

# Third Eye Two Wheeler: Accident and Malt Detection in Bluetooth Enabled Smart Helmets with Load Monitoring for Motorbikes

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## Article Info

Volume 82

Page Number: 6696 - 6701

Publication Issue:

January-February 2020

## Abstract

The Alcohol detection sensor allied with the helmet in identify the Malt detection, we will also implement IR based detection to ignite the Vehicle. Mems based switch bar controller of the vehicle. Smart phone usage while driving the vehicle. Vibration sensor to distinguish any accident. Weight monitoring to detect the weight of the automobile and along with the Capacity beam to find the number of people travel ling in the dirt bike. All these restrictions are measured to avoid coincidences in bike. With the help of headband finding key, driver without helmet can be ducked. If condition does not unvarying helmet then the LCD will presentation as 'NO HELMET PLS WEAR IT". When malt is detected, its cardinal output is associated to the numeral input pin of Arduino and also .GPS is associated to Arduino cardinal pin and this Arduino is coupled to GSM and it stays from this segment that the communication regarding the existence of accident is guided to a predefined number and matching location.

## Article History

Article Received: 18 May 2019

Revised: 14 July 2019

Accepted: 22 December 2019

Publication: 01 February 2020

**Key words:** IOT, Android, Society & Social cause.

## 1. Introduction

Motorbikes AND scramblers kind an basic a part of customized transference in Asian nation. Though, sadly, it conjointly comprises myriad fortunes and successive loss of survives. Each year, nearby 300,000 youngsters attend the reserve department thanks to bike damages, and a minimum number of teenagers have damages that need some days within the hospice. Figures say, bike expiries accounted for V-J Day of all automobile crash deaths in 2015 and were over twofold the amount of traveler expiries in 1997. [1]

Through AN ONESIS survey directed by the Subdivision of Health, it absolutely was initiate that ninetieth of the motorcycle's rider murdered in coincidences weren't sporting a helmet at the time of influence. This, together with drunk pouring a significant motive of accidents. we have a tendency to aim to alleviate these issues and thus the connected fatalities by making certain that the provision can attire the helmet all the period throughout his/her journey, therefore making certain protection. [2]

The helmet will perceive if the creature is sporting the helmet, mistreatment the heaviness instruments, formfitting within the cushioning froth. The helmet will notice a potential accident, mistreatment the aboard measuring system and compression device. If the values spotted exceed a edge, it's conveyed as AN coincidence. Emergency acquaintances, nominative by the provision throughout app format, ar hip to concerning the potential coincidence, via a system created electronic message and text message, encompassing the discourse and GPS synchronizes wherever the accident had been perceived. [3]

## 2. Related Work

### Proposed Work

Here we have utilized an Alcohol Sensor, Accelerometer, Microcontroller, Communication modules and a ringer for ready reason. Here we structured a framework which checks the two conditions before turned ON the motor of the bicycle. Our framework incorporates a liquor sensor

and a head protector detecting switch. A switch is utilized to recognize whether the biker is wearing head protector. Liquor sensor is utilized to recognize the biker is tanked; the yield is nourished to the MCU. Both the switch and the liquor sensor are fitted in the protective cap. In the event that any of the two conditions are disregarded the motor won't turned ON. Liquor sensor MQ3 is utilized here for identifying the liquor fixation present in the driver's breath. Sensor gives a simple resistive yield dependent on the liquor focus. MCU is the microcontroller unit, which controls every one of the elements of different squares in this framework. MCU takes or read information from the sensors and controls every one of the elements of the entire framework by controlling this information. Liquor sensor is associated with the MCU through an interfacing circuit and the head protector detecting switch is legitimately associated with the MCU. MCU gets information from these sensors and it gives computerized information relating to the yield of sensors to the encoder just if the two conditions are fulfilled

### 3. Literature Survey

The bearing once a traveler contains in a very high-speed coincidence while not sporting a helmet is extremely risky and might cause accident. sporting a headdress will scale back shockwave from the impression and will save a life. There square measure several countries implementing a regulation that needs the motorbike's rider to wear a helmet once equine on their motorbike, Asian country is an example. With this cause, this plan is specifically settled on improve the protection of the motorbike's provision. traveler is afraid once the ordinance is surpassed. A Force Sensing resistance (FSR) and BLDC Fan square measure used for detection of the rider's head and detection of motorcycle's speed severally. A 315-megacycle regularity Segment as wireless link that able to transfer between spreader tour and earpiece journey. PIC16F84a could be a microcontroller to regulate the whole eourlement within the arrangement. only the condition warped the helmet then solely the motorcycle's engine can begin. A crystal rectifier can ostentatious if the motor-powered speed exceeds one hundred km/h[1].

The detached of the sensible helmet is to produce a method and equipment for police investigation and news coincidences. Radars, wi-fi empowered supercomputer, and cloud computing infrastructures are used for building the system. The accident finding system interconnects the measuring device ethics to the mainframe that ceaselessly televisions for unreliable dissimilarities. once Associate in Nursing accident happens, the connected details are sent to the backup acquaintances by utilizing a cloud primarily built service. The automobile position is obtained by creating use of the worldwide positioning system. The arrangement guarantees an unswerving and fast transfer of knowledge concerning the accident in actual time and is befittingly termed Connect. Thus, by

creating use of the ever-present property that may be an outstanding mouth for the workable cities, a wise helmet for fortune detection is made. [2]

The previous insufficient years have revealed Associate in Nursing exponential rise within the whole range of individuals travel through their own private vehicles. a rise in automobiles has additionally statistically diode to a rise within the range of highway fates furthermore. Although heaps have been controlled upon with relevance the security of cars, diminutive has remained done to guard the motorists of 2 wheelers. during this weekly we have a tendency to gift a completely unique methodology, that televisions in material time the road traffic state of affairs behind the motive force of a bike Associate in Nursing additionally an intimation system to tell him concerning constant. A value active format Associate in Nursing a correct algorithmic program utilized in conjunction have additionally been careful. Special cases like giving priority throughout spinning have additionally stayed painted. All systems were planned and advanced exploitation MATLAB 2011b and a Spartan 3E FPGA was utilized to help in feigning a true time atmosphere. [3]

Now a days, the quantity of 2 wheelers in Asian country has drastically enhanced to an excellent extent. Because of that automobile users square measure undergoing various road accidents thereby inflicting decease. The primary and also the primary provision to evade death is to guard our skull, so we tend to select helmets. Even supposing helmets square measure offered all over we tend to don't seem to be mistreatment it properly. This technique could be a special plan that benefits to push the usage of helmet so as to form motorbike pouring safer than previously. [4]

The impression once a traveler comprises in an exceedingly high-speed fortune while not carrying a helmet is extremely risky and might reason accident. Carrying a helmet will scale back shockwave from the impression and will except a life. Near extent unit several countries imposing a guideline that needs the motorbike's provision to wear a helmet once equine on their motorbike, Asian nation is associate example. Through this reason, this plan is particularly industrialized on advance the security of the motorbike's rider. Traveler is afraid once the ordinance is surpassed. A Force Sensing resistance (FSR) and BLDC Fan area unit used for recognition of the rider's head and recognition of motorbike's speed severally. A 315 megacycle per second regularity Component as wireless link that able to interconnect amongst spreader circuit and telephone circuit. PIC16F84a could be a microcontroller to regulate the complete element within the arrangement. Only the condition bowed the helmet before solely the motorbike's engine can begin. A light-emitting diode can flash if the motorized speed exceeds one hundred KM/hour [5].

## 4. Implementation

### 4.1 Java Programming Language

#### Requirement analysis

Requirement analysis regulates the wants of a brand new-fangled arrangement. This plan investigates on invention and supply demand that is needed for this fortunate arrangement. The merchandise demand comprises contribution and output necessities it offers the needs in term of input to supply the desired output. The supply necessities concede transient regarding the software package and hardware that are required to realize the desired pragmatism. Motorcycle's engine can begin. A diode cans gaudy if the motor-powered speed exceeds one hundred km/hour.

#### Hardware Environment

The hardware needs could function the premise for a contract for the implementation of the system and will so be a whole and consistent specification of the entire system. They're employed by code engineers because the start line for the system style. It shows what the systems do and not however it ought to be enforced.

- Hard disk : 500 GB
- RAM : 4 GB
- PROCESSOR : CORE i5/ i7

#### Software Environment

The software requirements are the specification of the system. It should include both a definition and a specification of requirements. It is a set of what the system should do rather than how it should do it. The software requirements provide a basis for creating the software requirements specification. It is useful in estimating cost, planning team activities, performing tasks and tracking the team's and tracking the team's progress throughout the development activity.

- Operating system : Windows 7/8.1
- Languages : Java
- Data Base : MySQL
- IDE : Net Beans 8.2

#### Java

The Java platform is that the best platform for network computing. Running across all platforms -- from servers to cell phones to sensible cards -- Java technology unifies business infrastructure to create a seamless, secure, networked platform for your business. The Java platform edges from an enormous community of developers associated supporters that actively work on delivering Java technology-based merchandise associated services still as evolving the platform through an open, community-based, standards organization observed because the Java Community methodology program. you'll notice Java technology in cell phones, on personal computer computers, on the Web, and even trackside at

Formula One auto race races. the particular reality is these days, you'll notice Java technology concerning all over.

#### Business benefits

A richer user experience - whether or not or not you're using a Java technology-enabled itinerant to play a game or to access your company's network, the Java platform provides the inspiration for true quality. The distinctive mixture of quality and security in Java technology makes it the proper development and activity vehicle for mobile and wireless solutions. the perfect execution atmosphere for web services - The Java and XML languages unit the two most extensile and wide accepted computing languages on the planet, providing most reach to everyone, everywhere, every time, to every device and platform. Enabling business from finish to complete - Java offers one, unifying programming model that will connect all elements of a business infrastructure.

#### 4.2 Features of Java

Java could be a programing language originally developed by James goose at Sun Microsystems (which is currently a subsidiary of Oracle Corporation) and discharged in 1995 as a core element of Sun Microsystems' Java platform. The language derives abundant of its syntax from C and C++ however includes a easier object model and fewer low-level facilities. Java applications are usually compiled to computer memory unit code (class file) that may run on any Java Virtual Machine (JVM) no matter laptop design. Java is all-purpose, concurrent, class-based, and object-oriented, and is specifically designed to own as few implementation dependencies as attainable. it's supposed to let application developers "write once, run anywhere". Java is taken into account by several joined of the foremost influential programming languages of the twentieth century, and wide used from application software system to internet application.

The original and reference implementation Java compilers, virtual machines, and sophistication libraries were developed by Sun from 1995. As of could 2007, in compliance with the specifications of the Java Community method, Sun relicensed most of their Java technologies below the wildebeest General Public License. Others have additionally developed various implementations of those Sun technologies, like the wildebeest Compiler for Java and wildebeest category path.

#### 4.3 Java Virtual Machine

A Java virtual machine (JVM) is a virtual machine that can execute Java byte code. It's the code execution element of the Java package platform. A Java virtual machine may be a program that executes sure different programs, particularly those containing Java computer memory unit code directions. JVMs are most frequently enforced to run on AN existing OS, however cavern be

enforced to run directly on hardware. A JVM provides AN setting during which Java computer memory unit code is dead, facultative such options as automatic exception handling, that provides root-cause debugging info for each computer error (exception), freelance of the ASCII text file.

A JVM is distributed together with a collection of normal category libraries that implement the Java application programming interface (API). These libraries, bundled in conjunction with the JVM, type the Java Runtime setting (JRE). JVMs are obtainable for several hardware and package platforms. the employment of an equivalent computer memory unit code for all JVMs on all platforms permits Java to be delineate as a write once, run anywhere artificial language, versus write once, compile anywhere, that describes cross-platform compiled languages. Thus, the JVM may be a crucial element of the Java platform.

#### 4.4 Data Flow Diagram

A data current diagram shows the way material flows through a procedure or system. It includes data inputs

and, data goods, and the various subprocesses the data passages through. DFDs are built using productivities standardized cryptograms and notation to describe many entities and their associations.

Data flow plans visually represent systems and developments that would be hard to describe in a chunk of text. You can use these illustrations to map out an remaining system and make it better or to plan out a new system for implementation. Picturing each component makes it easy to recognize ineptitudes and yield the best conceivable system.

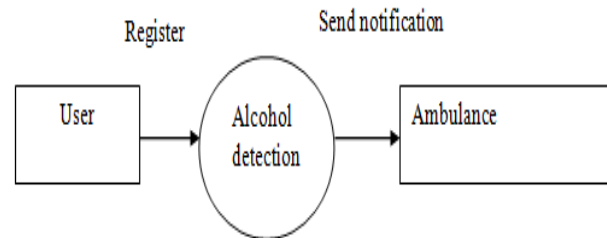


Figure 1: Level 0

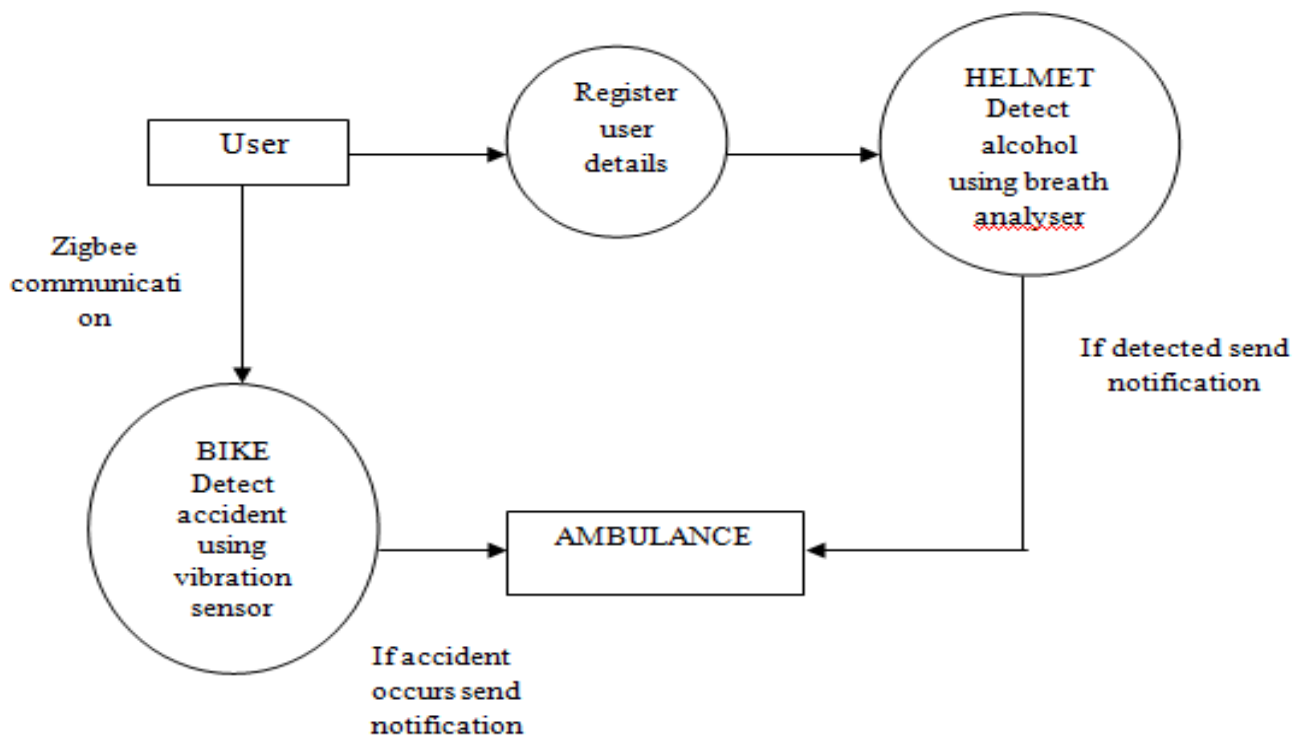


Figure 2: Level 1

#### Activity Diagram

Bustle diagrams show the bureaucratic flow of control between class matters, along with legislative processes like professional workflows. These diagram are made of focused shapes, then associated with arrows. The system set for activity drawings is similar to those for state figures.

1. Instigate your activity plan with a solid round.

2. Connect the round to the opening activity, which is showed with a round-trimmed rectangle.

3. Now, join each activity to supplementary actions with lines that prove the stepwise flow of the entire development.

4. You can also try using swim lanes to epitomize the objects that make each movement.



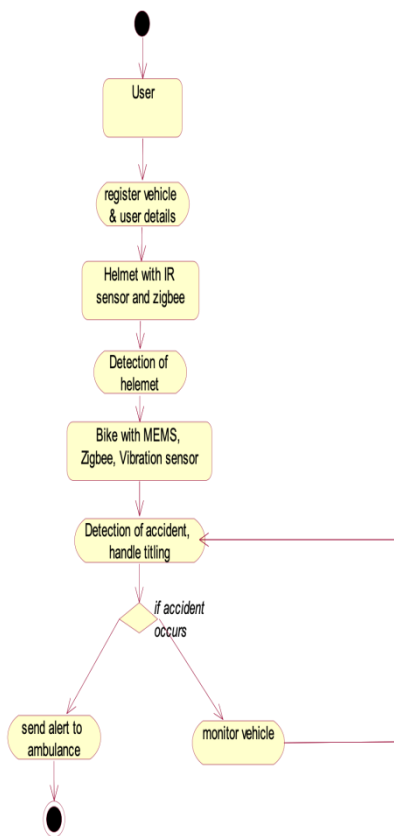
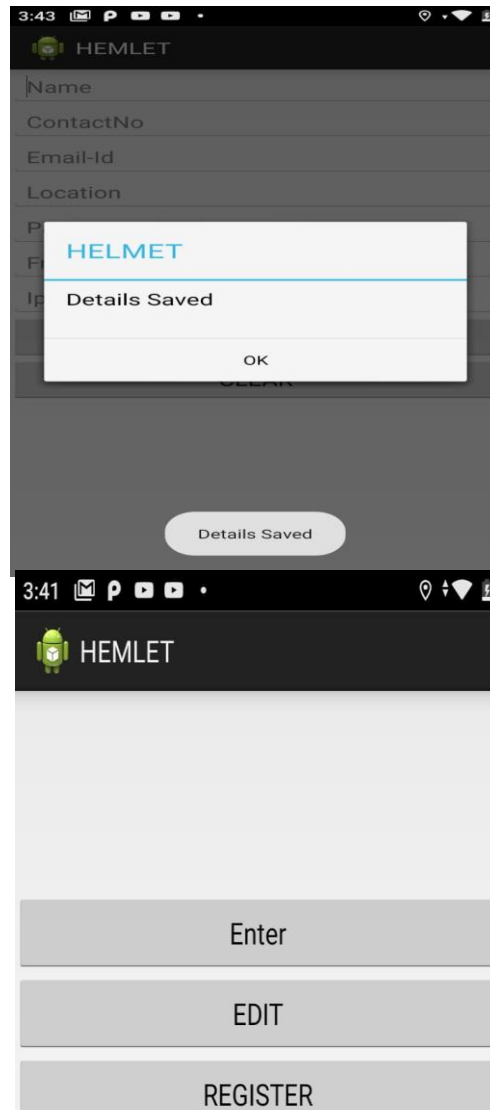
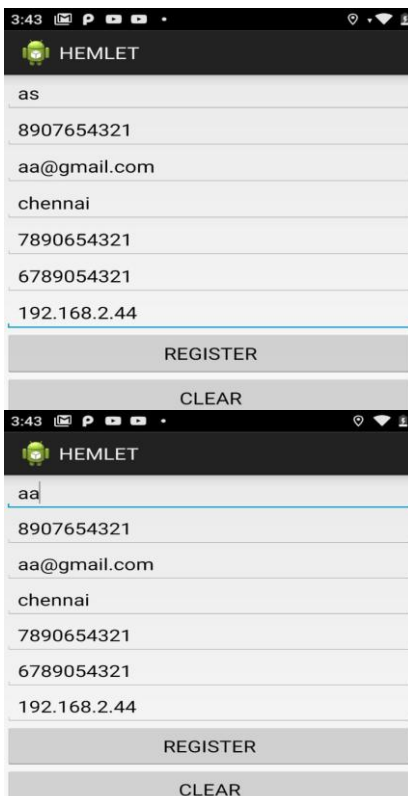


Figure 3: Activity Diagram

## 5. Results



## 6. Conclusion

The accuracy and exactness are high, that shows that our projected mechanism is correct in detective work Associate in Nursing accident and high alcohol consumption. Through this technique we tend to implement notification method once user attempt to begin the bike once he secured by our, his info are going to be send as a notification for the car

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