

FIR Registration Using Chatbot

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ABSTRACT: To humans, a chatbot is a fantastic advancement. A Chatbot's use may be observed in a variety of sectors. The technique for planning and implementing a Chatbot is covered in this document. After learning the victim's requirements, an Android-based bot may work with them. The main purpose of this system is to register an F.I.R through chatbot in an efficient manner. The main objective is to efficiently provide easy user interface to the victim(user) to gain information regarding different crimes as well as report crime through a fully automated chatbot system that not only saves lots of time but also gives realtime results. The system handles all the operations, including asking questions that is needed in order to report a crime and generates reports as soon as the victim(user) answers the questions, that includes name, email, and other personal questions. Simultaneously the police can access the generated report through a separate portal and can proceed to take action accordingly.

KEYWORDS: Crime Report, Crime Information, Efficient Chatbot, Police, Public Safety.

I. INTRODUCTION

Today internet has become reality and usage of this has become very much popular. And during this pandemic situation there is tremendous increase in the usage of the internet all over the world for educational purpose, job purpose, establishment of start-ups and many more. Chatbot is a great innovation to humans. The use of a Chatbot can be seen in different fields. This paper covers the procedure used to plan and actualize a Chatbot. Android based bot can cooperate with the victim after understanding the prerequisite of victim. So rather than a human on one side answering to the questions of another human on the opposite side the bot will act about as a human and answer to the questions of the user[1], [2].

As of now, the lawbreaker cases in India are quickly expanding with how much wrongdoings carried out are expanding. Be that as it may, those every one of the wrongdoings which are not enrolled because of the feverish methodology. For this, we are carrying out the E-FIR framework with chatbot reconciliation. The fundamental focus on this undertaking is to give all wrongdoing the executives an answer which can be effectively available by everybody. In this project we are utilizing Cloud registering which can hold a great deal of monetary benefits for Government to carry out e-Governance projects. Distributed computing innovation is

advantageous to all clients for example in metropolitan and provincial regions. It meets each body's prerequisite without disregarding security and protection over the Internet, and simultaneously gives convenience to everybody. Distinguishing this a significant issue this undertaking focuses on bringing a framework, which makes the conventional interaction simple. If you're perusing this aide, you're most likely going to carry out a chatbot into your business. You're pondering which chatbot stage is awesome and the way that it can help you. All things considered, this guide gives every one of the brilliant principles to carrying out a chatbot. It calls attention to the most widely recognized chatbot slip-ups and tells the best way to keep away from them. It can assist you with making a compelling chatbot methodology and make the most out of chatbots for your internet based business. There are a few misguided judgments about the term chatbot. Albeit the terms chatbot and bot are some of the time utilized reciprocally, a bot is essentially a computerized program that can be utilized either for authentic or malevolent purposes. The regrettable underlying meaning around the word bot is inferable from a background marked by programmers utilizing computerized projects to penetrate, usurp, and for the most part cause destruction in the advanced biological system.

Bots and chatbots, along these lines, ought not be confounded. Taking everything into account, chatbots don't have a background marked by being utilized for the end goal of hacking. Chatbots are conversational instruments that perform routine undertakings proficiently. Individuals like them since they assist them with getting past those undertakings rapidly so they can concentrate on significant level, vital, and drawing in exercises that require human capacities that can't be reproduced by machines. There are numerous generally accessible apparatuses that permit anybody to make a chatbot. A portion of these instruments are arranged toward business utilizes (like interior activities), and others are situated toward purchasers[3]–[6].

Wrongdoing has been an inauspicious and solid inclination of human culture over the entire course of time. Exercises like murder, thefts and assaults happening as often as possible indicate a hazardous society. These sorts of exercises have been occurring since seemingly forever. The development of guns prompted quick ascent of numerous crimes and firearm viciousness. Seeing this ascent numerous nations began to save many guidelines and regulations for observing and controlling crimes[7]–[10]. In India, the regulations are not known to a great

many people like special cases witness insurance and digital wrongdoing related regulations. The ascent in innovation saw numerous digital wrongdoings like phishing, wholesale fraud tricks and online harassment. It is of prime significance that each resident is familiar with these regulations and be ready. The archives like the 'Indian correctional code' are exceptionally spellbinding and difficult to comprehend. The wrongdoing enrollment framework also isn't successful in many spots like the provincial regions. According to ease-of-use point of view, visit bots are exceptionally simple to utilize and interact with. Offer many highlights empowering them to be utilized in numerous applications. Cattle rustler is constructed involving calculations for characterization of the questions connected with wrongdoings asked by the client and react in like manner. Making a chatbot is like making a versatile application and requires an informing stage or administration for conveyance. Past that, with every one of the instruments that are effectively available for making a chatbot, you don't need to be a specialist or even a designer to construct one. An item administrator or a business client ought to have the option to utilize these sorts of instruments to make a chatbot in as little as 60 minutes. Furthermore, this is the most efficient approach to communicate with police without wasting a lot of time. Crime victims may now seek assistance from a chatbot, which, due to our chatbot, functions as a crime support service. For those who have been victims of crime or are interested in learning more about criminal investigations, the information would be kept in strict confidence. Our system is divided into two sections: the first is for users who want to learn about various sorts of crimes, and the second is for users who want to register a complaint. Taking into account the use of confidential chatbot technology from Google's newest services, as well as a variety of other chatbot services. Since there are such countless individuals, both youthful and old, who are designated by complex lawbreakers, causing them unjustifiable pressure, however who miss the mark on monetary assets or know where to go in these circumstances, it assists people with containing, recuperate, and gain from wrongdoings, assaults by associating them with chatbot and police specialists who give significant exhortation and direction whenever, day or night, since there are such countless individuals, both youthful and old, who are focused on by refined hoodlums, causing them unnecessary pressure, yet who don't have the.

II. LITERATURE REVIEW

Ashwani Sharma et al. [11] discussed a novel online crime reporting system. Authors discussed about the online crime reporting system which is an application that covers the entire case the executive's framework, and this undertaking will aid the organization of all police headquarters activities. It can be utilized to record wrongdoings and deal with all activities in a police headquarters utilizing PCs by monitoring all grumblings, most looked for lawbreakers, police headquarters, and other data. Most of the activities are presently performed physically, but by modernizing all activities inside a police headquarters, the functioning frameworks can be promptly and effectively taken care. Suggested model by the authors is used for undertaking: client and administrator login,

objection enrollment, view grievance status, criminal register the executives, case history subtleties the board, deal with the rundown of most needed lawbreakers, most recent wrongdoing news in the city, and wellbeing tips for people, especially ladies and merchants. This undertaking helps with the computerization of police headquarters records, like grumblings, criminal records, and the organization, client, and Police Station Management System, in addition to other things. The objective of the wrong doing announcing framework is to give the client adjustable and powerful grievance enrollment and interaction the executives programming. The program incorporates highlights like grumbling enrollment, detainee enlistment, and the production of after death reports, among others. Every one of the standards characterized all through the investigation and configuration stages have been fulfilled, bringing about magnificent programming. Authors concluded that the point of interaction is exceptionally easy to understand and versatile consistently. Shraddha Surana et al. [12] explained the uses a proprietary named entity recognition model to extract information from complaints in a chatbot-based crime registration and awareness system. In their study, authors presented a chatbot for wrongdoing mindfulness and wrongdoing enrollment. In this study the bot utilizes a blend of characterization and generative models. Text is produced by utilizing encoder-decoder consideration instrument engineering. It is consolidated with highlights like spam characterization of SMS and emails to re-duce cybercrimes. It has a grumbling enlistment framework that permits clients to document grievances, an exceptionally named substance acknowledgment model is utilized to extract structured data like location, time, and wrongdoing type from unstructured objections, this would permit the authorities to successfully and productively appreciate grumblings. Authors tries to give proficient and easy to understand methods for enlisting grievances utilizing various strategies and illuminating people about the legal framework. Along these lines, we seek to apply Natural Language Processing (NLP) for social great. Authors stated that at present the chatbot is worked to give data just with regards to criminal laws of the Indian subcontinent. Their approach of building an exceptionally named substance acknowledgment model could be additionally applied to numerous different spaces like pamphlets, resume and clinical applications. In future, authors intend to work on the presentation of the NER model to distinguish various substances, incorporate more elements to acquire significantly more profound bits of knowledge from the grumblings enrolled and investigate how the presentation will change. Deepali Jawale et al. [13] explained E-FIR Systems with the help of Chatbot. In this project authors carried out the E-FIR (First Information Report) framework with chatbot reconciliation for the public use. Since number of cases are expanding step by step and taking a gander at the current circumstance of COVID-19, authors carried out the online entrance. Additionally, they intended to overcome any barrier between the police and the ordinary citizens. For most of the part, numerous wrongdoings are seen by the residents however the vast majority of the wrongdoing are not enrolled because of the monotonous and feverish interaction. In their project they carried out the most straightforward way so that

individuals can enroll their consistent effectively, for that authors presented the chatbot for enrolling the grievance. In their application, we can likewise, screen the enrolled grumbling that we have done. For this authors utilized the Cloud Computing which can assist Government with accelerating in carrying out of e-Governance projects and to connect it to a bigger number of individuals in a brief period. Their application involved use over the Internet of registering equipment, programming and organization foundation and the most compelling thing is the applications are facilitated from a distance. By using this, their structure client's information will be kept characterized and in a manner of speaking clients protest will be shipped off the nearest police central command. The principal web application will be stayed aware of by the executive from the police central command. The present study aims to understand crime awareness among people of this one united world and help in boosting the registration in an easy way. Talking about our present scenario, Crimes nowadays are increasing day by day and with different level of intensity and versatility. The people who are facing the crimes do not register or file a complaint, and the criminal gets away with crime. So, it becomes a necessity to register crime with full responsibility. As, Crime registration is the first step to crime removal, we are taking one step ahead for a crime free nation. The crime percentage illuminating methodologies can be applied on proficient chatbot which will be made by our group putting away the information at different stages like reasons of wrongdoing, recurrence of comparative sort of violations at explicit area with different boundaries to get ready model for the wrongdoing enrollment chatbot framework.

Research Questions

How F.I.R Registration Using Chatbot are useful?
How to implement chatbot for F.I.R registration?
How to register complained by using chatbot?

III. METHODOLOGY

A. Design

The objective of this study is to increase the awareness of the level of crime going on in the present world and filtering the crimes which are more likely to happen to an individual as well as save the time of user as the bot will be already trained about the next information to be asked for, provide the information and analysis about the categories of crime increasing. Make complaints easier to coordinate and resolve. Current system is only limited to the information gain through a web portal. While there are some systems that only deals with the user (victim) once the email is provided and then proceed towards further process through email. Mostly the F.I.R is registered through long procedures on web portals and they aren't equipped with trained Chatbot.

B. Instruments

At its most basic level, a Chatbot is a computer program that mimics and cycles human interaction, letting people to collaborate with machines as if they were conversing with a certified person. Chatbots may be as simple as one-line responses to basic questions, or as complex as electronic employees that learn and evolve to provide increasing

levels of personalisation as they receive and manage data. A chatbot, sometimes known as a chatterbot, is a software program that is used to organize an online visit discussion using text or text-to-speech.

C. Data Collection

The aim of the proposed system is to reduce the complexity through the chaos and workload of the current system by innovating the it. Basically the main target is to create two separate portals for police department and user (victim) respectively. The victims will be able file the FIR through the Chatbot app portal, user's information will be kept confidential. This project will be user friendly as well as cop friendly too. The FIR in such cases will be registered quickly so that the police officials can start investigating as early as possible. The victims can file the FIR through the Chatbot. With the help of chatbot, it asks simple questions. Victim will need to answer this entire stack of question like complain details and other basic questions about their personal identity. All of this will be secured because we will be using google's firebase system. So all the data are safe in database and in police module, officials will fetch all necessary details. Also Users won't have to go through the trouble of accessing many different websites to gain information related to crimes because our system will also be consisted of crime related information through chatbot.

D. Data Analysis

In reference from the above activity diagram, the first step of the system will be initialized by the user and the user will begin having conversation with the chatbot in the application, if user attempts to say a sentence that is in stored or predefined in the chatbot then the conversation will not be recognized initialized by the user and the system will stop. In order to proceed to the next step the user needs to input simple statement that will later be recognized by the chatbot. Once the user reaches to the second step, an chat session will be created for each unique user and later the user will be displayed with two major options such as proceed with the crime report part or the crime related information part where the user has to opt for any one of them. Once the conversation is successfully completed by the user the user inputs will be automatically saved into the database so it can be displayed on the police portal as shown in Figure 1.

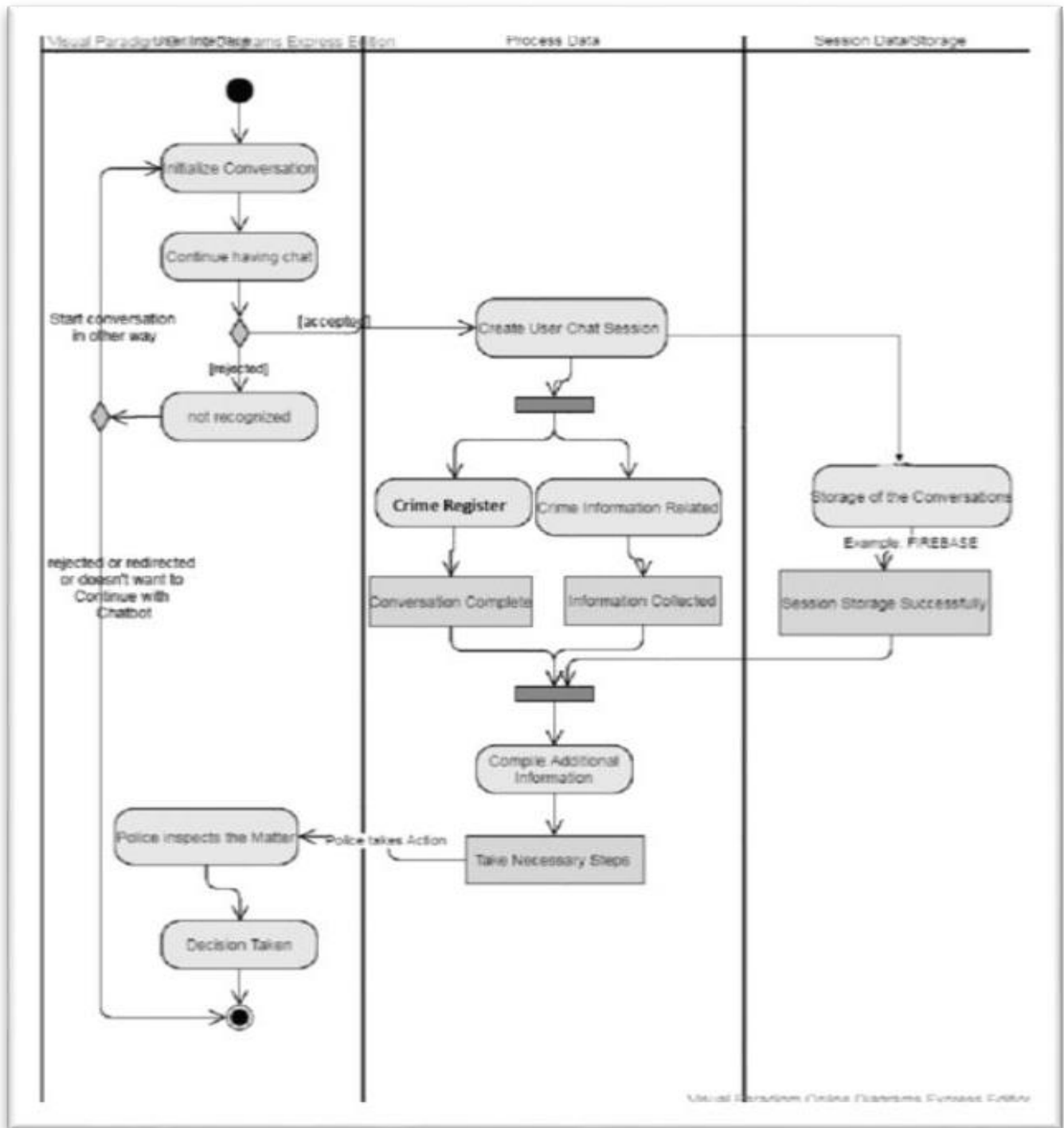


Figure 1: The above flow chart explain the Activity of the proposed system.

IV. RESULTS AND DISCUSSION

There are three main modules in the project, they are:

- User(Victim) Module
- Police Module
- Administration developer Module

Module 1: User (Victim) Module

User(victim) has to open the application after which they will be redirected to the chatbot dashboard. Here user will be able to perform actions like talking with the chatbot. The chatbot has two major features, register a crime as well as crime information. Both will be presented to the user in

an efficient way so user don't get so confused with the options and it becomes easier for them to use and benefit (Figure 2).

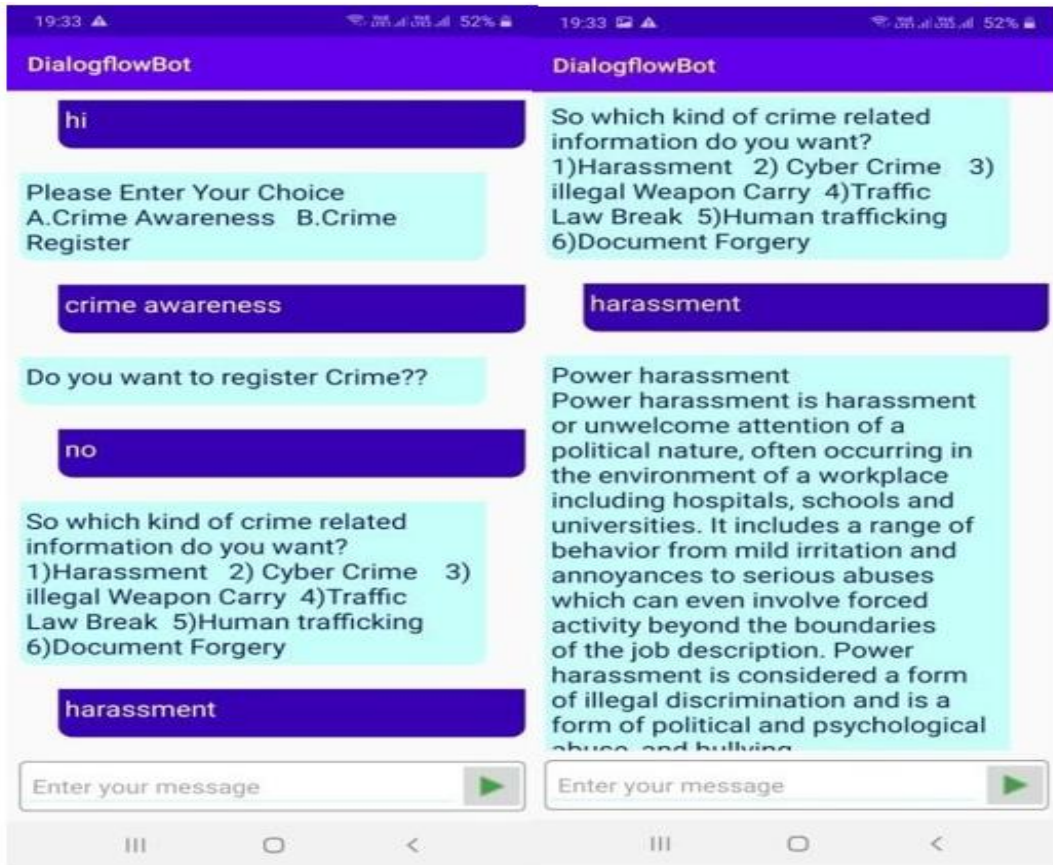


Figure 2: The above Figure Represents the User (Victim)

Module 2: Police Module

Police officials has to register themselves on our portal. And further get logged in to our system. If the username and password is valid then they will enter into a database portal where they'll be able to perform some actions like checking the information extracted from the user through the chatbot questionnaires as shown in Figure 3 and figure 4.

sr	city	crime	email	name	phone	url
1	Surat	cybercrime	heni171@gmail.com	heni	760076687	drive.google.com/drive/folders/1pVK177M8yqghgkz1w7QK3HCUjUdc?usp=sharing
2	Surat	torture	niv@gmail.com	niv	9377854000	https://drive.google.com/drive/folders/1pVK177M8yqghgkz1w7QK3HCUjUdc?usp=sharing
3	Ahmedabad	trafficlawbreak	nandu@gmail.com	nandu	6353846822	https://drive.google.com/drive/folders/1pVK177M8yqghgkz1w7QK3HCUjUdc?usp=sharing

Figure 3: Illustrates the Police Module

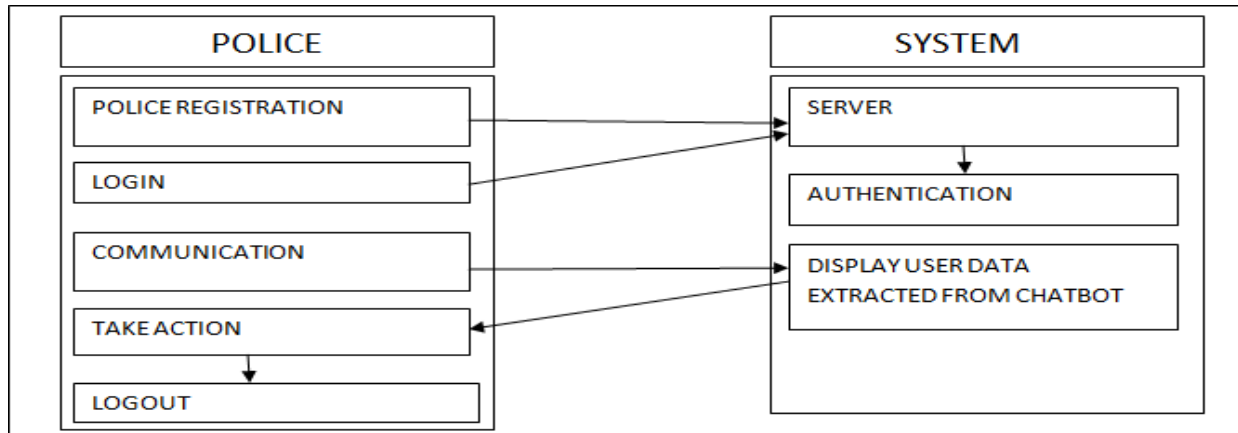


Figure 4: Illustrates the Police interaction with portal Module 3: Admin Developer Module

In this module the Admin can make changes accordingly, such as updating the application, adding some new features, improving the security and also perform few tasks related to

database system. The Developer side of the module consist of the softwares like android studio, google's dialogflow, Google's firebase as shown in Figure 5.

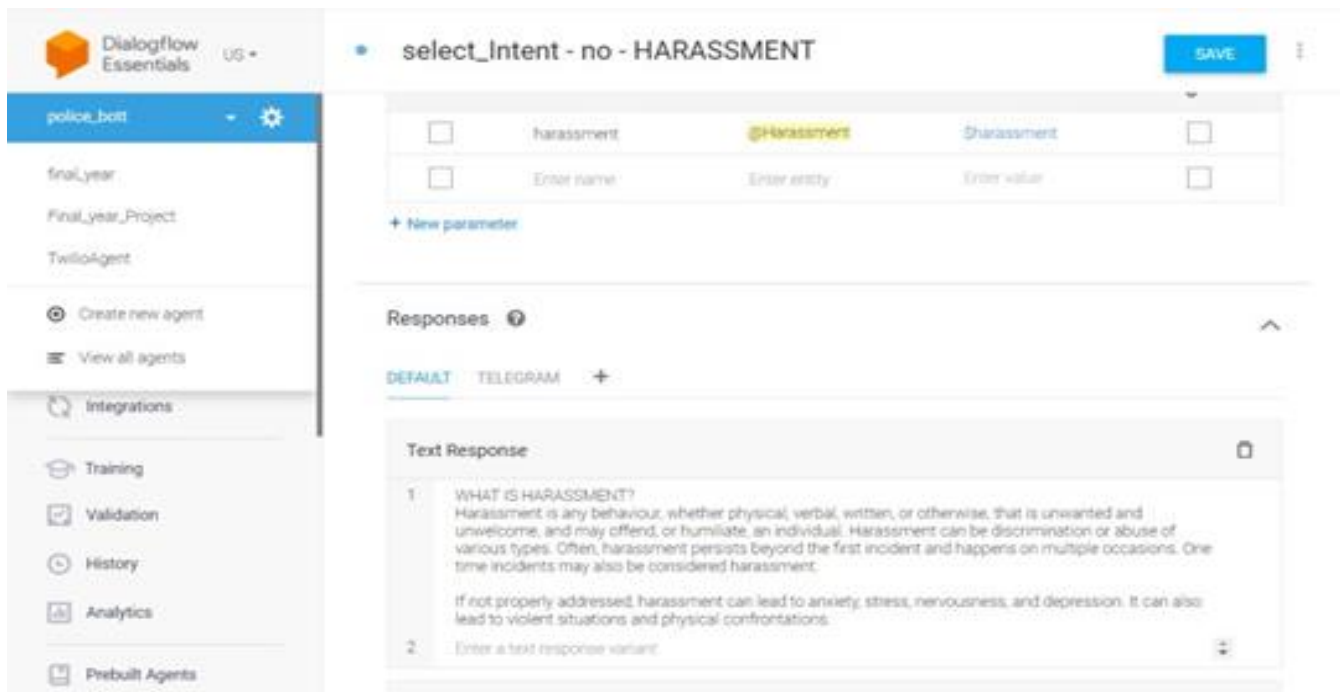


Figure 5: The above Figure Represents the Admin Developer Module.

V. CONCLUSION

Looking at the current scenarios we came across that there is great requirement regarding a software which helps the user to work with the chats and crimes easily. This application increases efficiency by minimizing the amount of data entered by humans. It offers a very simple and user-friendly interface that everyone can use. It also reduces the time spent writing FIR details and other modules by half. Any complaint, post mortem, or other crime may have all of its information reviewed and stored. This Crime Reporting System with Chatbot is a solution to all issues relating to crime reports, autopsies, criminals' information, crimes, punishments, and other issues. We will integrate Google Maps Api with the chatbot in the future to get the victim's live location or the place from where the victim is accessing the application. As a result, the closest police station is immediately notified of the victim's position. More updated version of the app with added feature of guideline, which will guide user about how to register a crime through our application, and also benefit fully from our system. Data encryption techniques to make data fully secured so the application becomes more reliable and the fear of losing data is vanished. Evidence sending process through online with photo scanning if necessary.

REFERENCES

- [1] G. Guntoro, Loneli Costaner, and L. Lisnawita, "Aplikasi Chatbot untuk Layanan Informasi dan Akademik Kampus Berbasis Artificial Intelligence Markup Language (AIML)," Digit. Zo. J. Teknol. Inf. dan Komun., 2020, doi: 10.31849/digitalzone.v11i2.5049.
- [2] N. Muangnak, N. Thasnas, T. Hengsanunkul, and J. Yotapakdee, "The neural network conversation model enables the commonly asked student query agents," Int. J. Adv. Comput. Sci. Appl., 2020, doi: 10.14569/IJACSA.2020.0110421.
- [3] T. Arai, K. Fuji, and F. Yoshida, "The effects of information about crime on mother's anxiety about crime," Shinrigaku Kenkyu, 2010, doi: 10.4992/jjpsy.81.397.
- [4] A. A. Overman, K. D. Wiseman, M. Allison, and J. D. W. Stephens, "Age Differences and Schema Effects in Memory for Crime Information," Exp. Aging Res., 2013, doi: 10.1080/0361073X.2013.761914.
- [5] K. Butorac, "Geography of Crime and Geographic Information Systems," J. Forensic Sci. Crim. Investig., 2017, doi: 10.19080/jfsci.2017.02.555591.
- [6] C. Ugwuishiwu, F. Bakpo, and C. Udanor, "A hybrid model of a collaborative crime information system," Int. J. Eng. Res. Technol., 2019.
- [7] M. D. Illescas-Manzano, N. V. López, N. A. González, and C. C. Rodríguez, "Implementation of chatbot in online commerce, and open innovation," J. Open Innov. Technol. Mark. Complex., 2021, doi: 10.3390/joitmc7020125.
- [8] E. A. J. Croes and M. L. Antheunis, "Can we be friends with

- Mitsuku? A longitudinal study on the process of relationship formation between humans and a social chatbot,” *J. Soc. Pers. Relat.*, 2021, doi: 10.1177/0265407520959463.
- [9] L. Li, K. Y. Lee, E. Emokpae, and S. B. Yang, “What makes you continuously use chatbot services? Evidence from chinese online travel agencies,” *Electron. Mark.*, 2021, doi: 10.1007/s12525-020-00454-z.
- [10] E. Van den Broeck, B. Zarouali, and K. Poels, “Chatbot advertising effectiveness: When does the message get through?,” *Comput. Human Behav.*, 2019, doi: 10.1016/j.chb.2019.04.009.
- [11] “Design of a Novel Online Crime Reporting System,” no. March 2016, 2021.
- [12] S. Surana, J. Chekkala, and P. Bihani, “Chatbot based Crime Registration and Crime Awareness System using a custom Named Entity Recognition Model for Extracting Information from Complaints,” pp. 3329–3336, 2021, [Online]. Available: <https://irjet.com/archives/V8/i4/IRJET-V8I4626.pdf>.
- [13] D. Jawale, P. Bharambe, P. Gangrade, and S. Sor, “E-FIR System with Chatbot,” *Int. J. Adv. Res. Sci. Commun. Technol.*, vol. 4, no. 2, pp. 488–491, 2021, doi: 10.48175/ijarsct-1056.