# Javabot - Chatterbot Using Java to Assist Healthtip, Share market and Sports Updates

**Kanimozhi.J [1], Balla Sri Satya[2], Dharni Pryanka.S[3], Susela .J[4]**

[1] Department of Computer Science and Engineering
Sri Manakula Vinayagar Engineering College
Puducherry, India

[2,3,4] Department of Computer Science and Engineering
Sri Manakula Vinayagar Engineering College
Puducherry, India

**ABSTRACT**

*A chatbot is a computer program that recreates human discussion through voice command or content talks or both. Chatbot, short for chatterbot, is an Artificial Intelligence (AI) highlight that can be inserted and utilized through any real informing or messaging applications. The application additionally gets the clients question it examinations the inquiry with the advances of man-made consciousness which is prepared to it. Chatbot can be created in using many technologies or languages and in this paper JAVA is used to create chatbots named Javabot. In our Javabot we use Dialog flow and firebase advancements that create the outcomes precise and quick. The real preferred standpoint of our chatterbot is the joining of various fields, for example, Sports, Health tips and Share market in a solitary application. Along with these lines, this stage builds the efficiency of a worker without influencing his/her interests.*

Keywords: Chatbot, Javabot, Dialog flow, Firebase, Sports, Share market.

## 1. INTRODUCTION

AI, Computer based intelligence is an investigation of how human brain thinks, learns, choose and work, when it endeavors to take care of issues. Lastly this examination yields insightful programming systems. The point of AI is to improve PC capacities which are identified with human information, for instance, thinking, learning, and problem-solving.

A chatbot (also known as a smartbot, talkbot, chatterbot, Bot, IM bot, interactive agent, conversational interface, Conversational AI, or artificial conversational entity) is a computer program or an artificial intelligence which conducts a conversation via auditory or textual methods. Presently the AI chatbot must comprehend this particular client need to give a relevant answer. A savvy chatbot will understand and get familiar with the language subtleties to give a convincing answer. Later on, there will come a period where the bots will have man-made consciousness which will realize what we need before we even ask it.

AI is relevant to any intellectual task. Modern artificial intelligence techniques are pervasive and are too numerous to list here. Frequently, when a technique reaches mainstream use, it is no longer considered artificial intelligence. The fields included in AI are follows:

- Healthcare
- Automotives
- Finance and Economics
- Video game
- Military
- Audit
- Advertising
- Art

For making chatbots, there are different choices to pick in programming language. The decision will contrast by help given by these stages. The major factor in deciding the programming language will depend on the supported APIs used by the platforms. The programming languages which are for the most part utilized in building up the bots for Messenger, Telegram and Slack incorporate Python, PHP, Java, NodeJS (JavaScript), C#, Objective-C, Swift, and Go.

Java can furnish you with all the abnormal state highlights you requirement for AI projects. In the event that you need to construct an AI chatbot, Java is likely the best language you can utilize on the grounds that it offers a simple method to code calculations, and AI is full of them. It additionally keeps running on the Java Virtual Machine innovation and on the off chance that you use it you can make an application that keeps running on any stage.Java has the most important features for a sophisticated interface, like facilitated visualization and standard Widget toolkit.

The Chatbot application in android is able to interact with the users. This chatbot can answer for queries in the textual as well as in voice form of user input. Android Studio is the official integrated development environment (IDE) for Google's Android operating system, built on JetBrains' IntelliJ IDEA software and designed specifically for Android development. It is available for download on Windows, macOS and Linux based operating systems.

## 2. LITERATURE SURVEY

The headway of conversational administrators for social protection applications has pulled in noteworthy excitement for late years. A conversational administrator can be a convincing assistant, rather than a gadget, by offering information to augmentation customers' desire to interface with the system and recognize the prosperity related suggestions. The diverse chatbots in the fields of following are:

- Health care bots
- Share market bots
- Sports bots

### 2.1 The Top Health Chatbots
The Medical Futurist trusts they will facilitate the weight on specialists in essential consideration and help patients figure out how to deal with their wellbeing mindfully.

### 2.1.1 Safedrugbot
The thought was conceived out of a genuine interest: the engineer of the application was asked by a specialist to rapidly and effectively recover data about medications to which breastfeeding moms might be uncovered. The objective was come to: Safedrugbot is a talk informing administration that offers aide like help to wellbeing experts, specialists who need proper information about the utilization of medications amid breastfeeding. Besides, it gives data about the dynamic fixings present in the prescription and elective drugs.

### 2.1.2 Izzy
The yellow cushy little feathered creature could turn into the unwavering companion of each lady – utilizing Facebook Messenger. The cutie deals with the client's time frame: remembers feminine cycle dates just as ripe windows. She gets some information about enthusiastic rollercoaster's or period torments and figures out how to give data about menstrual wellbeing and sexual issues. It's a helpful partner for the most troublesome days in a lady's life!

### 2.1.3 Babylon Health
The British membership, online medicinal conference and wellbeing administration, Babylon Health, established in 2013, offers A.I. interview dependent on close to home restorative history and normal medicinal learning just as live video counsel with a genuine specialist at whatever point a patient needs it. In the principal case, clients report the indications of their ailment to the application, which checks them against a database of infections utilizing discourse acknowledgment, and afterward offers a suitable game-plan. In the second case, which as of now goes past the standard administration of a chatbot, specialists tune in and look cautiously to analyze the patient and afterward compose medicines or allude to a master whenever required.

### 2.1.4 Florence
The chatbot is essentially an "individual medical caretaker" in the shading blue, and takes a shot at Facebook Messenger, Skype or Kik. "She" can remind patients to take their pills, which may be a convenient element for more seasoned patients. You simply compose the name of the prescription in talk, the times each day you should take it and at what time. At that point, Florence sends you a message in talk each time you should take the pill. Additionally, Florence can follow the client's wellbeing, for instance, body weight, state of mind or period, along these lines helping

## International Journal of Application or Innovation in Engineering & Management (IJAIEM)
### Web Site: www.ijaiem.org Email: editor@ijaiem.org
**Volume 8, Issue 4, April 2019**                                                    **ISSN 2319 - 4847**

them to achieve their objectives. The chatbot additionally has the right stuff to discover the closest drug store or specialist's office on the off chance that you need it.

### 2.1.5    Sensely
The virtual restorative partner named Molly can survey the patient's side effects utilizing discourse, content, pictures, and video. As the client wishes, it can utilize content or discourse to convey. In light of the assembled information just as the data encouraged to its keen calculation, Sensely translates the client's manifestations and suggests an analysis. Molly utilizes the shades of the triage framework, surely understood in crisis care to choose about the earnestness of a case. In Sensely's manifestation triage it implies an appraisal whether self-care is sufficient or the patient should swing to a specialist. Also, it offers a nearby administration revelation and rich assets for self-care.

### 2.2  Share market bots

Leading stock trade BSENSE 0.09 % today declared the dispatch of 'Ask Motabhai', a man-made brainpower (AI)-based 'chatbot', to give on-request information and data from its site. The chatbot has been worked in organization with Microsoft and Shephertz, the BSE said in an announcement .The chatbot that are as of now existing in the realm of share market are examined as pursues:

### 2.2.1    MotaBhai bot:
Uncovering organization information from the BSE site can be a significant bulky procedure however at this point the stock trade has propelled a chatbot to handle a wide range of inquiries identified with stocks, share costs and offer markets. The landing page of the BSE site demonstrates a gadget "Ask Motabhai" on the upper right corner of the screen with the substance of a man wearing customary clothing alongside a safa (headgear). On tapping the BSE chatbot, guests are invited with a message, "Hi! Welcome to BSE India. I am here to support you". It gives you a visit menu of two points on which you can make inquiries—stock data and market data.

   In figure 1, gives you the information about the chatbots of Stocks and alsoMotabhai then recommends important pages from the BSE site which has the information you are looking for. The mechanized talk administration capacities day in and day out and 365 days a year and takes shot at catchphrases like all different chatbots.
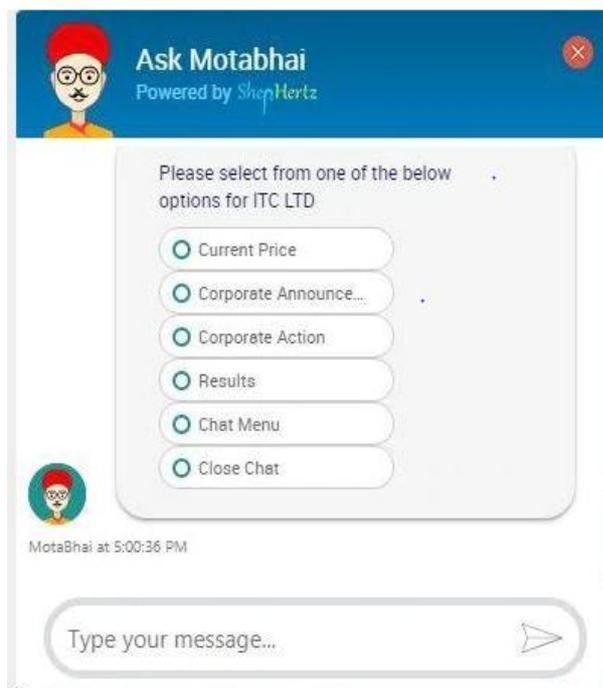


**Figure 1** Motabhai chatbot conversation with user

### 2.3  Exciting Chatbots in Sports
Progressions in conversational UIs and AI in games the executives may not be as quick and significant yet as in some different divisions; however these innovations can possibly reclassify member encounters

# *International Journal of Application or Innovation in Engineering & Management (IJAIEM)*
**Web Site: www.ijaiem.org Email: editor@ijaiem.org**

**Volume 8, Issue 4, April 2019**　　　　　　　　　　　　　　**ISSN 2319 - 4847**

### 2.3.1 NBA

At the point when Facebook exhibited its chatbot stage in April 2016, the NBA likewise immediately introduced its own bot. The time was great. At long last, the association needed to introduce an answer for the NBA Finals. This arrangement appeared in the finals between the Golden State Warriors and the Cleveland Cavaliers. In figure 2, the bot that intimates the NBA-Bot indicates features of exceptional players, moves and different occasions. The clasps are played in Facebook Messenger itself. The bot gives interfaces that direct the client to the official recordings on NBA.com.
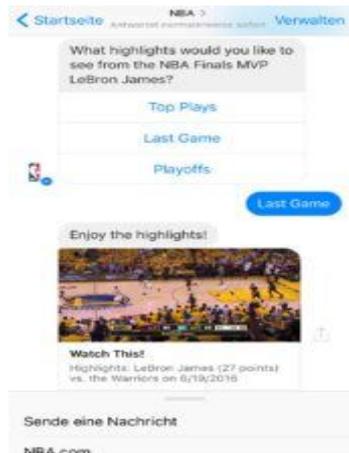


**Figure 2** NBA chatbot with user conversation

### 2.3.2 Golden State Warriors

The Warriors gave their fans another specialized aide in time for the NBA Playoffs 2017. The arrangement: a bot for the Facebook Messenger, in light of man-made brainpower. The two fans in the field and before the TV profit by this. The innovation accomplice of the NBA is Chatfuel. The chatbot collaborates with fans legitimately in the Facebook Messenger. It gives exceptional news, features, player measurements, and help with ticket and stock buys. For fans in the Oracle Arena, the bot can show reports on traffic or stopping.

### 2.3.3 Jung von Matt/Sports and Oliver Kahn

An ongoing Horizont feature was: "The reason Jung von Matt/Sports is making Oliver Kahn the Chatbot King." Tipico is a games wagering organization and they asked Jung von Matt/Sports to make a chatbot for them. Tipico was at that point utilizing Oliver Kahn as a representative. Jung von Matt/Sports made a computerized rendition of Kahn as a chatbot. They presently have their very own an innovative adaptation of the German lottery.

The manner in which wagering works is the accompanying: members wager through Facebook. They need to figure the pullover quantities of the initial six players that will score in the Saturday rounds of the German League that begin at 15:30. The distinction from the typical German lottery is that player numbers can happen more than once. For instance, in the event that you surmise that player 10 will score first, you could win from any player with this number scoring first.

The victor can win €100,000 before the finish of the period. To achieve this objective, clients speak with the chatbot Kahn to get everyday updates and improve their odds. It utilizes GIFs and cleverness to help vivify connections with clients.

### 2.3.4 theScore

In figure 3, theScore turned into the primary games media organization to offer a chatbot in 2016. The Canadian organization has more than three million fans on Facebook, and they center around portable. The bot reacts essentially to explicit content directions. In the event that you actuate "Get refreshes," the bot asks the client which group he needs to get standard updates about. On this premise, the client gets news about his group in the Facebook channel.
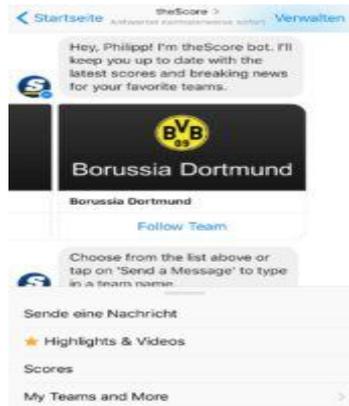
# International Journal of Application or Innovation in Engineering & Management (IJAIEM)
### Web Site: www.ijaiem.org Email: editor@ijaiem.org
**Volume 8, Issue 4, April 2019**          **ISSN 2319 - 4847**

**Figure 3** theScore chatbot conversations with user

All the above mentioned chatbots are created using different technologies and languages. For each specific feature like sports or health etc., a separate chatbots is used and which leads to use of more memory space and the used has to move from one application to another every time. So to avoid this we are creating a chatbots called Javabot which includes these entire three features in one application and implemented using Java.

## 3. JAVABOT – AN INTERGATED APPLICATION

A Chatbot is essentially a product you can visit with. On the off chance that you use it right, your life will be much easier—instead of seeking something on the web, you can just ask chatbots what you need to know. From the literature survey, it is known that java is the best language to work with chatbots and all the three features are combined in a single application called Javabot.

Java can furnish you with all the abnormal state highlights you requirement for AI ventures. On the off chance that you need to assemble an AI chatbot, Java is most likely the best language you can utilize on the grounds that it offers a simple method to code calculations, and AI is loaded with them. It likewise keeps running on the Java Virtual Machine innovation and in the event that you use it you can make an application that keeps running on any stage. Java has the most vital highlights for an advanced interface, as encouraged perception and standard Widget toolbox. The libraries and new technologies used in Javabot are explained below.

Exchange Flow is the structure age is utilized over to procure the representative's close to home interests and sports. Different administrations are utilized to give the present updates in online life and offer market. A Chatbot can be utilized for some reasons, our Chatbot is utilized to assist the representatives with increasing their profitability without influencing their own advantage. Dialogflow (Previously known as API.AI) is the place the enchantment occurs. It takes a shot at normal language handling and sponsored by Machine Learning. Dialogflow the entire discussion happen. Dialogflow is sponsored by Google and keeps running on Google foundation, which implies you can scale to a great many users.Our bot coordinated with the accompanying applications or fields.

Web scratching is a method utilized to extricate a lot of information from sites whereby the information is separated and spared to a neighborhood record in your PC or to a database or to a database in table (spreadsheet) position. It is a type of replicating, in which explicit information is assembled and duplicated from the web, regularly into a focal neighborhood database or spreadsheet, for later recovery or investigation.

The library utilized in our application is Jsoup. Jsoup is a Java library for working with genuine HTML. Jsoup is a Java html parser. It is a Java library that is utilized to parse html records. Jsoup gives programming interface to think and control data from URL or HTML archives. It gives a helpful API to separating and controlling information, utilizing the best of DOM, CSS, and Jquery-like techniques. Chapter 3.1 gives the architecture of the Javabot.

### 3.1 Javabot Architecture

The design of the Javabot gives a simple stream of understanding the highlights incorporated into the application. The fundamental feature of this application is that the representatives could get visit reports on offer markets. For the offer market and sports refreshes we use firebase.

Javabot gives the worker an advantageous and easy to understand refreshes. The application likewise gets the worker's question it examinations the inquiry with the innovations of man-made reasoning which is prepared to it. In our Chabot (Javabot) we use Dialog flow and firebase driving common language preparing abilities, highlights for bot applications that handles venture grade answers for representatives and the sky is the limit from there. Utilizing the above advancements like Web scratching, react highlights this application creates the outcomes exact and quick. Accordingly, this stage expands the profitability of a representative without influencing his/her advantages.

The Architecture and workflow of the Javabot is shown in figure 1. The input for the chatbot could be either mobile or PC. The relevant information has been collected together and stored in knowledge base of DialogFlow. From the user's query the keyword is searched in datasets of knowledge base and the resultant to the given query has been produced and displayed as the output to the user. For other modules like sports and share market the data has been fetched and downloaded in the local files that frequently update the user.
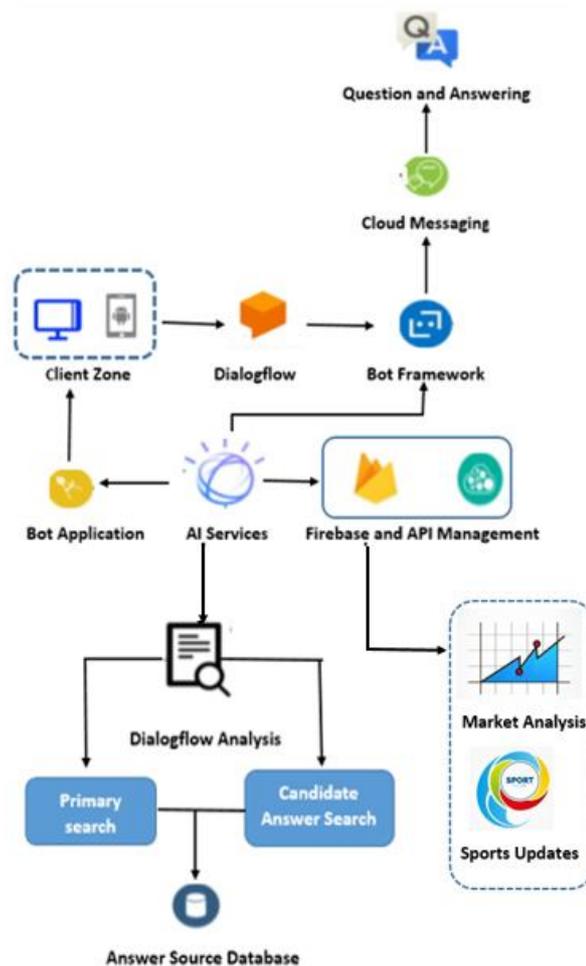


**Figure 4** Architecture and workflow of a Javabot

The Javabot application has the following features:

1. Health tips
2. Sports updates
3. Share market (stocks)

### 3.2 Health Tips

A computerized individual associate or a Chatbot could support doctors, attendants, patients or their families. The essential point of our application is to investigate connections between preventions or treatment systems and patient results. Better association of patient pathways, medicine the executives, help in crisis circumstances or with emergency treatment, offering an answer for easier restorative issues.

These wellbeing tips are imploded utilizing exchange stream. Chatterbot is utilized to process the client questions and react them effectively by controlling the information's in the database. The application additionally gets the worker's inquiry it investigations the question with the advances like Dialogflow and firebase which is clarified previously. In this, Dialogflow and firebase driving normal language preparing capacities, highlights for bot applications that gives the reactions or answers for workers because of client inquiry .

Figure 5, describes the conversation between the user and the machine in webapp as like below image .For example the user says, His/her eyes are burning, the bot responds by saying Stay away from the monitor for 2 minutes and then continue your work. Figure 6 and 7 shows the health tip shown by Javabot.
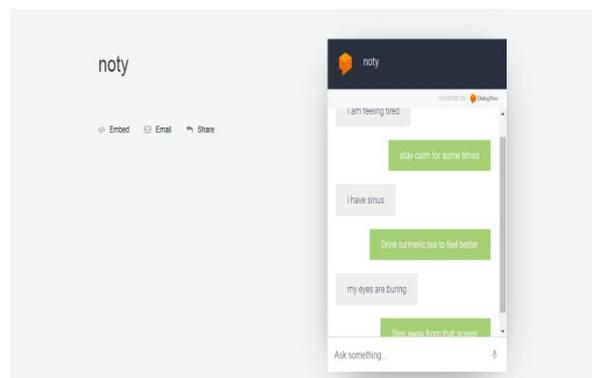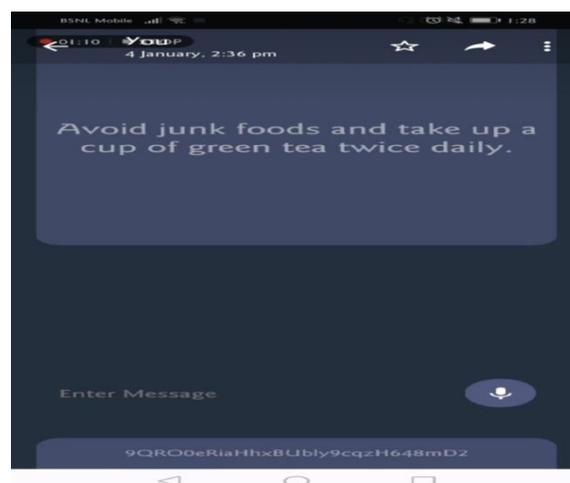


**Figure 5** Chat between Javabot and user in webapp.



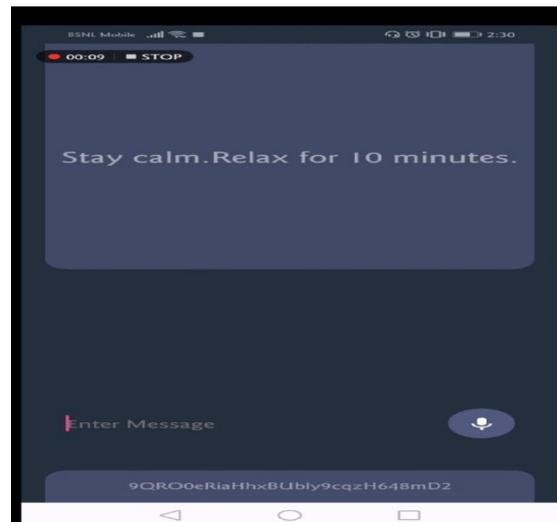**Figure 6.** Health tip for stomach pain by Chatbot mobile app

**Figure 7.** Health tip for Headache

### 3.3 Sports Updates

Our Chatbot gives you complete fulfillment of observing live activities or review live scores while in a hurry as notice, pressed with most recent news and diversion plans. It brings clients the most recent news and data from the universe of games from inside the games field including live scores, breaking stories with brisk updates and assortment of games. We have a component called reaction. Here we check the past update with the recently arrived update. On the off chance that it matches, at that point it keeps up the bygone one as the most recent update. In the event that they are extraordinary, at that point it takes the new update and keeps up it as the most recent update and tells the client. In this manner, this stage expands the profitability of a representative without influencing his/her advantages. A similar rationale for each of the two administrations sports, share-advertise. Web scratching a page includes getting it and removing from it. Getting is the downloading of a page (which a program does when you see the page). Figure 8 and 9 are the shorts update given by the Javabot. It gives us the top updates in cricket. It would notify the user further whenever new updates are found. The top website for this update is opened and the user could get a detailed info about the update.
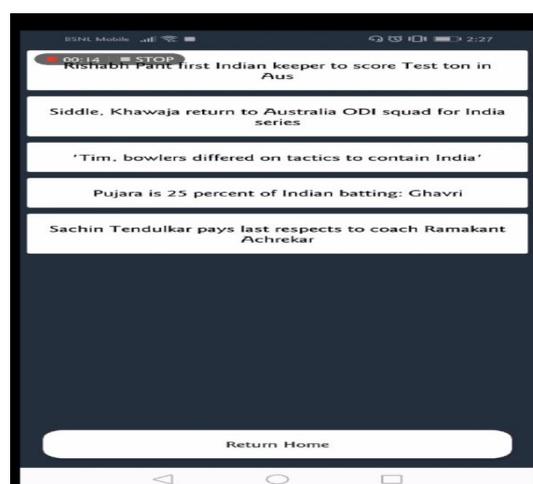


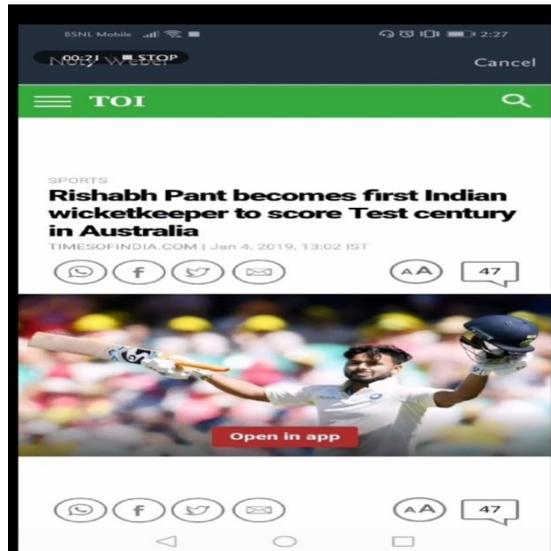**Figure 8.** Chatterbot displaying the latest updates of sports

*International Journal of Application or Innovation in Engineering & Management (IJAIEM)*
**Web Site: www.ijaiem.org Email: editor@ijaiem.org**
**Volume 8, Issue 4, April 2019**                    **ISSN 2319 - 4847**

**Figure 9.**Displaying the sports updates

### 3.4 Sharemarket Updates

A stock market, equity market or share market is the accumulation of purchasers and venders (a free system of monetary exchanges, not a physical office or discrete substance) of stocks (additionally called offers), which speak to possession guarantees on organizations; these may incorporate securities recorded on an open stock trade, just as stock that is just exchanged secretly. Instances of the last incorporate offers of privately owned businesses which are sold to financial specialists through value crowd funding stages. Stock trades list offers of regular value just as other security types, for example corporate securities and convertible securities.

Our application gives you complete fulfillment of watching drifting securities exchange refreshes while in a hurry as warning, stuffed with most recent news. Beginning the application will arrive you on Live and continuous sensex and clever focuses refreshes and looking down you will locate the top gainers, top failures, top movers of the day. It will enable you to follow financial exchange and will likewise enable you to exchange stocks from the application itself. In this offer market module the method are incorporated as like the games.

In figure 10(a)(b) elaborate, the top notification of the particular site is shown in below , the main highlight of the Javabot is that ,the user could also get frequent updates on share market without interrupting their work.



*(a)*

*(b)*

**Figure *10(a)(b)*.** Share-market tending newsfeeds by Javabot

## 4. RESULT ANALYSIS

Chatbot (Javabot) is actualized to meet the worker needs and regularly personal the representative about his/her advantages, wellbeing, the happenings in the corporate world and furthermore should probably answer the questions all the more productively. An easy to understand chatbot is one that will give pertinent and less perplexing responses to the mentioned question. It is executed to cooperate with a worker in an increasingly present day and smooth way, essentially to maintain a strategic distance from mistakes that are caused when individual is taking care of the solicitation. A depiction of the proposed Javabot is appeared in the above Figures from 5 to 10 individually.

### 4.1 Points of Interest of Javabot

The advantages of our application are according to the accompanying:

**a) Decreased Cost**

The application is in fact a cost proficient as it gives the majority of its administrations in a solitary bot application.

**b) Administration Throughout Day**

The application is made easy to understand and it could be access whenever from anyplace.

**c) Integrative Environment**

The application is a stage that is a coordinated effort of different administrations from different fields that is intergrated and given to the client in a solitary Chatbot.

**d) Memory Usage**

As there is a joining of various components in a singular application, the memory used for this application is unimportant when diverged from various applications.

## 5. CONCLUSION

Chatbots are fundamentally a move up to a UI, as they bring the most essential sort of human communication into the computerized condition. A less difficult, quicker and increasingly natural UI results in a general better client experience, which is one of the key variables for instructive development. Observing the connection between your User Experience and Chatbots is possible through keen subjective investigation. The critical favoured point of view of our Javabot is the coordination of different fields, for instance, Sharemarket, Health tips and sports in a singular application. In this way, an easy to use experience is accommodated the worker's in the organization to guarantee profitability without influencing their interests. Our future work is to integrate more feature with the Javabot.

## References

[1]  Babar, Z., Lapouchnian, A., & Yu, E. (n.d.). Chatbot Design - Reasoning about design options using i * and process   architecture Analyzing Social Implications of Process Architecture Reconfigurations.

[2]  Wang, H., Zhang, Q., Ip, M., & Fai Lau, J. T. (2018). Social Media-based Conversational Agents for Health Management and Interventions. Computer, 51(8), 26–33. http://doi.org/10.1109/MC.2018.3191249

[3]  Benotti, L., Martínez, M. C., & Schapachnik, F. (2018). A Tool for Introducing Computer Science with Automatic Formative Assessment. IEEE Transactions on Learning Technologies, 11(2), 179–192. http://doi.org/10.1109/TLT.2017.2682084

[4]  Liu, B., Xu, Z., Sun, C., Wang, B., Wang, X., Wong, D. F., & Zhang, M. (2018). Content-Oriented User Modeling for Personalized Response Ranking in Chatbots. IEEE/ACM Transactions on Audio Speech and Language Processing, 26(1), 122–133. http://doi.org/10.1109/TASLP.2017.2763243

[5]  Pérez-Soler, S., Guerra, E., & De Lara, J. (2018). Collaborative Modeling and Group Decision Making Using Chatbots in Social Networks. IEEE Software, 35(6), 48–54. http://doi.org/10.1109/MS.2018.290101511

[6]  Satu, M. S., Parvez, M. H., & Shamim-Al-Mamun. (2016). Review of integrated applications with AIML based chatbot. 1st International Conference on Computer and Information Engineering, ICCIE 2015, 10, 87–90. http://doi.org/10.1109

[7]  Hussain, S., & Athula, G. (2018). Extending a conventional chatbot knowledge base to external knowledge source and introducing user based sessions for diabetes education. Proceedings - 32nd IEEE International Conference on Advanced Information Networking and Applications Workshops, WAINA 2018, 2018–January, 698–703. http://doi.org/10.1109/WAINA.2018.00170

[8]  Ranoliya, B. R., Raghuwanshi, N., & Singh, S. (2017). Chatbot for university related FAQs. 2017 International Conference on Advances in Computing, Communications and Informatics, ICACCI 2017, 2017–January, 1525–1530. http://doi.org/10.1109/ICACCI.2017.8126057

[9]  Rahman, A. M., Al Mamun, A., & Islam, A. (2018). Programming challenges of chatbot: Current and future prospective. 5th IEEE Region 10 Humanitarian Technology Conference 2017, R10-HTC 2017, 2018–January, 75–78. http://doi.org/10.1109/R10-HTC.2017.8288910

[10]Wei, H., Zhao, Y., & Ke, J. (2017). Building Chatbot with Emotions. Standford University, Http://Web.Stanford.Edu/Class/Cs224s/Reports/Honghao_Wei.Pdf.                    Retrieved                    from http://web.stanford.edu/class/cs224s/reports/Honghao_Wei.pdf

[11]  Gunning, D. (2017). Explainable Artificial Intelligence (XAI): Program Update Novmeber 2017. Defense Advanced      Research      Projects      Agency      (DARPA),      1–18.      Retrieved      from https://www.darpa.mil/attachments/XAIProgramUpdate.pdf

[12]  Anwar, A., & Hassan, S. I. (2017). Applying Artificial Intelligence Techniques to Prevent Cyber Assaults. International Journal of Computational Intelligence Research ISSN, 13(5), 973–1873. Retrieved from http://www.ripublication.com

[13]  Liu, J., Kong, X., Xia, F., Bai, X., Wang, L., Qing, Q., & Lee, I. (2018). Artificial intelligence in the 21st century. IEEE Access, 6, 34403–34421. http://doi.org/10.1109/ACCESS.2018.2819688

[14]  Bani, S. B., & Singh, A. P. (2017). College Enquiry Chatbot Using A.L.I.C.E. International Journal of New Technology      and      Research      (IJNTR),      3(1),      64–65.      Retrieved      from https://www.ijntr.org/download_data/IJNTR03010029.pdf

[15]  Sharma, V., Goyal, M., & Malik, D. (2017). An Intelligent Behaviour Shown by Chatbot System. International Journal of New Technology and Research, (4), 52–54. Retrieved from https://www.ijntr.org/download_data/IJNTR03040071.pdf

[16] Singh, M. S., & Choudhary, P. (2017). Stroke prediction using artificial intelligence. 2017 8th Industrial Automation and Electromechanical Engineering Conference, IEMECON 2017, 7(3), 158–161. http://doi.org/10.1109/IEMECON.2017.8079581