**Department of Computer Engineering**

**College of Engineering**

**University of Tripoli**

**Graduation Project Proposal**

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| **Proposal Title:**  **Fall Detection System for Elderly.** |
| **Supervisor Name:**  1. Dr.Nizar Khemri. |

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| **Problem Statement:**  Elderly people who are living independently have a high risk of falling and injured themselves. Falling down and become unconscious can be fatal because nobody is aware of this falling event which may lead the faller to have more severe injuries. It is important to have a quick response and rescue time if falling event occurs.  Older people are the most vulnerable, as they often have chronic diseases that require continuous medical assistance. Any person living alone is at a higher risk of not getting medical care in due time, and special attention must be given to people above 65. |

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| **Objective:**  This project aims to protect the elderly who are exposed to falls that may end their lives or cause serious injuries to them, in order to avoid any risk of falling by reaching the injured person as soon as possible and providing him with timely medical assistance.  The project tracks the state of the elderly's heartbeat and whether or not he fell. In case of fall, a message is sent to those concerned containing the scene of the accident and his heart rate. |

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| **Procedure:**    1. Configure GPS and GSM modules.  2. Sensor initialization (MPU6050, pulse).  3. Read data from sensors.  4. Detect all reading for each threshold, for example (for front, back, left and right falls).  5. After assigning all the threshold data to each position, we look at when a fall occurs and detect if it is dangerous or not over time (Time that has elapsed if the elderly is still lying down).  6. Send an SMS message with a reading of the location and heart rate so that the slave can know the status of a particular person (elderly). |

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| **Resources and Tools:**   * Arduino Uno. * MPU 6050. * Pulse Sensor. * Wires. * GPS & GSM modules. |

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| **Keywords:**   * Hardware Engineering. * Circuit Design. * C (Programming Language). * Arduino IDE. |

**Students Signature: 1.** -----------------------------------------------------------------

**Date**: ----------------------------------------------------------------------------------------

**Supervisor Signature: 1.** ---------------------------------------------------------------

**Date**: ----------------------------------------------------------------------------------------