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|  | **HASAN KALYONCU UNIVERSITY**  **Computer Engineering Department** **COME 499 Project Proposal Form** |

**Part I. Project Proposer**

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**Part II. Project Information**

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| **Starting Term** | |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | 2 | 0 | 1 | 9 | / | 2 | 0 | 2 | 0 | |
| **Title of the Project** | **Implementation of a Prototype for Multi-Functional Safety and Comfort Smart Home System using Arduino** |
| **Project Description** | |
| Monitoring the condition of domestic and its appliances has been always ranked among the main concerns of the daily lives of people. This concern is far more prominent for those who are outdoors during the day and have to keep watch on their children or elderly people. The smart home refers to a system that uses information technology and computers or smartphones to monitor domestic appliances. This technology can be used to resolve the above concerns successfully.  In this project, an efficient smart home system that provides safety and comfort through multiple features such as setting the desired home temperature, adjusting ambient lighting, controlling the domestic appliances through WIFI, mobile phones, and GSM, etc. will be implemented. | |
| **Project Justification** | |
| **Novelty** | |
| **New aspects** | Building a multi-objective efficient and cheap safety and comfort system |
| **Complexity** | |
| **Challenging problem and issues** | Executing multiple tasks in parallel efficiently is a critical issue for the project. |
| **Related computer science fields and subfields** | IOT, Embedded System. |
| **Tools** | Arduino integrated development environment (IDE). In addition, the main hardware components that will be used to implement this Prototype are Arduino Uno, some sensors such as a light-dependent resistor (LDR), gas sensor, LM35 temperature sensor, etc., LCD, Arduino Wi-Fi Shield, and Arduino GSM Shield. |
| **Risk involved** | |
| **Potential problems and alternative solutions** | Implementing multi functionalities may require more duration, to avoid such problem more than one Arduino Uno can be used for the prototype, which allows implementing a group of tasks at the same time. |
| **Minimum work required** | 4 MONTHS |