On The Spot (Realtime) Accident Information & Insurance Dispute Resolution

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Abstract: There should be a system/portal forgathering of on the spot information during roadaccidents. This information should include photos ofthe site, interviews with eyewitnesses, informationon injuries and fatalities, reason for accident, speed ,road condition on relative basis, etc. All this data cango into a central database. This responsibility forcollecting the data could be given either to police, transport authority, ambulance or even ordinarycitizens who volunteer for the same. In the samesystem, there should also be a provision to submit/exchange insurance numbers/ details in order tosettle the dispute if any arising out of the accident.

1. Introduction

An insurance claim is a formal request by apolicyholder to an insurancecompany forcoverageor compensation for a covered loss or policy event.The insurance company validates the claim and,once approved, issues payment to theinsured or anapprovedinterested party on behalf of the insured.Insurance claims cover everything from deathbenefits on life insurance policies to routine andcomprehensive medical exams. In thiswebapplication the user can claim the insurance and thepolicedepartment can updatethere informationabout the accident. Road accidents are undoubtedlythe mostfrequent and, overall, the cause of the mostdamage. The reasons for this are the extremely denseroad traffic and the relatively great freedom ofmovement given todrivers. Accidents involvingheavy goods vehicles (especially coaches and lorrieswith trailers) occur all too frequently despite caIlsfor responsible behaviour, for respect of the loadingregulations and the highway code, as well as theobligation for drivers toadapt their speed, whichaffects stopping distances, to the traffic and weatherconditions (rain, ice, fog, etc.).

The prevention ofroad accidents is also extremelyimportant and willbeensured by strict laws, by technical and policecontrols, ongoing training for drivers (especiallythose involved in the transport of dangeroussubstances) and, if need be, by legal andadministrative penalties for those responsible.Thecontrol of all accidents is, in the first instance, theresponsibility ofthe commander (chief) andpersonnel of theaffected means of transport. It is upto them to limit the resulting damage as much aspossible. Passengers must obey the directives of thepersonnel on board (protective and rescue measures)and behave as they are instructed by the regulationson disaster situations, especially air, rail or maritimedisasters.As far as search, rescue and assistanceoperations are concerned, the means or system oftransport involved and thearea (country) where itoccurs will determine who is the person in charge atthe disaster

site.The main objective of this system isto provide emergency service to get the accidentinformation and reach in time. Data integrationenables better faster decision on data from heterogeneous sources and provides saving in lifeand time.Automobiles are very important to go toworkplaces, and to deliver goods. But often theypave the way to big disasters. Road accidents are themost unwanted thing to happen to a road user,though they happen quite often. It has beendeveloped to make reporting easier, provideconsistency in reporting data, assess trends andultimately contribute to injury prevention.
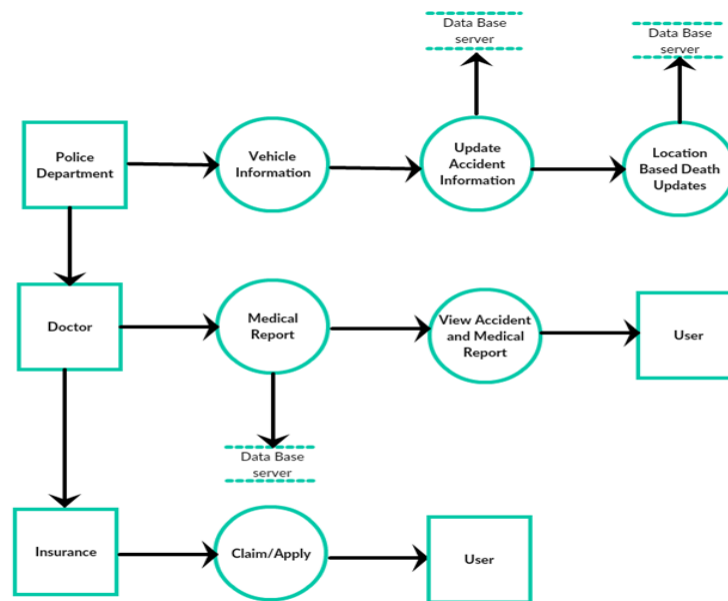
Figure. 1. Overall DFD diagram

2. Literature Survey

Jia-Li Yin, and Bo-Hao Chen "An Advanced DriverRisk Measurement System forUsage-BasedInsurance on Big Driving Data" Usage-based-insurance is an emerging automobile insuranceservice in which the driver premium is setindividually for each policyholder. A personalizedautomobile insurance mechanism presentschallenges that differ from those presented by thegeneral driver assistance applications that analyzedriver behaviors. In this paper, a novel frameworkbased on boosted multiple-kernel learning isproposed to reflect the driving risk level of eachdriver for automobile usage-based-insurance. In theproposed framework, a set of kernels is specified torepresent the inherent characteristics of vehicle-oriented, driver-oriented, and lane-orientedattributes. These multiple kernels are carefullyintegrated using the AdaBoost technique to realizeparticular collaborative features for driving riskassessment. Experimental results obtained using alab-recorded driving dataset under real worldconditions reveal that the proposed frameworkexhibits impressive accuracy and robustness in termsof different driving risk levels.ChenfeiSun,Qingzhong Li1,Hui Li1,Yuliang Shi,ShidongZhang1,And Wei Guo1 "Patient Cluster DivergenceBased Healthcare Insurance FraudsterDetection"Healthcare insurance frauds are

causingmillions of dollars in loss for public healthcare fundsaround the world. Healthcare fraud detectionmethods can help us to avoid the loss of medicalhealthcare insurance funds and to improve medicalquality. The existing fraudster detection methodsalways consider people who violate normal behaviorpatterns as fraudsters. However, fraudsters can evadethese monitors by camouflage, by adding normalbehaviors so that they look ''normal.'' Our focus isto spot healthcare insurance patient fraudsters in thepresence of camouflage. Although camouflage mayhinder fraudster detection to some extent, we findthat camouflage behaviors always sustain in a shortperiod when the fraudster is conducting fraud.JiyaoAn, Lifu, Meng Hu, Weihong Chen, Jiawei Zhan "Anovel fuzzy-based convolutional neural networkmethod to traffic flow prediction with uncertaintraffic accident information"As a key part of themethod of improving traffic capacity, traffic flowprediction is becoming a research hot-spot of trafficscience and intelligent technology, in which theaccuracy of traffic flow prediction is particularlyconcerned. In this study, a novel fuzzy-basedconvolutional neural network (FCNN) method isproposed to predicting traffic flow more accurately,in which a fuzzy approach has been applied torepresent traffic accident features when introducinguncertain traffic accidents information into theconvolutional neural network (CNN) at the firsttime. Weiwei Lin1 , Ziming Wu1 , Longxin Lin2, Angzhan Wen1 , and Jin Li3 "An Ensemble RandomForest Algorithm for Insurance Big DataAnalysis"Due to the imbalanced distribution ofbusiness data, missing of user features and manyother reasons, directly using big data techniques onrealistic business data tends to deviate from thebusiness goals. It is difficult to model the insurancebusiness data by classification algorithms likeLogistic Regression and SVM etc. In this paper, weexploit a heuristic bootstrap sampling approach combined with the ensemble learning algorithm onthe large-scale

insurance business datamining, andpropose an ensemble random forest algorithm whichuses the parallel computing capability and memory-cache mechanism optimized by Spark.

3. Existing System

In the existing system, a lot of efforts have beenearlier done on web based information systems incase of road accidents, traffic information,management, analysis and reporting etc. with thedevelopment of Information Technology. The issueis that this system is for specific emergency responseservices, only applicable in India. Also, the system isprone to increased false positives because there is nofilter in place to verify if an accident detected is areal accident or just false.

The disadvantages of the existing system includes:
1.The common problem faced by using paper formis the difficulties in retrieving the
report back foranalyzing purpose as this can be a time consuming
2.The accident reporting form must be completed byhandy and often leads to delays
in report submission.
3.These problems disable a quick response fromsafety and health officers when an
accident happensand interferes with accident analysis.

4. Proposed System

In the proposed system, the police department can updateall the informationaboutaccidents that can be directly reported to the emergency system. In this we are goingtomaintain a system where we can gather all the information about the spot informationduring road accidents. The information can be anything which can include photos of thesite, information on injuries and fatalities, reason for accident, speed, road condition onrelative basis, etc. The centralized server or database is maintained to store all the information about the accident as the doctor can also upload their information about theaccident it will store in the server. This duty regarding gathering the information could beoffered either to police, transport experts, rescue vehicles or even customary subjects whovolunteer for the equivalent. Then the user will request the doctor and police for the reportto claim the insurance.

The advantages of the proposed system are:
1.The benefits include fewer delays, report submission to various departments simultaneously, easier means of reporting and can easily be emailed.
2.Development of the application, it significantly improves the timeliness of accident reporting as it encourages prompt reporting and investigation for quick action.
3.Application consists of important detail, which is sufficient for summary of accidentreporting.
4.It significantly improves the timeliness of accident reporting as it encourages prompt reporting and investigation for quick action
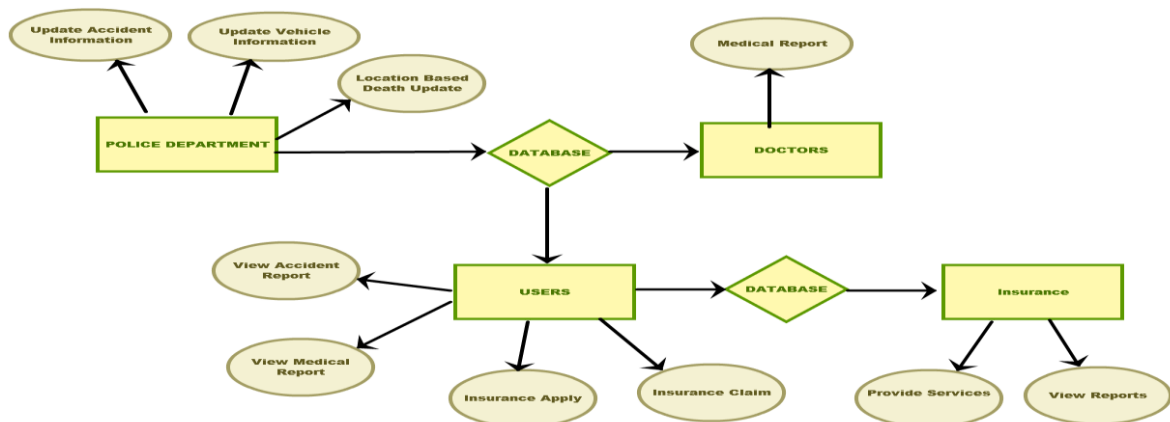

Figure. 2. Overall ER diagram

5. Methodology

The test process is initiated by developing a comprehensive plan to test the general functionality and special features on a variety of platform combinations. Strict quality control procedures are used.The process verifies that the application meets the requirements specified in the system requirements document and is bug free. The following are the considerations used to develop the framework from developing the testing methodologies.
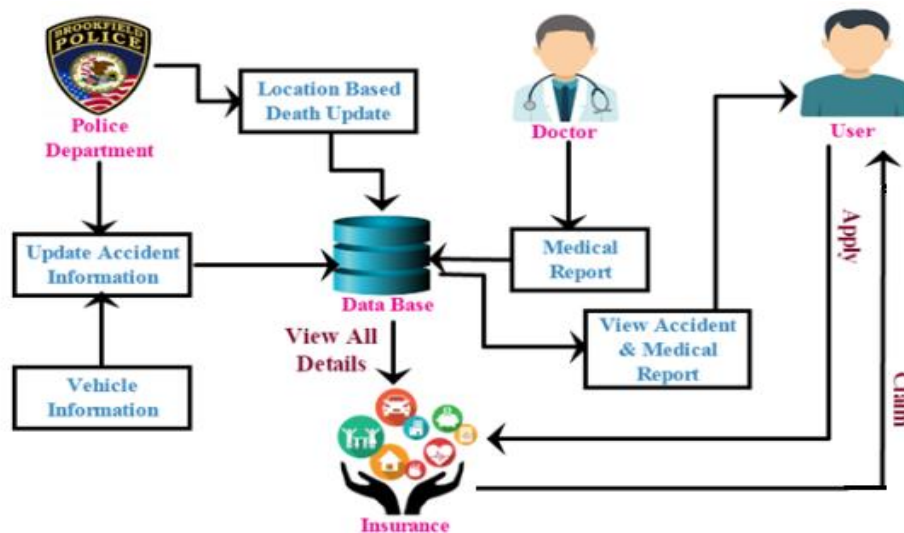
Figure.3. Block diagram of proposed system

6. Types of Tests

Unit testing

Unit testing involves the design of test cases that validate that the internal program logic is functioning properly, and that program input produces valid outputs. All decision branches and internal code flow should be validated. It is the testing of individual software units of the application .it is done after the completion of an individual unit before integration. This is a structural testing, that relies on knowledge of its construction and is invasive. Unit tests perform basic tests at component level and test a specific business process, application, and/or system configuration. Unit tests ensure that each unique path of a business process performs accurately to the documented specifications and contains clearly defined inputs and expected results.

Functional test

Functional tests provide systematic demonstrations that functions tested are available as specified by the business and technical requirements, system documentation, and user manuals.Functional testing is centered on the following items:

Valid Input   : identified classes of valid input must be accepted.
Invalid Input   : identified classes of invalid input must be rejected.
Functions   : identified functions must be exercised.
Output   : identified classes of application outputs must be exercised.
Systems/Procedures: interfacing systems or procedures must be invoked.

Performance Test

The Performance test ensures that the output is produced within the time limits, and the time taken by the system for compiling, giving response to the users and requests being sent to the system to retrieve the results.

Integration Testing

Software integration testing is the incremental integration testing of two or more integrated software components on a single platform to produce failures caused by interface defects.The task of the integration test is

to check that components or software applications, e.g. components in a software system or – one step up – software applications at the company level – interact without errors

Acceptance Testing

User Acceptance Testing is a critical phase of any project and requires significant participation by the end user. It also ensures that the system meets thefunctional requirements.

Data Mining

Data mining is defined as a process used to extract usable data from a larger set of any raw data. It implies analysing data patterns in large batches of data using one or more software. Data mining has applications in multiple fields, like science and research. As an application of data mining, businesses can learn more about their customers and develop more effective strategies related to various business functions and in turn leverage resources in a more optimal and insightful manner. This helps businesses be closer to their objective and make better decisions. Data mining involves effective data collection and warehousing as well as computer processing. For segmenting the data and evaluating the probability of future events, data mining uses sophisticated mathematical algorithms. Data mining is also known as Knowledge Discovery in Data (KDD)
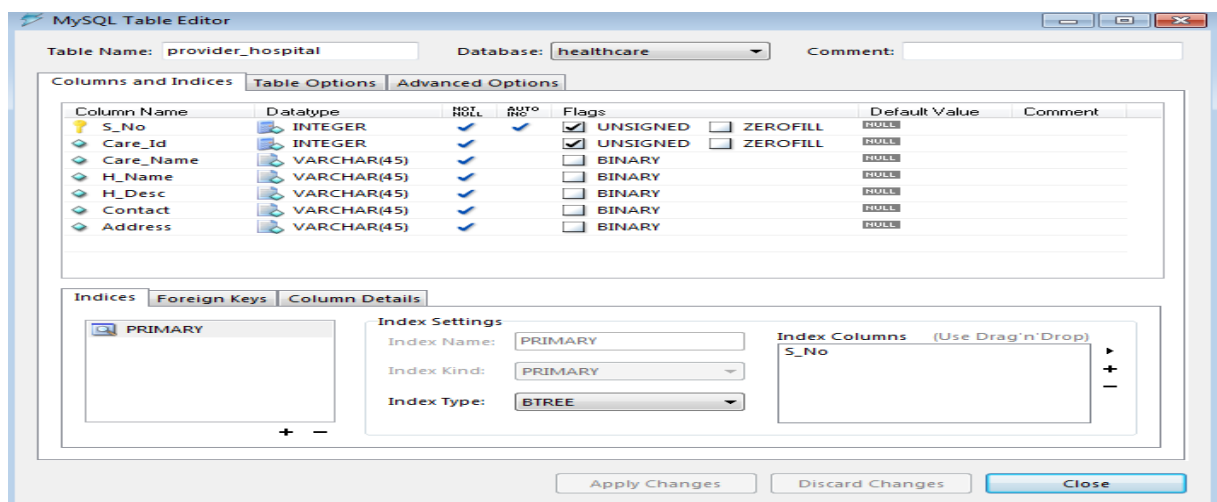

Figure.4. Input Design

Figure.5. Database Design

7. Modules Design

ACCIDENT DATA FROM CONCERNING ORGANIZATION:

The accident data will be collected from the different organization by the police department. The information can include a photos of the site where accident has been occurred, interviews with the eyewitnesses the person who was physically present at the place where accident has happened, and also can be the information about the injuries and fatalities, reason for accident may be over speeding, drunken driving, distractions to driver, red light jumping, avoiding safety gears like seat belts and helmets etc.

Fig-6. Police Department Registration Portal

ACCIDENT MEDICAL REPORT:

The doctor will update the accident medical report such as movement of client on impact, immediate symptoms, current symptoms and treatment, loss consequential to injury and atlast the reviews of the medical report. The victims or user can also view the medical report which is updated by the doctor.

INDIVIDUAL ACCIDENT CASUALTY REPORT MATCHING:

In this project, the police and hospital records from the road accident casualties were collected to determine their matching and reporting records of the particular victim. The police department will update the road accident information and also along with the vehicle information. The police department also updates the location based on death updates, it is all maintained and stored in the secured database.

INSURANCE CLAIM FOR ACCIDENT COMPENSATION:

The claim is the first step toward being compensated for medical expenses, lost wages, or other damages resulting from the accident. The insurance company will then open an investigation of the claim and victims may be asked to submit the accident report or independent medical examination by a doctor.

Fig-9. Doctor Registration Portal

8. Future Enhancement

The clustering technique identifies significant crime patterns that can help both in criminology and criminal justice industry. Three different aspects of crime performed against women in India are brought into light by this experimental research work. We have labelled the clusters according to the most frequent context word, but it may happen that some of the context words existing in the cluster do not reflect the same crime aspect as the label of the cluster. In that case,we can collect the context words defining the same meaning. This task is known as paraphrase extraction which is considered as a future work. The paraphrase extraction can significantly improve the relation labelling scheme. Apart from the chosen domain of entity pairs, other different domains can also be considered as future research work. This method can also be applied on general datasets.Improvisations in the methodology will further provide a vast description of crime related activities by exploring other aspects of crime pattern analysis and eventually it will help the law enforcement agencies to analyze crime at a faster pace.

9. Conclusion

It is concluded that the system is to provide emergency service to get the accident information and reach in time. Data integration enables better & faster decision on data from heterogeneous sources and provides saving in life and time. Automobiles are very important to go to workplaces, and to delivergoods. But often they pave the way to big disasters. Road accidents are the most unwanted thing to happen to a road user, though they happen quite often. It has been developed to make reporting easier, provide consistency in reporting data, assess trends and ultimately contribute to injury prevention.

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