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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** |

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| **Title of the Project** | **Implementation of a Prototype for Efficient Home Security System using Arduino** |
| **Project Description** |
| With the recent impressive improvement in the IoT, we are able to remotely control various domestic appliances, and there is an ability to connect almost all devices and equipment through communication networks such as the Internet. Nowadays, home security and monitoring the condition of domestics has been ranked among the main concerns of the daily lives of people. A security system that has the ability to alert owners about detecting theft through multiple ways such as mobile phones will be developed. In other words, by taking advantages of the availability of high-quality cameras and sensors we can implement a system that can perform multiple security tasks efficiently, that can be used by the public in many circumstances while putting into effective factors such as security and safety. |
| **Project Justification** |
| **Novelty** |
| **New aspects** | Building a multi-objective efficient and cheap security system |
| **Complexity** |
| **Challenging problem and issues** | Detection of all possible threats is a challenging task. In addition, implementing a multi-objective security system is also a critical issue for the project. |
| **Related computer science fields and subfields** | IOT, Image processing  |
| **Tools** | Arduino integrated development environment (IDE). In addition, the main hardware components that will be used to implement this Prototype are Arduino Uno, ultrasonic sensor, Buzzer, Microwave Sensor, Camera, LCD, Arduino Wi-Fi Shield, and Arduino GSM Shield. |
| **Risk involved** |
| **Potential problems and alternative solutions** | The efficiency of some techniques for detecting all possible threats might be below our expectations. As an alternative solution, multiple techniques will be used in parallel to increase the chance of detecting all possible threats. |
| **Minimum work required** | 4 MONTHS  |