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Speed Breaker Rewards through Energy Generation Speed Breaker

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ABSTRACT: Our Project Reward system will generate the reward for vehicle which passes through the speed Breaker. By the sensor will get notified about the vehicle owner and the new user in the system will be added.In this system we need to fill the personal info and will need to add the account. The Vehicle no and the acc no get match the reward generated will be transferred to their registered account & further the information is about the generation of energy through speed breaker. The extensive usage of energy has resulted in an energy crisis over the few years. Therefore to overcome this problem we need to implement the techniques of optimal utilization of conventional sources for conservation of energy. This project includes how to utilize the energy which is wasted when the vehicles passes over a speed breaker. Lots of energy is generated when vehicle passes over it. We can tap the energy generated and produce power by using the speed breaker as power generating unit. The kinetic energy of the moving vehicles can be converted into mechanical energy of the shaft through rack and pinion mechanism. Then, this mechanical energy will be converted to electrical energy using generator which will be saved with the use of a battery. The energy we save during the day light can be used in the night time for lighting street lights. Therefore, by using this arrangement we can save lot of energy which can be used for the fulfillment of future demands.This project harvests energy from speed breaker by making gear arrangement and using electronic gadgets. Large amounts amount of electricity can be generated saving lot of money. And if implemented will be very beneficial for Government.When vehicle is in motion it produces various forms of energy like, due to friction between vehicle"s wheel and road i.e. rough surface HEAT Energy is produced, also when vehicle traveling at high speed strikes the wind. The principle involved is potential energy to electrical energy conversion. There is a system to generate power by converting the potential energy generated by a vehicle going up on a speed breaker into kinetic energy. When the vehicle moves over the inclined plates, it gains height resulting in increase in potential energy, which is wasted in a conventional rumble strip. When the breaker comes down, they crank a lever fitted to a ratchet-wheel type mechanism (a angular motion converter) which in turn rotates a geared shaft loaded with recoil springs. The output of this shaft is coupled to a dynamo to convert kinetic energy into electricity.

KEYWORDS: Speed breaker, Power generation, Rack and pinion, Electricity, Energy, Electro-mechanical unit, Nonconventional sources, Kinetic energy, Mechanical energy, Vehicles, rewards.

I. INTRODUCTION

In the present day life, a lot of vehicles move over roads and vehicles possess some kinetic energy by virtue of its motion. On Road these vehicles waste tremendous amount of energy due to speed breakers. In India, the total length of national highways was 76,818 km till 2012 according to Ministry of Road Transport and Highways. There are averagely about 15 to 20 highways in every state of India. The number of vehicles running on Indian roads show increase in trends. The vehicle growth in India has increased from 0.3 million in 1951 to more than 45 million in 2001. About 58.8 million vehicleswere running on roads in 2002, which increased to 72.7 million vehicles in the year 2004. The growth rate of vehicles in India has increased almost 10 percent annually during the last decade Averagely, when we consider speed breaker height of 10 cm , and a 1500 kg vehicle passing over the speed breaker, ample amount of power can be generated. This amounts to 24.52 W of power for 1 minute. Thus in an hour, 1.47 kW of power approx. is generated which will add up to 35.31 kW of power per day. This is equivalent to a large value and is sufficient enough to run 4-6 street lights a day. It contributes greatly to the generation of electricity and thus it will release the load on powerplants and because of this greater equivalents of electricity will be available for industries leading to progressive development of the nation.

II. METHODOLOGY

  RACK
- SPUR GEAR
- FLY WHEEL
- BEARINGS
- SHAFT
- SPRINGS
- ELECTRIC DYNAMO

Python
Python is an object-oriented, interpreted, high-level programming language. It has ahigh-level build in data structuresthat make it very attractive for R.A.D(Rapid Application Development), as well as for use as a scripting or gluelanguage to connect existing components together. Python's syntax are easy to learn and it emphasizes readability and therefore reduces the cost of program maintenance. Python supports modules and packages, which encourages code reuse. The Python extensive standard library is accessible in source or binary form for free of cost on major platforms.

Django
Django is a web application framework built with the base of Python. It allows us to easily create dynamic web appsusing Python . First of all, you need to have Python installed on your computer. On MacOS, you don't need to install Python, unless you'd like to update it to the latest version. To check version of Python on your computer, type python Version on the terminal for Mac OS and the command line for Windows.

### HTML And CSS
HTML(Hyper Text Markup Language) is theuniversal markup languagefor theWeb. HTML letsyou format text,make graphical interfaces, create web-links, input and output forms,add and remove frames and tables, etc., and save itallina file that anybrowsercanexecute anddisplay.
CSS is used to control layout of multiple Web pages all at once. With CSS, all formatting can be detached from theHTML document and deposited in a separate file. CSS gives you total control of the web-page layout, without messing up the file contents.

III. MODELING AND ANALYSIS
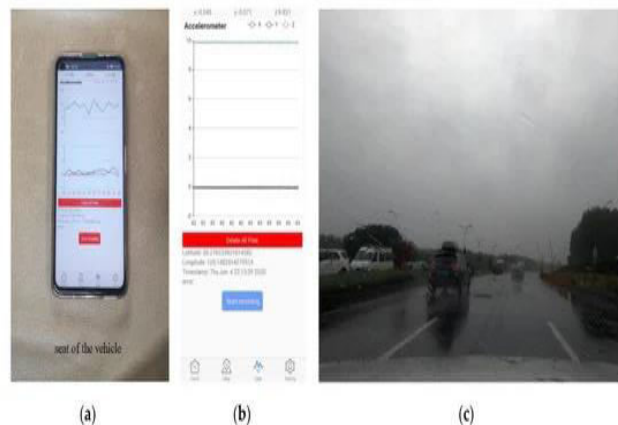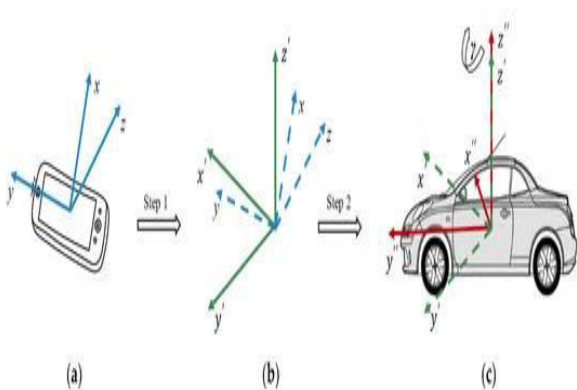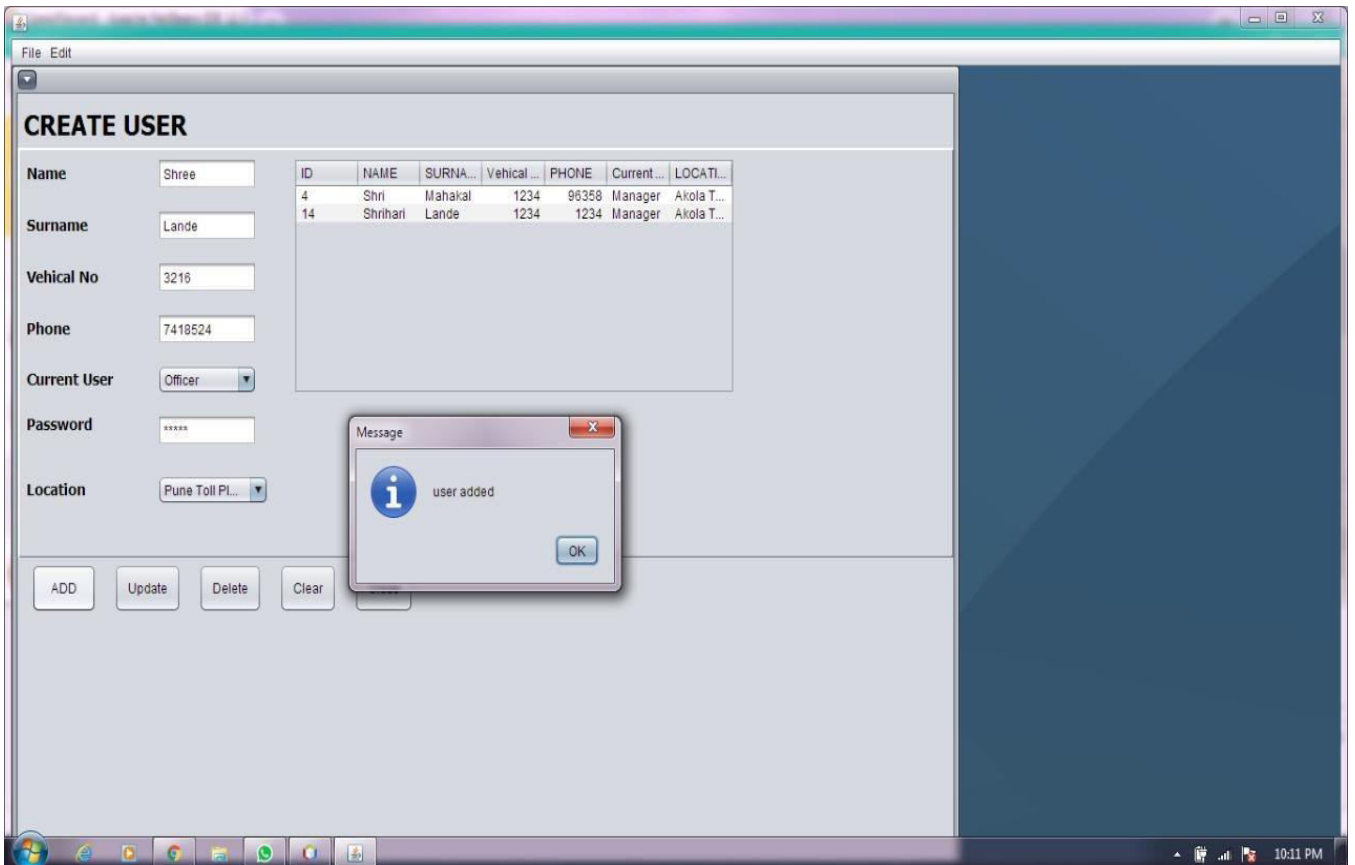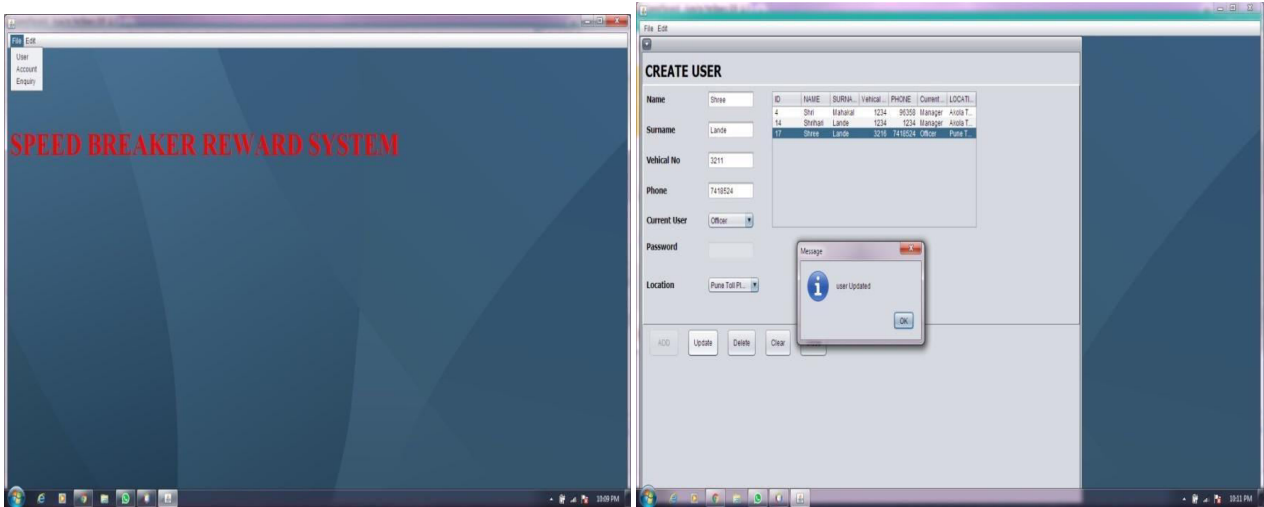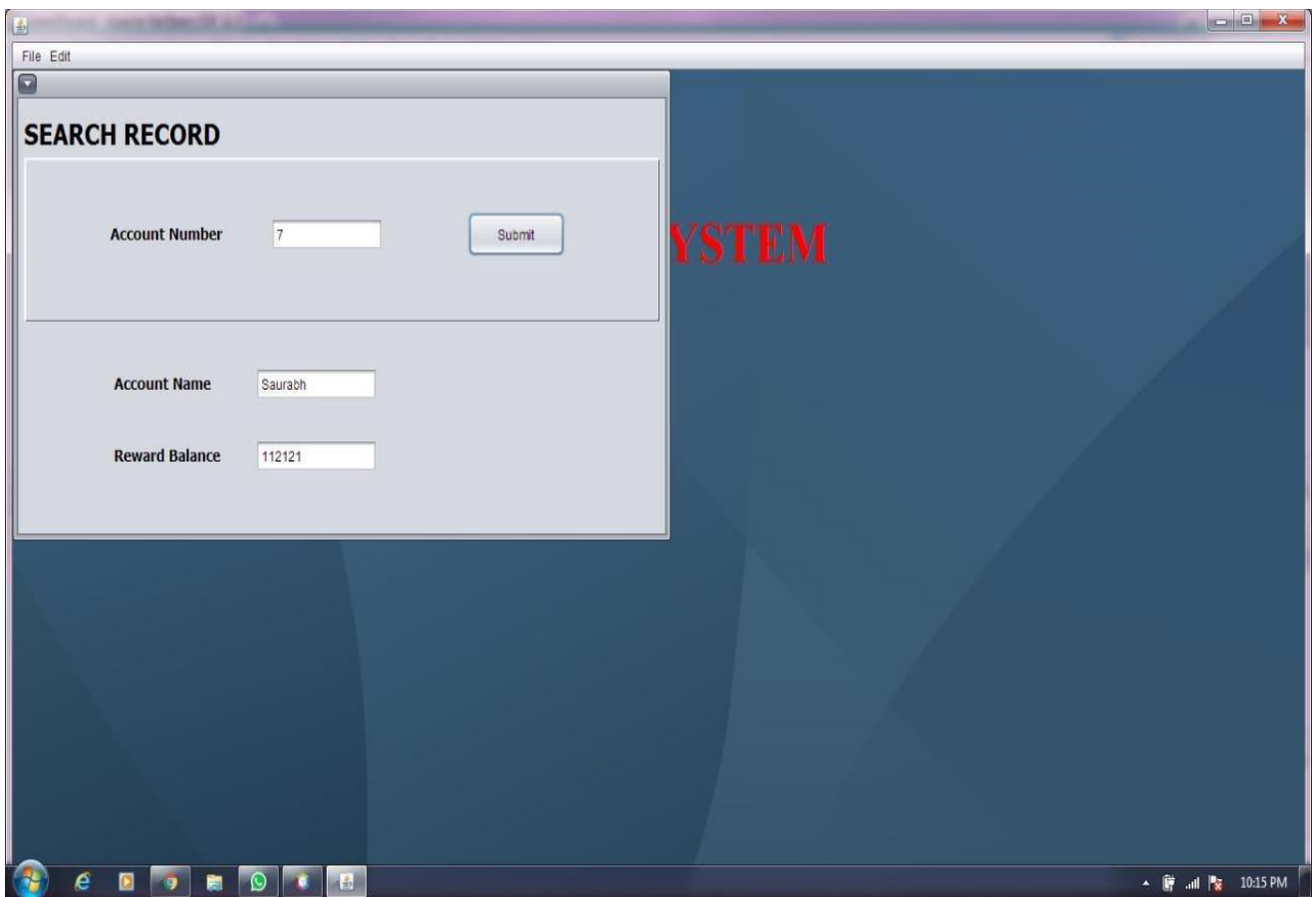
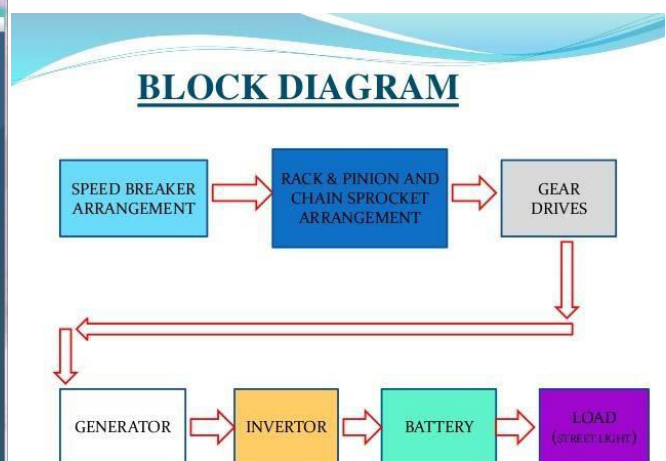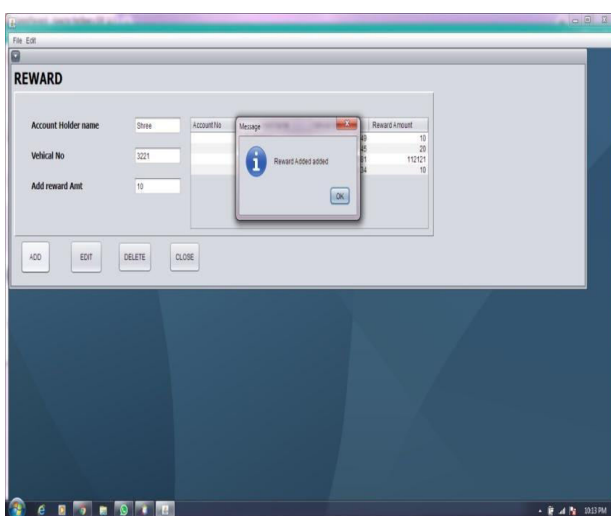**Figures:** Some Screenshots of the website under development.

Figure : Block Diagram Displaying Internal Working and Screen of
Rewards Added to the users account .

Analysis: Working of the website in short.

1) We can have annual electricity generation with the help of this method without depending on other factors.

2) Power generation takes place reasonably and by using non-conventional energy sources which will help to preserve the conventional energy sources for our adjacent future demand.

3) There is no usage of any fossil fuel hence electricity is generated by renewable means.

4) Pollution less energy generation .

5) Simple construction, mature technology and easy maintenance.

6) This method requires less measure of floor area and also the traffic is not obstructed.

7) It is economical and not difficult to install.

8) This method is promising due to its good efficiency and energy recovery criteria.

9) When the vechicle will through speed Breaker Automatically rewards some Amount will be Credited to his/her account.

IV. RESULTS

The main objective of the project is to utilize the energy from vehicles while they pass on the speed breaker. This process is very economical and easy to install.we design a smart speed breaker that can pass vehicles coming from both sides and yet generates energy from it.From this people can get rewards **T&C Apply**.

V. CONCLUSION AND FUTURE WORK

"Electricity plays a very important role in our life". Due to population explosion, the current power generation has become insufficient to fulfill our requirements. In this project we discover technology to generate electricity from speed breakers in which the system used is reliable and this technique will help conserve our natural resources. In coming days, this will prove a great boon to the world, since it will save a lot of electricity of power plants that gets wasted in illuminating the street lights. As the conventional sources are depleting very fast, it"s high time to think of alternative resources. We got to save the power gained from the conventional sources for efficient use. So this idea not only provides alternative but also adds to the economy of the country.

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