Remote Keyless Entry (RKE) system

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Remote keyless entry (RKE) is an electronic access system that can be controlled from a distance. RKEs, which are typically used to remotely lock or unlock doors, require the end user to initiate an action that will cause a physical or software key fob to transmit a radio signal to a receiver that controls an electronic lock. Typically, the action is to press a button on a physical fob or mobile app.

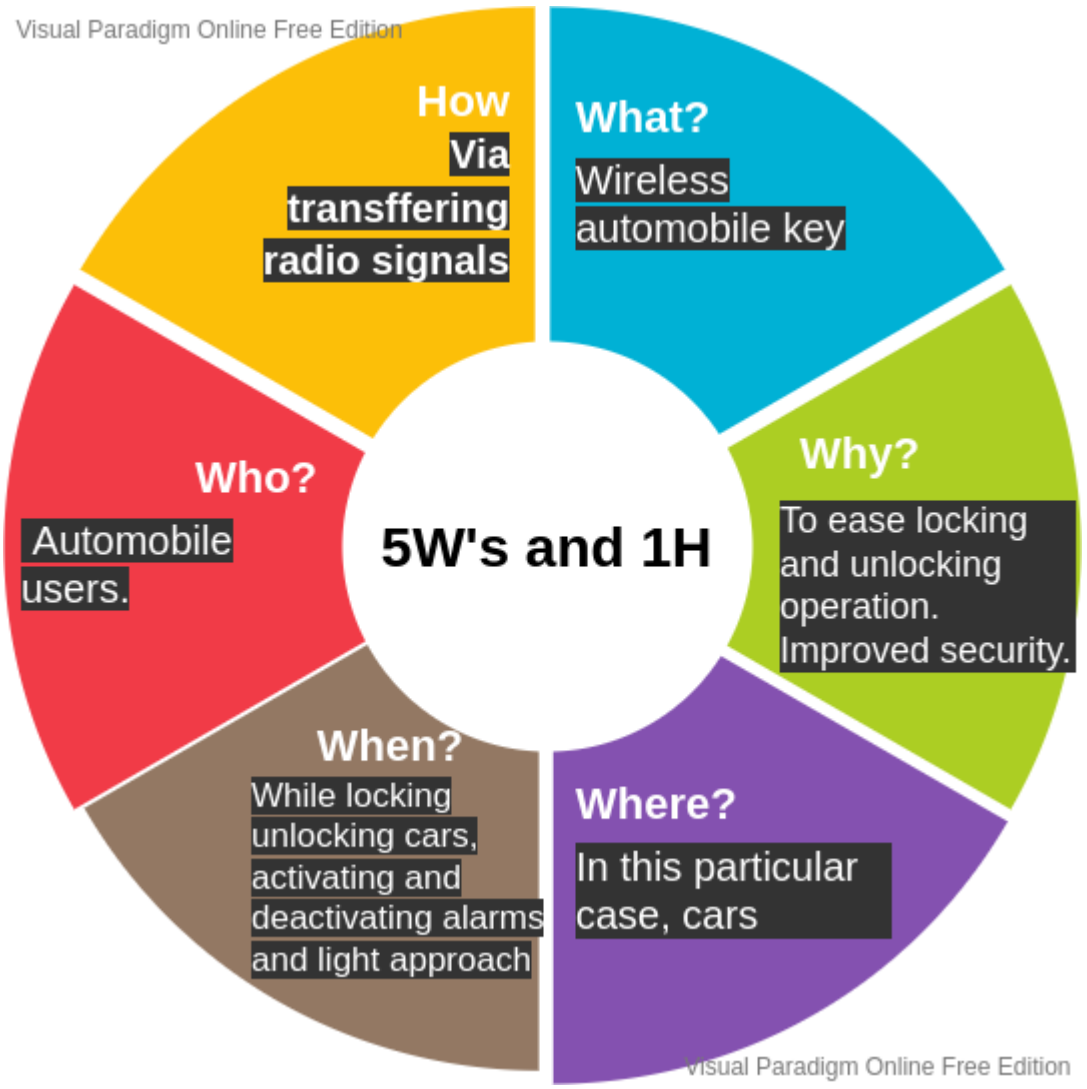
1.2 Abstract

Remote Keyless Entry (RKE) systems are the successors to the traditional method of opening car doors by inserting physical keys. Keys with RKE-capabilities allow key-holders to remotely lock and unlock car doors, start or stop engines, or turn on and off anti-theft alarms.

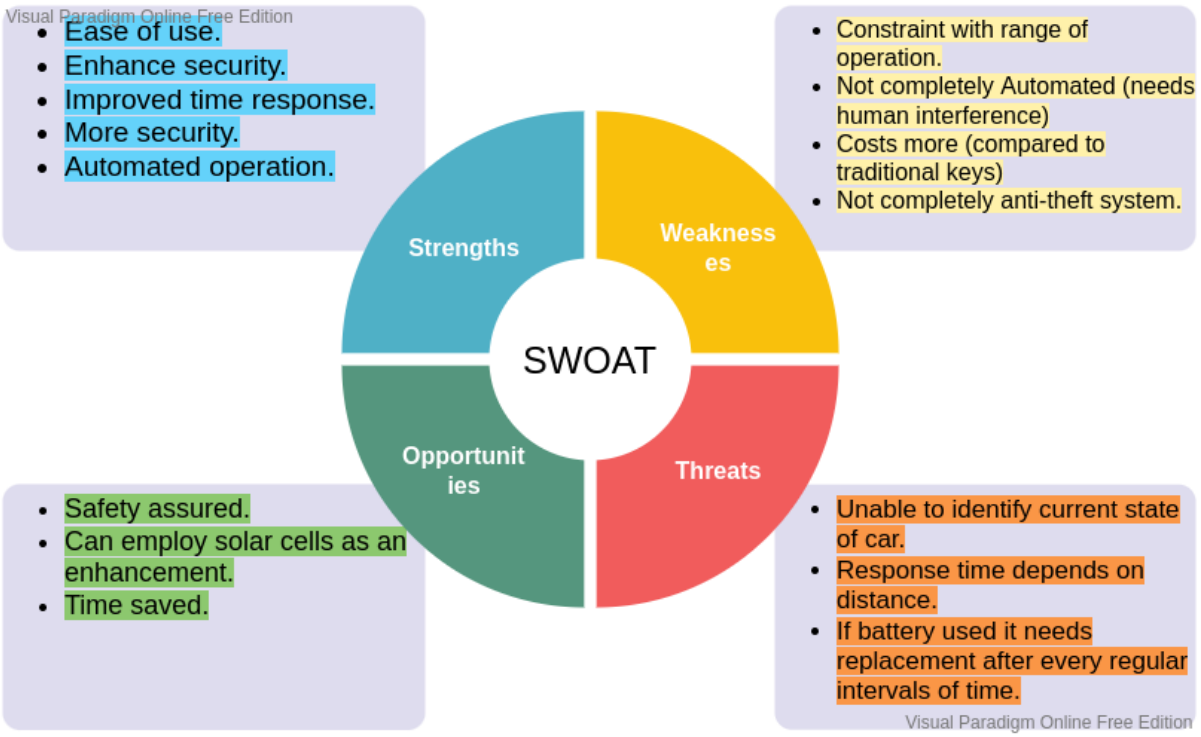
1.3 Description

BiCom System: This system aims to achive the goal of displaying Window Status, Alarm Status, Battery Information and Door Status . There are particular led signaling for particular functionalities. Lets consider if we press a button 1 time all the LED will be on which means the Window status of car will be displayed, and so on.

2. 5 W's and 1 H



3. SWOAT Analyzes



4.Requirements

4.1 High level requirements

Test ID	Description	Category
HLR_01	System shall be showing window status	Technical
HLR_02	System shall be showing Alarm status	Technical
HLR_03	System shall be showing car's battery status	Technical
HLR_04	ystem shall be showing door's status	Technical

4.2 Low level requirements

Test ID	Description	HLR ID	Category

LLR_01	Pressing a particular button shall switch on the all LED's at a same time	HLR_01	Functional
LLR_02	Pressing a button twice shall turn LED's on in clockwise manner	HLR_03	Functional
LLR_03	Pressing a particular button shall switch off the LED'sat a same time	HLR_02	Functional
LLR_04	Pressing a button twice shall turn LED's on in Green -> Orange -> Red -> Blue fashion	HLR_03	Functional
LLR_05	Pressing a button four times shall turn LED's on in clockwise manner	HLR_04	Functional
LLR_06	Pressing a button twice shall turn LED's on in Green -> Orange -> Red -> Blue fashion	HLR_04	Functional

5. Test Plan and Output:

5.1 High level test plan:

Test ID	Description	Input	Expected output	Actual Output
HLTP_01	Display the window status	User input button press onced	Window status	Window status
HLTP_02	Display the alarm Status	User input button presses twiced	Alarm status	Alarm status
HLTP_03	Display car battery Information	User input button presses trice	Battery status	Battery status

HLTP_04	Display the door status of car	User input button presses four times	Door status	Door status

1.2 LOW LEVEL TEST PLAN

Test ID	Description	Input	Expected output	Actual Output	Status
LLTP_01	check for BTN_Pressed Enable	User Button Presses once	All LEDs turned on	All LEDs turned on	✔
LLTP_02	Check for BTN_Pressed disable	User Button Presses twice	All LEDs turned off	All LEDs turned off	✔
LLTP_03	Check for BTN_Pressed Enable	User Button Presses thrice	LED is on with clockwise rotation	LED is on clockwise rotation	✔
LLTP_04	Check for BTN_Pressed disable	User Button Presses thrice	LED is On with anticlockwise rotation	LED is on with anticlockwise rotation	✔

Test ID	Description	Input	Expected output	Actual Output	Status
LLTP_01	check for BTN_Pressed Enable	Button pressed once	Window status	Window status	✔
LLTP_02	Check for BTN_Pressed disable	Button pressed twice	Alarm status	Alarm status	✔

LLTP_03	check for BTN_Pressed Enable	Button pressed thrice	Battery status	Battery status	✔
LLTP_05	Check for BTN_Pressed disable	Button pressed four times	Door status	Door status	✔