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

**PRACTICE MODULE: Project Proposal**

| **Date of proposal:**  1 May 2022 |
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| **Project Title:**  IRS Project – Personal Finance Butler |
| **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:**  The proposed Intelligent Reasoning System (Personal Finance Butler) is developed with the aim of empowering users with Personal Finance Advice by recommending a personalized Investment Portfolio Allocation. |
| 1.0 Intelligent Components |
| 1.1 CRISP Rules Engine |
| 1.2 Investment Portfolio Recommendation Engine |
| 1.2.1 Collaborative Filtering (Given a user, recommend 1 or more funds) |
| 1.2.2 Collaborative Filtering (Given a fund, recommend 1 or more users) |
| 1.2.3 Collaborative Filtering (Given a fund, recommend 1 or more funds) |
| 1.3 Stock Recommendations |
| 1.3.1 ARIMA Stock Forecasting and Recommendation |
| 1.4 Stock and Fund Optimisation with Genetic Algorithm (Future Enhancement) |
| 3.0 Server |
| 3.1 Setting up Anvil Server |
| 4.0 Data |
| 4.1 Postgres Database |
| 4.2 Deploy to Cloud Server |
| 4.3 Deploy to Local Host |

| **Resource Requirements (please list Hardware, Software and any other resources)**    Hardware proposed for consideration:  ● GPU  Software proposed for consideration:  ● Python  ● Spyder IDE  ● Jupyter Notebook  ● Postgres Database  ● StatsModels: ARIMA library  ● Collaborative Filtering Recommendation Engine (custom python code)  ● CRISP Rules Engine (custom python code) |
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| **Number of Learner Interns required: (Please specify their tasks if possible)**  Zero interns employed |
| **Methods and Standards:**     | **Procedures** | **Objective** | **Key Activities** |  | | --- | --- | --- | --- | |  | | **Requirement Gathering and Analysis** | The team 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 Project Team’s 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. Project Team Evaluate Testing |  | | 5. Obtain Customer Acceptance Sign-off |  | |  |  | | **Delivery** | To deploy the system into a production environment. | 1. Software packed |  | | 2. Deployment guideline must be provided in production format |  | | 3. Production support and troubleshooting process must be defined. |  | |  |  | |

**Team Formation & Registration**

| Team Name: Team RH |
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| Project Title (repeated): ISA Personal Finance Butler |
| System Name (if decided): |
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| Team Member 1 Name: Richard Chai Cheng Hee |
| Team Member 1 Matriculation Number:  SXXXX946Z |
| Team Member 1 Contact (Mobile/Email):  9635 6017 / atsuishisen@gmail.com |
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| Team Member 2 Name: Koh Hong Wei |
| Team Member 2 Matriculation Number:  SXXXX301E |
| Team Member 2 Contact (Mobile/Email):  9387 6109 / ahweiah@gmail.com |
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| Team Member 3 Name:  NA |
| Team Member 3 Matriculation Number:  NA |
| Team Member 3 Contact (Mobile/Email):  NA |

| **For ISS Use Only** | | |
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| **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) | | |