



## **IS480 Project Proposal Medsense**

### **Team Zenith**

**Version 3  
21 October 2017**

#### **Team Members:**

- Lee Jing Hua Amelia (amelia.lee.2015@sis.smu.edu.sg) - Project Manager
- Chew Chin Rui (crchew.2015@sis.smu.edu.sg) - System Architect
- Ervin Chong Sheng Loong (ervin.chong.2015@sis.edu.sg) - Business Analyst
- Huang Ming Rui (mrhuang.2015@sis.smu.edu.sg) - Front End Developer
- Ricky Putra Franslay (rpf Franslay.2015@sis.smu.edu.sg) - Back End Developer
- Wang Qimin (qimin.wang.2015@sis.smu.edu.sg) - Quality Assurance Analyst

#### **Faculty Supervisor:**

- Name[2] - TBA

#### **Sponsor:**

SMU-TCS iCity Lab

- Dr. Tan Hwee Pink (hptan@smu.edu.sg) - Academic Director
- Ng Boon Thai (btng@smu.edu.sg) - Research Engineer

#### **Client:**

NUS Yong Loo Lin School of Medicine

- Dr. Tay Sook Muay (tay.sook.muay@singhealth.com.sg) - Associate Dean
- Kee Xiang Lee Jamie (A0116870@u.nus.edu) - Senior-Teach-Junior initiative committee member

## Project Overview

### Project Description:

The team will develop a gamified learning platform, Medsense, for NUS Yong Loo Lin School of Medicine. The learning platform will be a web application that simulates interaction with “patients”, facilitate peer learning via a discussion board, and track the performance of students anonymously.

### Motivation:

During clinical attachments, medical students could face difficulty in diagnosing patients due to their lack of practice. While there are similar e-learning applications overseas, like Prognosis, to help medical students ease into their clinical fellowship, our application will include diseases that are more common in Singapore. In addition, instead of just having multiple-choice answers, our application will allow for open-ended answering of questions, to increase the difficulty level.

### Stakeholders:

Sponsor	Tan Hwee Pink (Academic Director), and Ng Boon Thai (Research Engineer), at SMU-TCS iCity Lab.						
Client	Tay Sook Muay (Associate Dean), and Kee Xiang Lee Jamie (Senior-Teach-Junior initiative committee member), at NUS Yong Loo Lin School of Medicine.						
Users	<p>Students: The beneficiaries are the 2,000 students across the 3 medical schools in Singapore (500 students per batch).</p> <table border="1"> <tr> <td>NUS</td> <td>300</td> </tr> <tr> <td>NTU</td> <td>150</td> </tr> <tr> <td>Duke NUS</td> <td>50</td> </tr> </table> <ol style="list-style-type: none"> <li>Professors and Senior Students: Vet each case before it is released to the students.</li> <li>Administrators: Track the performance of students, and monitor activity in the discussion forums.</li> </ol>	NUS	300	NTU	150	Duke NUS	50
NUS	300						
NTU	150						
Duke NUS	50						

### Deliverables:

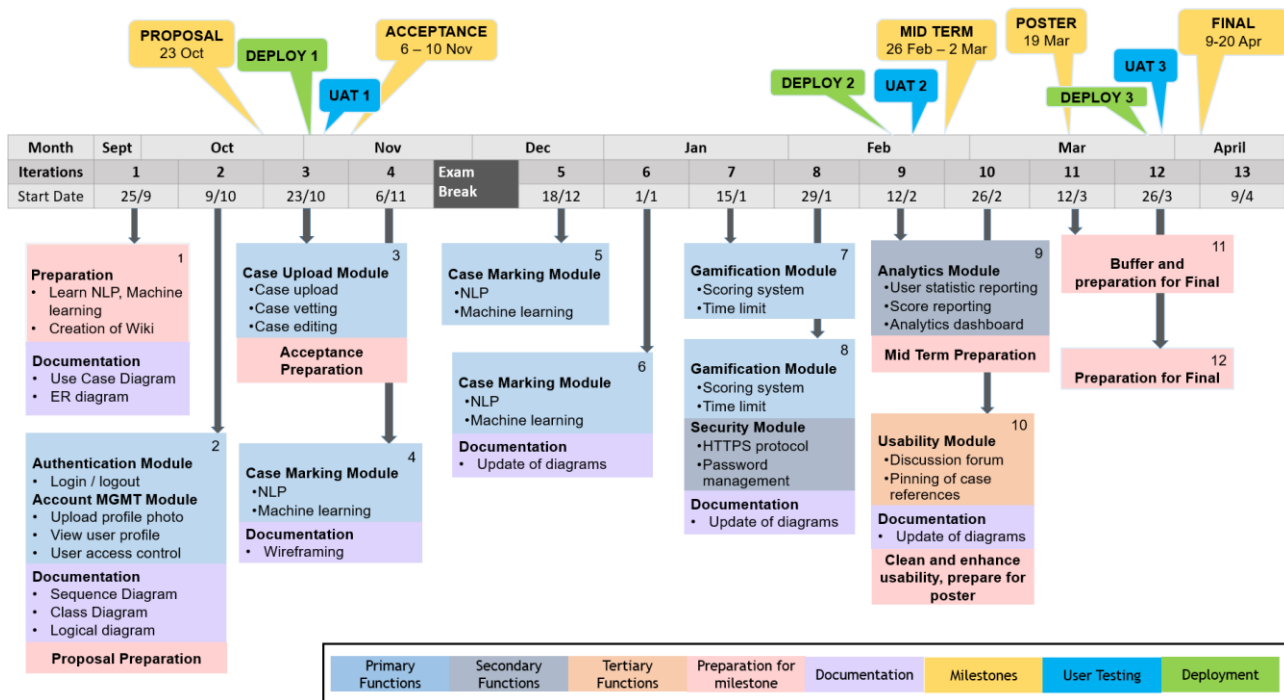
At the end of the project, the client will receive a fully functional and user-friendly web-based e-learning system.

### Scope:

<b>Primary</b>	<b>Secondary</b>
<p><b>1. Authentication Module</b></p> <ul style="list-style-type: none"> <li>Login/ Logout</li> </ul> <p><b>2. Account Management Module</b></p> <ul style="list-style-type: none"> <li>Upload profile photo</li> <li>View user profile</li> <li>User access control</li> </ul> <p><b>3. Case Uploading Module</b></p> <ul style="list-style-type: none"> <li>Case upload</li> <li>Case vetting</li> <li>Case editing</li> </ul> <p><b>4. Case Marking Module</b></p> <ul style="list-style-type: none"> <li>NLP</li> <li>Machine learning</li> </ul> <p><b>5. Gamification Module</b></p> <ul style="list-style-type: none"> <li>Scoring system</li> <li>Time limit</li> </ul>	<p><b>1. Analytics Module</b></p> <ul style="list-style-type: none"> <li>User statistic reporting (top performers, personal rankings by topic and overall)</li> <li>Score reporting (weaker/stronger topics, average score for each specialty)</li> <li>Analytics dashboard (individual and cohort)</li> </ul> <p><b>2. Security Module</b></p> <ul style="list-style-type: none"> <li>HTTPS protocol</li> <li>Password management</li> </ul>
	<b>Tertiary</b>
	<p><b>1. Usability Module</b></p> <ul style="list-style-type: none"> <li>Discussion forum</li> <li>Pinning of case references</li> </ul>

# Project Plan

## Project milestone:



## Risks:

	Likelihood		
Impact	Low	Medium	High
High	B	A	A
Medium	C	B	A
Low	C	C	B

Risk Type	Description	Likelihood	Impact	Category	Mitigation
Technical	Team is unfamiliar with some of the technology used (React framework, machine learning, NLP)	High	Medium	A	Team members will actively learn and discuss. Project Manager will assign more time to unfamiliar tasks.
Client Management	Unexpected changes in client requirements, or growth of scope (eg. Change in gamification will be time-consuming to change)	Medium	Medium	B	Project Manager will be in constant communication with Boon Thai and the client, and regularly review the scope with them.
Project Management	The schedule is planned based on macro functionalities, so small coding tasks may have been left out / time is underestimated due to lack of experience.	Low	Medium	C	Project Manager will review the project schedule and the time needed for each task.

## Resource and reference:

Application Development	Node.js Express, MongoDB, Javascript
Graphical Design	Adobe Photoshop
Frameworks/Libraries	ReactJS, Twitter Bootstrap