



Graduation Project Proposal

1. Project Business Case:

1.1 Project Main Goal

- Giving the car the capability to adapt its speed according to the circumstances of the obstacles ahead.
- Displaying the basic information that the user needs on the infotainment system.
- Choosing the cruise control mode of operation (Static & Adaptive) through the infotainment system.

1.2 Product Features

1.2.1 Priority Features

- 1) Infotainment System.
- 2) Cruise control. (Static & Adaptive).
- 3) Distance Measurement.
- 4) Speed & Range Selection.
- 5) Automatic Emergency Braking (AEB).

1.2.2 Secondary Features

- 1) Light System
- 2) CAN Communication Protocol
- 3) Sound System
- 4) Voice Commands

1.3 Required Hardware

- 1) Raspberry Pi 3
- 2) STM32 ARM Based Microcontroller
- 3) LCD Touch Screen
- 4) Ultrasonic Sensor
- 5) LED

1.4 Project Budget

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|-----------------------------|-----------|
| • LCD Touch Screen | 2,500 EGP |
| • 2 DC Motors with Encoders | 770 EGP |
| • Motor Driver | 65 EGP |
| • External LED Matrix | 17 EGP |

1.5 Delivery Date

24/Feb/2023