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

**PRACTICE MODULE: Project Proposal**

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| **Date of proposal:**  10 April 2020 |
| **Project Title:**  Churn Fortuneteller. |
| **Sponsor/Client:** *(Name, Address, Telephone No. and Contact Name)*  Academic Self Sponsored Project. |
| **Background/Aims/Objectives:**  Customer churn is one of the main factors that will affect the Telecom industry player’s market share & the revenue. The Telecommunication industry mostly depends on subscription-based services. The profitability of the Organization mainly depends on its market share or its customer base. The customer acquisition and retention are two important factors that will directly impact the Organization’s profitability. so, the customer churn is a major problem and one of the serious concerns for large companies in the Telecommunication industry.  Our aim is to create a system, Churn Fortuneteller. Which is fully focused to develop a model Machine Learning/Machine Reasoning/Optimization Techniques (Supervised Machine Learning models - Random Forest Classifier & XGBoost Classifier). The Churn Fortuneteller system would predict those customers about to leave in near future. Based on this prediction, the management will take appropriate actions to retain the customer base and improve the market share and revenue.  Using powerful analytic capabilities to uncover the insights that allow the management to take wise business or strategic decisions. |
| **Requirements Overview:**  To avoid / reduce the churn rating - develop prediction model based on machine learning - machine reasoning - random search optimization to improve model predictive performance – Python programming |
| **Resource Requirements (please list Hardware, Software and any other resources)**  Hardware proposed for consideration: NIL  Software proposed for consideration:  **Python Web Development using Flask framework with Libraries**   * Pandas * Numpy * Matplotlib * Seaborn * Sklearn * XGBoost Classifier * Flask deployment for model prediction user-interface |
| **Number of Learner Interns required: (Please specify their tasks if possible)**  A team of four project members required to implement this system. |
| **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:  GROUP 1 |
| Project Title (repeated): Churn Fortuneteller. |
| System Name (if decided): |
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| Team Member 1 Name: Anirban Kar Chaudhuri |
| Team Member 1 Matriculation Number: A0108517H |
| Team Member 1 Contact (Mobile/Email):  Mobile: 86118180  Email: anirban.karchaudhuri@gmail.com |
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| Team Member 2 Name: MARADANA VIJAYAKRISHNA |
| Team Member 2 Matriculation Number: A0178453W |
| Team Member 2 Contact (Mobile/Email):  Mobile: 93896379  Email: mvskrishna@yahoo.com |
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| Team Member 3 Name: Putrevu Manoj Niyogi |
| Team Member 3 Matriculation Number: A0213557E |
| Team Member 3 Contact (Mobile/Email):  Mobile: 94575890  Email: manojniyogi@yahoo.com |
|  |
| Team Member 4 Name: Sivasankaran Balakrishnan |
| Team Member 4 Matriculation Number: A0065970X |
| Team Member 4 Contact (Mobile/Email):  Mobile: 97379441  Email: bsivaa@gmail.com |

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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) | | |