

ROAD SAFETY

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Abstract:

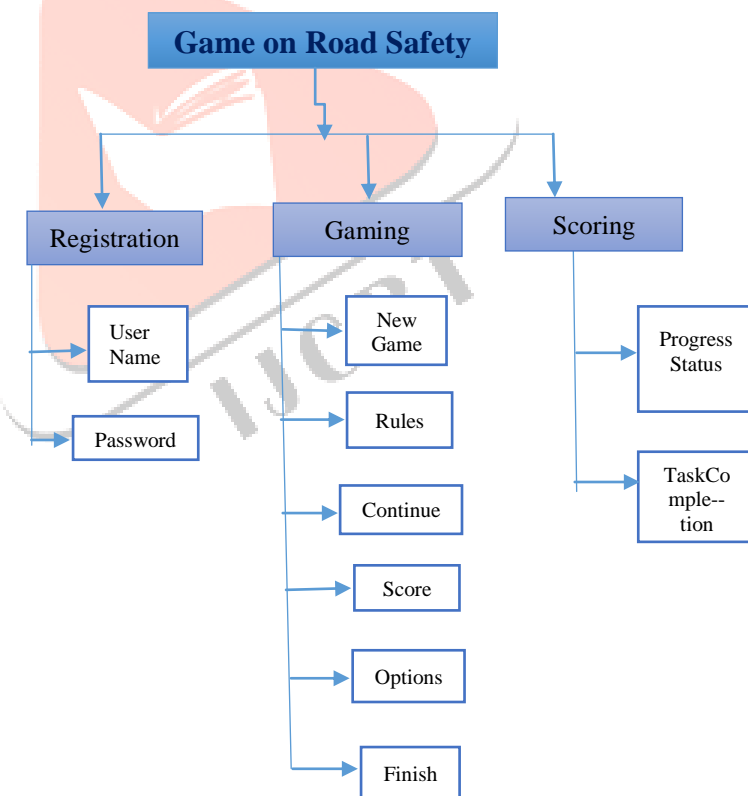
Road Safety Game is the process of learning how to be safe and sensible when driving a vehicle on a road and how to reduce accident causes on road for proper driving. Road safety refers to the methods and measures used to prevent road users from killed or seriously injured. These are one of leading causes of mobility and mortality in the world. According to the World Health organization(WHO), more than 1 million people are killed in the world's roads each year. By using the web application that would have implemented in unity tool then, Road safety game can be improved in various simple ways to reduce the chance of an accident occurring, by knowing the traffic rules and regulations before entering into the task performance. The result show that gaming not only can improve player's knowledge of road rules and road safety, but also can help players retain such knowledge.

KEYWORDS: Accidents, Two-wheeler, Crash pattern, Unnatural Death.

INTRODUCTION:

Road Traffic Accidents (RTAs) have emerged as a new health challenge in the world which not only leads to injuries, disabilities and loss of precious human lives but also imparts a substantial economic burden on the family concerned and the nation as whole. After Ms. Mary Ward, who was the first documented victim of automobile accident that took place on August 31, 1869, the global road traffic fatalities count has raised to about 1.2 million/year. RTAs are the eighth leading cause of death in the world and are expected to rise to the fifth position by the year 2030, if adequate measures are not taken. Road traffic injuries account for about 38 million disability adjusted life years (DALYs) lost worldwide. In India one person dies every four minutes as a result of RTAs. In 2010 about 133,938 fatalities occurred in India as a result of RTAs which were 5.5 % more when compared with the previous year.

MODULES FOR ROAD SAFETY APPLICATION:



Module 1: REGISTRATION

In this module, the person can able to create an account for playing road safety game. It collects details about user name, password, type of vehicle. The type of vehicle may be car or motor bike Rules are framed based on vehicle type.

Module 2: GAMING

As the name suggests, it helps to play the game. New game will make user to start the game as a beginning. If the user already starts to play this game, they can continue this game. They can change the audio and resolution setting from the option menu. If the user fails the game, they can quit the game at any time.

Module 3: SCORING

Score refers to an abstract quantity associated with a player or team. Score is usually measured in the abstract unit of points, and events in the game can raise or lower the score of different parties. Most games with score use it as a quantitative indication of success in the game, and in competitive games, a goal is often made of attaining a better score than one's opponents in order to win. In the scoring process, forecasts which are to be as reliable as possible are made based on experience gathered in the past and also we know our progress status in particular task.

3. Collision involving parked motor vehicle Non-collision accident
4. Collision involving animal 1. Overturning accident
5. Collision involving fixed object 2. Other non-collision accident.
6. Collision involving other object

ACCIDENT CLASSIFICATION BY VEHICLE TYPE INTRODUCTION:

The purpose of this classification is to describe the type of transport accident. Categories: The exclusive categories for classification of transport accidents. In order of precedence, these are

- Motorized Two-Wheeler accident
- Motorized three-wheeler accident
- Car/Jeep/Van/Taxi accident
- Bus Accident
- Light Transport Vehicle accident
- Heavy Articulated Transport Vehicle accident
- Tractor with Trolley accident
- Bicycle/Pedestrian accident
- Animal/Hand Drawn Cart accident

Other-road-vehicle accidents: Collision accident

1. Collision involving pedestrian.
2. Collision involving other road vehicle in transport

Table-1 TOTAL NUMBER OF ROAD ACCIDENTS (IN %) DURING THE CALANDER YEAR 2016.

State	% change over previous year	Number of persons killed
1.Tamil Nadu	13.8	69,059
2.Maharastra	12.7	63,805
3.Madhya Pradesh	11.0	54,947
4.Karnataka	8.8	44,011
5.Kerala	7.8	39,014
6.Uttar Pradesh	6.5	32,385
7.Andhra Pradesh	4.8	24,258
8.Rajasthan	4.8	24,072

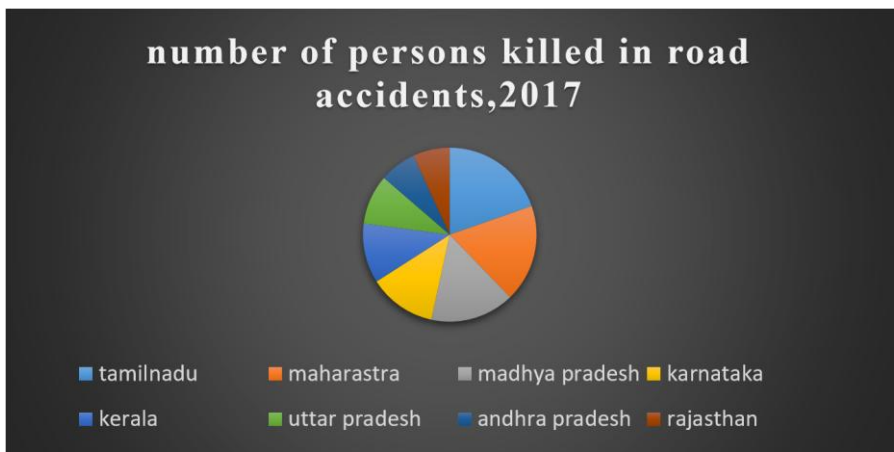


Fig – 1TOTAL NUMBER OF PERSONS INJURED IN ROAD ACCIDENTS (IN %) IN 2017

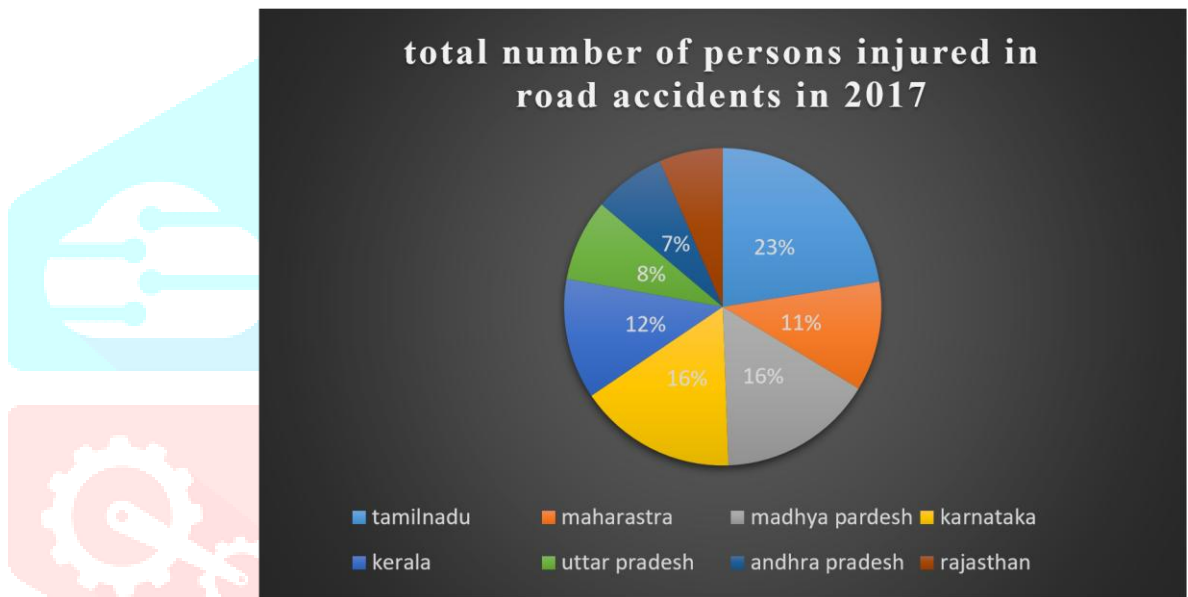


Fig-2: PERCENTAGE SHARE OF NATIONAL HIGHWAYS, STATE HIGHWAYS AND OTHER ROADS IN TOTAL ROAD ACCIDENTS, PERSONS KILLED AND INJURED: 2005 TO 2015

Table-2 TOTAL NUMBER OF ROAD ACCIDENTS (IN %) DURING THE CALANDER YEAR 2017

Year	National Highways			State Highways			Other Roads		
	Road Accidents	Persons Killed	Persons Injured	Road Accidents	Persons Killed	Persons Injured	Road Accidents	Persons Killed	Persons Injured
2005	29.6	37.3	31.3	23.6	27.2	25.7	46.8	35.5	43.0
2006	30.4	37.7	30.8	18.5	26.8	24.9	51.1	35.5	44.3
2007	29	35.5	30.2	24.4	27.7	26.2	46.6	36.8	43.6
2008	28.5	35.6	28.6	25.6	28.4	27.5	45.9	36	43.9
2009	29.3	36	29.6	23.8	27.1	25.5	46.9	36.9	44.9
2010	30	36.1	31.3	24.5	27.3	26.0	45.5	36.6	42.7
2011	30.1	37.1	30.5	24.6	27.4	26.1	45.3	35.5	43.4
2012	29.1	35.3	30.1	24.2	27.3	25.9	46.7	37.4	44.0
2013	28.1	33.2	28.9	25.6	29.6	27.6	46.3	37.2	43.5
2014	28.2	34.1	29.9	25.2	29.1	26.8	46.6	36.8	43.3
2015	28.4	35.0	29.1	24.0	28.0	26.3	47.6	37.0	44.6



Fig-3 Number of Road accidents in National Highways from 2005-2015

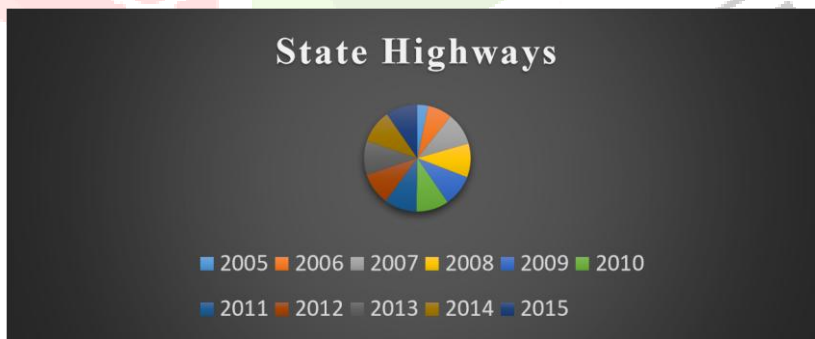


Fig-4 Number of Road accidents in State Highways from 2005-2015

Table-3 Number Of Road Accidents In National Highways, State Highways, Others

State	% change over previous year	Number of persons killed
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Fig-5 Number of Road Accidents in other roads from 2005-2015

1.Tamil Nadu	23	79,746
2.Maharastra	11	39,606
3.Madhya Pradesh	16	55,815
4.Karnataka	16.3	56,971
5.Kerala	12	43,735
6.Uttar Pradesh	8.6	29,439
7.Andhra Pradesh	7.5	26,153
8.Rajasthan	7.3	22,948

GUIDELINES FOR ROAD SAFETY AND PREVENTION OF ROAD ACCIDENTS:

This section provides guidelines for road safety, examining what is known about their practicability, effectiveness, cost and acceptability to the public. In this in chapter some guidelines are developed, of course, may not easily be implemented, but will instead require careful adaptation and evaluation. Where effective guidelines are altogether lacking, scientific research is needed to develop and test new measures.

Some guidelines of Road safety are as follows:

Guidelines for Safe Traffic System Design:

Road traffic deaths and serious injuries are to a great extent preventable, since the risk of incurring injury in a crash is largely predictable and many countermeasures, proven to be effective.

- Make the provision of safe, sustainable and affordable means of travel is a main objective in the

planning and design of road traffic systems. • Preventing pedestrians and cyclists from accessing motorways and preventing motor vehicles from entering pedestrian zones are two well-established measures for minimizing contact between high-speed traffic and unprotected road users.

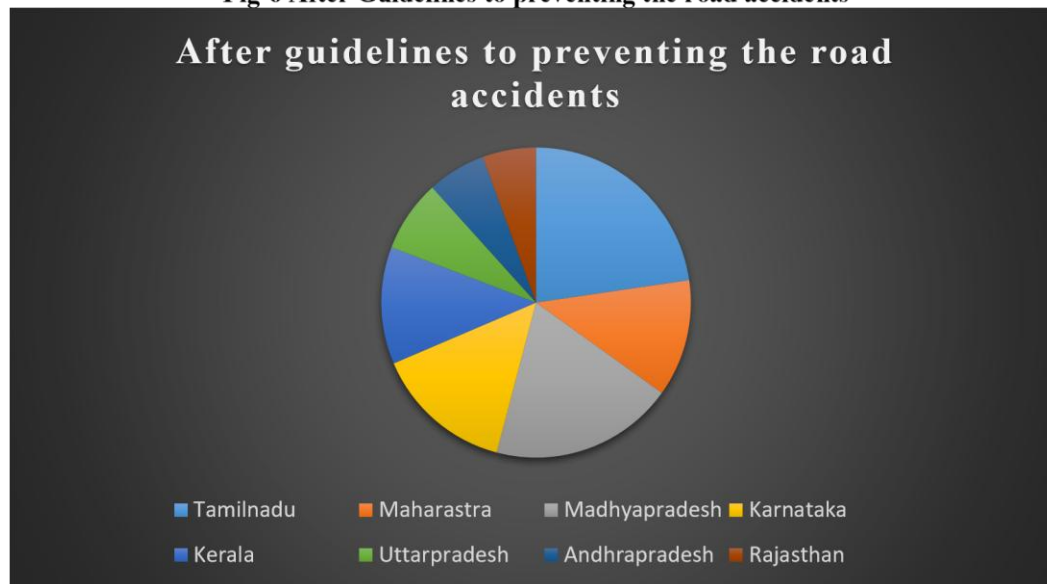
- Giving priority in the road network to higher occupancy vehicles.
- Road safety is the integral part of road design at planning stage.
- Giving vehicles with many occupant's priority in traffic over those with few occupants is a means of reducing the overall distance travelled by private motorized transport and hence of cutting down on exposure to risk. Guidelines for Pedestrian and Bicyclist Safety:

Although all types of road user are at risk of being injured or killed in a road traffic crash, there are notable differences in fatality rates between different road user groups. In particular, the "vulnerable" road users such as pedestrians and two-wheeler users are at greater risk than vehicle occupants and usually bear the greatest burden of

injury. This is especially true in countries like India, because of the greater variety and intensity of traffic mix and the lack of separation from other road users. Some guidelines are given for pedestrian and two-wheeler safety:

- Free left turns must be banned at all signalized junctions. This will give a safe time for pedestrians and bicyclists to cross the road.
- Speed control in urban areas. Maximum speed limits of 50 km/h on arterial roads need to be enforced by police monitoring, and 30 km/h in residential areas and by judicious use of speed breakers, dead end streets and mini roundabouts. In the short term of three years, a target of covering 10% of the roads can be attempted.

Fig-6 After Guidelines to preventing the road accidents



- Increasing the conspicuity of bicycles by fixing of reflectors on all sides and wheels and painting them in yellow, white or orange colors.

This project will be able to track the user's status based on rules and regulations on road traffic. The game application can be made one of the

qualifying parameter for Learner's License. This will reduce the number of accidents. Research shows that human error plays a large part in road accidents. It is a contributory factor in about 95 percent of accidents. By teaching the basics of road safety to children, they are prepared for the future and developing positive, safe attitudes that will have benefit in years to come as these children become teenagers and then adults. Inculcation of safety skills in children can provide lifelong benefits to society. In countries where the number of motorized vehicle is still increasing, the number of accidents is likely to rise unless steps are taken to educate road users at an early age. This project will be able to help the user in many ways such as: decision making skills that will enable them to make choices and to take responsibility

for their own safety and that of others, esteem and care for other people, on.

This game consists of three respective modules such as: Registration, Gaming, Validation.

In this module, the person can be able to create an account for playing road safety game. It collects details about user such as name, Date of birth, type of the vehicle. Rules are framed based on the vehicle. In the second module the user will be given a chance to select either from the following options: New Game, Rules, Continue, Score, Options, Finish. Games on road safety helps the player to gain knowledge about the traffic rules. New game will make user to start the game as a beginner. If the user already start to play this game, they

can continue this game. They can change the audio and resolution setting from the option Menu. If the user fails the game, they can quit the game at any time.

The third module is considered as the last stage of the game has two

respective components such as: Take Completion, Progress Status. This module will be able to track the user's status based on rules and regulations on road traffic. If the user follows correctly, the score gets incremented. It shows the report based on user completion in the game. The Game application can be made one of the qualifying parameter for Learner's License.

By the following guidelines, reduce the road accidents and improve as,

CONCLUSION AND SUGGESTIONS:

Now the cities are becoming increasingly unfriendly to pedestrians. These are too many road accidents, resulting in loss of life. Safety is the process of learning how to be safe and sensible. It aims to reduce the harm resulting from vehicle collisions. Harm from road traffic crashes is greater than that from all other Transportation modes combined driving license to make roads safer, driving license exist. The main purpose is to examine the effect of game based learning on knowledge acquisition & retention of road rules. There has been a dramatic

increase in the number of accidents. This proposal will develop & implement to improve the road safety by using the web applications that is unity tool and it will help to understand the traffic rules and regulations easily and also can easily improve our knowledge in particular domain.

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