**Tell me about the most interesting project you have worked on this year and the biggest thing you learned from it?**

One of the most interesting projects I have had the pleasure of working on was a real time crime tracking system . I found it so interesting because of the social impact it had on my community. I also enjoyed working as a team. The discussions we had about the pros and cons of each step were just exhilarating. I think it was such a joy to be able to see a project from start to finish. I really learned a lot about teamwork, communication and the importance of making and sticking to a plan.

**Abstract:**

In September 26, 2016 , the FBI released its annual compilation of crimes reported to its Uniform Crime Reporting (UCR) Program by law enforcement agencies from around the nation. [*Crime in the United States, 2015*](https://ucr.fbi.gov/crime-in-the-u.s/2015/crime-in-the-u.s.-2015/home) reveals a 3.9 percent increase in the estimated number of violent crimes and a 2.6 percent decrease in the estimated number of property crimes last year when compared to 2014 data.

According to the report, there were an estimated 1,197,704 violent crimes committed around the nation. While that was an increase from 2014 figures, the 2015 violent crime total was 0.7 percent lower than the 2011 level and 16.5 percent below the 2006 level.

Among some of the other statistics contained in *Crime in the United States, 2015*:

* The estimated number of murders in the nation was 15,696.
* During the year, there were an estimated 90,185 rapes. (This figure currently reflects UCR’s legacy definition. Learn more about the [revised rape definition](https://ucr.fbi.gov/crime-in-the-u.s/2015/crime-in-the-u.s.-2015/offenses-known-to-law-enforcement/rape).)
* There were an estimated 327,374 robberies nationwide, which accounted for an estimated $390 million in losses (average dollar value of stolen property per reported robbery was $1,190).
* Firearms were used in 71.5 percent of the nation’s murders, 40.8 percent of robberies, and 24.2 percent of aggravated assaults.
* Analyzed Property crimes resulted in losses estimated at $14.3 billion. The total value of reported stolen property (i.e., currency, jewelry, motor vehicles, electronics, firearms) was $12,420,364,454.

112 -🡪 Emergency number in usa

* **Proposal:** Usually the process of investigating a crime follows many phases like assigning a dispatch team to the crime scene, crime scene analysis (blood spatter, forensic), investigation, finding the suspect, issuing warrant. In addition to that, most of the crimes are undiscovered at the first instance. In order to reduce the effect of crime immediate action is needed. Further, this process is tedious and requires lot of paperwork.

This concept is based on internet of thing where computing devices embedded in everyday objects, enabling them to send and receive data.The emergency button is provided in the watch which is connected to the internet. Whenever a person is in dangerous situation, he/she presses the emergency button.

The current location of the person in danger is tracked along with latitude and longitude. Normally police departments use patrolling officers to limit criminal activity and maximize safety in particular areas, protecting both people and property.

The alarm request is automatically routed based on shortest path algorithm.

The distance between victim and patrol officer is calculated based on latitude and longitude and converted to km. The request is routed to nearest km of patrol officer.

* Tracked the location of the victim using latitude and longitude of that current location using Google Maps Geocoding API to reach the criminals which reduced 1/5th of the response time .
* Visualized the statistics of criminal records using JFreeChart .
* JfreeChart is an open source library developed in Java. It can be used within Java based applications to create a wide range of charts. By using JFreeChart, we have created 2D and 3D charts such as pie chart, bar chart, line chart, XY chart and 3D charts.
* Statistic based on number of crime rate per year across the city.
* Percentage of crime rate based on category and location.
* This project addresses the immediate response taken from police department when the crime is reportd .Our project follows ecosystem model of networks and enterprises that are involved in the crime management system.

**Organization:**

Public Organization:

Police organization - Commissioner Organization - Manages the requests from the Analyst Organization to process the Identification sings of the Potential suspect or Unidentified Criminal.

Lab organization – Attorney Organization - Creates Cases for the requests send by the Commissioner to summon the criminal to the Judiciary system.

Various roles in the application:

* Public Role :
  + Creates Emergency Request to the near by Police/Investigator to arrive at the requested location.
  + Have access to the nearby Investigator’s location based on the shortest path Algorithm.

Investigator Role:

* + Manages the emergency requests which are automatically assigned from intelligent routing technique.
  + Manages Analyst dispatch request by calling the analyst to arrive at the location.
* Manages Dispatch request from the investigator.
* Collects the DNA and Finger Print Samples from the Crime Scene and request for testing to the Lab Organization.
* Attaches the Potential Suspect’s Identification details to the Case Files.
* **Role of Blood Stain pattern Analyst:** The primary purpose is the collection and analysis of physical evidence when the crime has happened. In this case, Bloodstain pattern analysts examine the location and shape of blood drops, stains, puddles, and pools. He collects, analyses and maintains all the criminal blood stain data and shares them with police department.
* **Role of forensic Analyst: DNA analysts** play a key role in the investigation of violent crimes. They collect, test and analyze blood samples to help provide critical evidence of how a crime happened and who committed it.

There are following six phases in every Software development life cycle model:

1. Requirement gathering and analysis
2. Design
3. Implementation or coding
4. Testing
5. Deployment
6. Maintenance
7. **Requirement gathering and analysis:** Project requirements are gathered in this phase. We researched about crime management system.
8. **Design:**  In this phase the system and software design is prepared from the requirement specifications which were studied in the first phase. System Design helps in specifying hardware and system requirements and also helps in defining overall system architecture. The system design specifications serve as input for the next phase of the model.
9. **Implementation / Coding:**  After the system design was completed, the work is divided in modules/units between the team members and actual coding is started.
10. [**Testing**](http://istqbexamcertification.com/what-is-a-software-testing/)**:**  After the coding part was developed we tested the code against the requirements to make sure that the product is actually solving the needs addressed and gathered during the requirements phase. During this phase all types of [functional testing](http://istqbexamcertification.com/what-is-functionality-testing-in-software/) like [unit testing](http://istqbexamcertification.com/what-is-unit-testing/), [integration testing](http://istqbexamcertification.com/what-is-integration-testing/), [system testing](http://istqbexamcertification.com/what-is-system-testing/), [acceptance testing](http://istqbexamcertification.com/what-is-acceptance-testing/) are done as well as [non-functional testing](http://istqbexamcertification.com/what-is-non-functional-testing-testing-of-software-product-characteristics/) are also done.

The **Common Gateway Interface** (**CGI**) is a standard for writing programs that can interact through a Web server with a client running a Web browser. These programs allow a Web developer to deliver dynamic information (usually in the form of HTML) via the browser.