|  |  |
| --- | --- |
|  | **Sri Lanka Institute of Information Technology** |

PROJECT REGISTRATION FORM

|  |
| --- |
|  |

(This form should be completed and submitted on or before 3.00 PM, Friday 3rd March, 2017)

The purpose of this form is to allow final year students of the B.Sc. (Hon) degree program to enlist in the final year project group. Enlisting in a project entails specifying the project title and the details of four members in the group, the internal supervisor (compulsory), external supervisor (may be from the industry) and indicating a brief description of the project. The description of the project entered on this form will not be considered as the formal project proposal. It should however indicate the scope of the project and provide the main potential outcome.

|  |  |
| --- | --- |
| PROJECT TITLE | 270 Home Automation & Security |

|  |  |
| --- | --- |
| RESEARCH GROUP | Artificial Intelligence |

|  |  |  |
| --- | --- | --- |
| PROJECT NUMBER |  | (will be assigned by the lecture in charge) |

PROJECT GROUP MEMBER DETAILS: (Please start with group leader’s details)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | STUDENT NAME | STUDENT NO. | CONTACT NO. | EMAIL ADDRESS |
| 1 | O.Y.Navarathneraja | IT15050786 | 0777134971 | onida.yolin@gmail.com |
| 2 | Akwaththa A.R.J | IT15093660 | 0714998043 | akwaththarajitha@gmail.com |
| 3 | H.M.Piumika Hashiki Halpe | IT15052902 | 0763973847 | hashikihalpe@gmail.com |
| 4 | W.S.H. Boteju | IT14034114 | 0776119438 | shimasha22@gmail.com |

|  |  |  |
| --- | --- | --- |
| SUPERVISOR | | |
| [Mr.Yasas Mallawarachchi](http://courseweb.sliit.lk/user/view.php?id=7306&course=1) |  |  |
| Name | Signature | Date |

|  |  |  |
| --- | --- | --- |
| CO-SUPERVISOR (will be assigned by the Supervisor, if necessary) | | |
|  |  |  |
| Name | Signature | Date |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| EXTERNAL SUPERVISOR (if any, may be from the industry) | | | | | |
|  |  |  |  |  |
| Name | Affiliation | Contact Address | Contact Numbers | Signature/Date |

|  |  |  |
| --- | --- | --- |
| ACCEPTANCE BY CDAP MEMBER | | |
|  |  |  |
| Name | Signature | Date |

PROJECT DETAILS

|  |
| --- |
| Brief Description of your Research Problem: |
| With So many technological advancements at our fingertips, our lives are made so much simpler. Great Strides are made to make Homes more “techy” and Safe.  Transitioning to a smarter home can improve control over every aspect of how your house operates, it increase safety and accessibility.  With the use of conventional wall switches, it’s considered to be inefficient and the risks and danger are extremely high. The possibility of power short circuits is unpredictable and it can lead to unexpected and very unfortunate injuries, especially when children are in the household.  When we leave the house; many of us have experienced the feeling of doubt, fear and panic, all at once because of leaving an electrical appliance switched on, a door or window left open.  When the family goes on a long road trip or a vacation, the request given to the neighbors to keep an eye on the house; or keeping a light switched on day and night.  But even taking these kinds of measures, still gives us a feeling of insecurity.  Therefore, let’s take the next “big” step forward with the “smart” technology into *our homes*… |
| Description of the Solution:  **A *Home Automation System* that would benefit the Home owner with Security, Convenience, Additionally Comfort and Peace of Mind.**  **The ability to ward off potential threats, while the family is in vacation.** |

|  |
| --- |
| Main expected outcomes of the project: |
| **A Simple, Affordable, Attractive and Fully Functional Home Automation System, which will Provide the Home Owner and family with Easy Accessibility and limited physical interactions. And Most importantly, Ensuring the Security of the system from cyber-attacks.**  **Functions / Features of the Project:**   1. Monitor Indoor temperature and count of people in a room; then operate the Fan/AC/ Open and Close Windows. 2. When high tech appliances are in the house (Fridge, AC, etc) and Electricity Suddenly goes off; the main switch is turned off. Once the Power comes back on, only the required appliances are switched back on.      1. System Ability OF:  * On/Off the lights in a Room. * Check the Ground or plant moisture; and On/Off Sprinklers in the Garden * Detect Open/Unlocked Windows, Doors – Auto Close them. * Landscape lighting can turn on automatically at sunset and off again at sunrise  1. Receive Text when the garage Light and door is Left open. 2. Switch on the Garage Light and door when the vehicle is approaching. |

WORKLOAD ALLOCATION (Please provide a brief description about the workload allocation)

|  |  |
| --- | --- |
| MEMBER 1 | O. Y. Navarathneraja |
| **Research Area:**   * Image processing to detect the vehicle when its approaching/is outside the Garage. * IOT server communication for message alert, switching on the garage light (If it’s dark outside), opening the garage gate. | |

|  |  |
| --- | --- |
| MEMBER 2 | Akwaththa A.R.J |
| **Research Area :**   * Sensor communication with microcontroller and notify via server (AWS) to the mobile application; to automate closing Doors and windows; and switching off Lights. Monitor the temperature and count of people; then operate the AC or fan. * Ensure the Security of the system from cyber-attacks, by securing the WIFI network with WPA2 encryption protocol and Firewall protection. | |

|  |  |
| --- | --- |
| MEMBER 3 | H. M. P. H. Halpe |
| **Research Area:**   * Micro-Controlling * Machine Learning is used to detect the time and automate the switching the light on or off, and sprinklers in the garden, depending on the moisture content. | |

|  |  |
| --- | --- |
| MEMBE R 4 | W. S. H. Boteju |
| **Research Area:**   * IOT Energy monitoring to automate and control the Power control of High tech appliances (AC, Fridge, etc); especially when there are power cuts. | |

DECLARATION

“We declare that the project would involve material prepared by the Group members and that it would not fully or partially incorporate any material prepared by other persons for a fee or free of charge or that it would include material previously submitted by a candidate for a Degree or Diploma in any other University or Institute of Higher Learning and that, to the best of our knowledge and belief, it would not incorporate any material previously published or written by another person in relation to another project except with prior written approval from the supervisor and/or the coordinator of such project and that such unauthorized reproductions will construe offences punishable under the SLIIT Regulations.

We are aware, that if we are found guilty for the above mentioned offences or any project related plagiarism, the SLIIT has right to suspend the project at any time and or to suspend us from the examination and or from the Institution for minimum period of one year”.

|  |  |  |  |
| --- | --- | --- | --- |
| # | STUDENT NAME | STUDENT NO. | SIGNATURE |
| 1 | O.Y.Navarathneraja | IT15050786 |  |
| 2 | Akwaththa A.R.J | IT15093660 |  |
| 3 | H.M.Piumika Hashiki Halpe | IT15052902 |  |
| 4 | W.S.H. Boteju | IT14034114 |  |