**GRADUATE CERTIFICATE: Intelligent Reasoning Systems (IRS)**

**PRACTICE MODULE: Project Proposal**

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| **Date of proposal:**  1st May 2021 |
| **Project Title:**  ISS Project – Contactless Menu for Recommendation |
| **Sponsor/Client:** *(Name, Address, Telephone No. and Contact Name)*  Institute of Systems Science (ISS) at 25 Heng Mui Keng Terrace, Singapore  NATIONAL UNIVERSITY OF SINGAPORE (NUS)  Contact: Mr. GU ZHAN / Lecturer & Consultant  Telephone No.: 65-6516 8021  Email: [zhan.gu@nus.edu.sg](mailto:zhan.gu@nus.edu.sg) |
| **Background/Aims/Objectives:**  With the adoption of digital menus in restaurants, the team saw an opportunity to enhance this technology with the techniques that were acquired in the master program. The end solution is to create a digital menu with ordering and recommendation capability that are akin to e-commerce.  This project focuses mainly on 3 types of recommendations, namely similar items recommendation, complementary items recommendation and popular items recommendation. Moreover, the software is designed to run independently from the backend servers in the event that an unstable internet connection occurs. |
| **Requirements Overview:**   * Research ability * Programming ability * System integration ability |
| **Resource Requirements (please list Hardware, Software and any other resources)**  Software proposed for consideration:   * Neo4J * MongoDB * Python for Flask * ReactJS |
| **Number of Learner Interns required: (Please specify their tasks if possible)**  2 members:  Mu Aohua  1. On-device similar items recommendation model (On-device)  2. Complementary items recommendation. (On-device and server)  3. Menu offline support  4. User interface development  5. Deploy frontend to firebase  6. Project report  7. Video recording for Tech explanation  Lee Joon Hui Jeremy  1. Project research (linking dishes with ingredients)  2. Graph construction  3. Similar items recommendation model (Server side)  4. Backend design, setup and deployment  5. UI/UX design and prototyping  6. Project report  7. Video recording for Business case explanation |
| **Methods and Standards:**   |  |  |  | | --- | --- | --- | | **Procedures** | **Objective** | **Key Activities** | | | **Requirement Gathering and Analysis** | The team should meet with ISS to scope the details of project and ensure the achievement of business objectives. | 1.        Gather & Analyze Requirements | | 2.        Define internal and External Design | | 3.        Prioritize & Consolidate Requirements | | 4.        Establish Functional Baseline | | **Technical Construction** | ·         To develop the source code in accordance to the design. | 1.        Setup Development Environment | | ·         To perform unit testing to ensure the quality before the components are integrated as a whole project | 2.        Understand the System Context, Design | | 3.        Perform Coding | | 4.        Conduct Unit Testing | | **Integration Testing and acceptance testing** | To ensure interface compatibility and confirm that the integrated system hardware and system software meets requirements and is ready for acceptance testing. | 1.        Prepare System Test Specifications | | 2.        Prepare for Test Execution | | 3.        Conduct System Integration Testing | | 4.        Evaluate Testing | | 5.        Establish Product Baseline | |  | | **Acceptance Testing** | To obtain ISS user acceptance that the system meets the requirements. | 1.        Plan for Acceptance Testing | | 2.        Conduct Training for Acceptance Testing | | 3.        Prepare for Acceptance Test Execution | | 4.        ISS Evaluate Testing | | 5.        Obtain Customer Acceptance Sign-off | |  | | **Delivery** | To deploy the system into production (ISS standalone server) environment. | 1.        Software must be packed by following ISS’s standard | | 2.        Deployment guideline must be provided in ISS production (ISS standalone server) format | | 3.        Production (ISS standalone server) support and troubleshooting process must be defined. | |  | |

**Team Formation & Registration**

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| Team Name:  Contactless Menu Team |
| Project Title (repeated):  Contactless Menu Team |
| System Name (if decided): |
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| Team Member 1 Name:  Lee Joon Hui Jeremy |
| Team Member 1 Matriculation Number:  A0048174A |
| Team Member 1 Contact (Mobile/Email):  Mobile: 81283302  Email: [jeremyleejh@u.nus.edu](mailto:jeremyleejh@u.nus.edu) / joonhui@gmail.com |
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| Team Member 2 Name:  Mu Aohua |
| Team Member 2 Matriculation Number:  A0121924M |
| Team Member 2 Contact (Mobile/Email):  Mobile: 81350109  Email: e0689785@u.nus.edu |
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| Team Member 3 Name: |
| Team Member 3 Matriculation Number: |
| Team Member 3 Contact (Mobile/Email): |
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| Team Member 4 Name: |
| Team Member 4 Matriculation Number: |
| Team Member 4 Contact (Mobile/Email): |
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| Team Member 5 Name: |
| Team Member 5 Matriculation Number: |
| Team Member 5 Contact (Mobile/Email): |
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| Team Member 6 Name: |
| Team Member 6 Matriculation Number: |
| Team Member 6 Contact (Mobile/Email): |
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| **For ISS Use Only** | | |
| **Programme Name:** | **Project No:** | **Learner Batch:** |
| **Accepted/Rejected/KIV:** | | |
| **Learners Assigned:** | | |
| **Advisor Assigned:**  Contact: Mr. GU ZHAN / Lecturer & Consultant  Telephone No.: 65-6516 8021  Email: [zhan.gu@nus.edu.sg](mailto:zhan.gu@nus.edu.sg) | | |