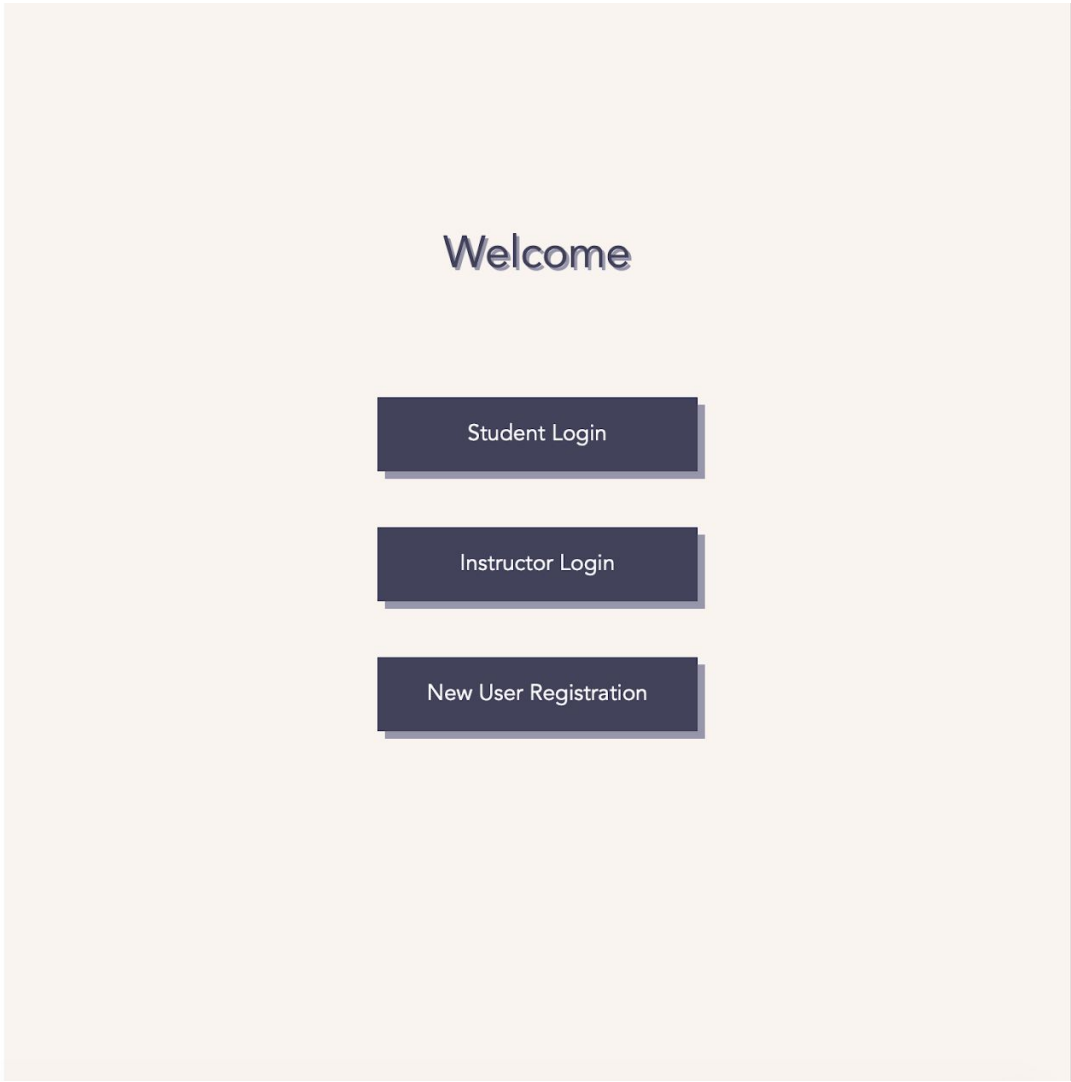

Main Future Goals

Collaborative development with Tower of Babel SIG

Establish Database Communication

Enhance User Interface

Secure Authentication and Data

Thank you!