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**Colloquium Report**

**on**

**BOTS**

**COMMUNICATION**

**By**

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**CERTIFICATE**

It is certified that **JAGDISH SINGH** (1513313040) has carried out the colloquium work presented in this report entitled “**BOTS**” for the award of Bachelor of Technology from Dr. A. P. J. Abdul Kalam Technical University, Lucknow Uttar Pradesh under our supervision. The colloquium embodies results of original work, and studies as are carried out by the student himself and the contents of the colloquium do not form the basis for the award of any other degree to the candidate or to anybody else from this or any other University/Institution.

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BOTS

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1. **ABSTRACT:**

In today’s modern world time is money and for saving time we all need something that make our work automated. In this report we have discussed about Bots, which are automated programs and which could be more effective than humans in specific tasks. They could run on different platforms and their main field of usage is social networks and communication software. The main idea of creating bots is to automate some processes and reduce cost of human resources.

Bots can automate many kind of daily work like sending mails, receiving information, arrange business meetings, organize meetings or appointments, get informed about various things which are needed sudden and many more. This is why the use of Bots will going to much demandable in future.

1. **INTRODUCTION :**

In today's modern world everyone is focusing on saving time. The postcards have been replaced by e-mails, cart vehicles replaced by cars or bikes, books were going to replace by eBooks. The trend has been changed , the way we communicate, the way we order things and services all this has been done to make the task fasten and save time because time has become equivalent to money. In the future generations we don’t even have time to do most of the daily task as the time is becoming costlier day-by-day. Future generations have needed something that can help in their work/task in an efficient manner so that they can save their time and extra efforts. The solution for this was come in existence in around 1950. With the recent global boom in mobile messaging apps, such as WeChat, Facebook Messenger and Slack, they’re seen as increasingly relevant [1]. The first Bots on Twitter starting rolling out in 2006. In 2015 bots launched in the first social platform and up to the end of year 2016 they will become compatible on almost all the platforms. This rapid growth shows that in the upcoming 18 months the companies will continue to develop bots and users learn to adopt and use bots, after 2 to 5 years from now majority of daily mobile task becomes bot assisted.

A **bot** is a software application that runs automated tasks (scripts) that are both simple and structurally repetitive, at a much higher rate than would be possible for a human alone[2]. The word bot has been taken from robot [3] as they both can do the same kind of work i.e. repetitive tasks but, they are different somehow as the robot has its physical significance or identity whether a bot doesn’t have, bots are the programs instead. In today’s modern world you don’t need so many apps installed in your phone e.g. Uber because in that much revolving world you can just send an Uber message like “pick me up” and it’ll pick you up from your location, that integration has already been done through Bots and there are so many integrations to be done. Now, why bot is such a big deal, we can also design apps for this work so why we are focusing on bots, what is so much special about them? The answer is quite simple i.e. advantages of bots over apps in this particular type of work. Let’s take a look at some of the important advantages:-

1. **App Fatigue:**

* Mobile apps are difficult to build, distribute and maintain.
* App marketplaces are incredibly crowded
* Making app to the reach of user is a difficult task
* Engaging users with apps is not so easy
* Versions in app cause problems towards users.

1. **Conversation as an interface:**

Bots are designed to provide user an interface that makes him feel that he is talking to human instead of machine because humans has tendency to interact with other humans.

1. **The raise of artificial intelligence:**

With the raise of Artificial Intelligence Bots have also been evolved, they become more efficient in understanding the patterns and solving them efficiently.

1. **TYPES OF BOTS** [4]**:**

There are 4 types of bots:

1. **Stateless Bots:**

These are the easiest bots to build. These type of bots do not keep track of any memory of any conversation they had with the user, instead they treat every message as it is coming from a brand new user. As these bots do not maintain the state of conversation so they are referred as Stateless Bots.

These types of bots are used in the communication where no relational information is required e.g. an automated customer service in which user can select one option out of the many and there is no other sub-lists has been present.

Example: User receives an automated call which plays songs and asks to press a button of user’s choice to add the song as dialer tone.

1. **Semi-Stateful Bots:**

These bots possess a limited ability to keep track of conversation. They persists information about the user like: name, phone number, address etc. These bots are more useful than the stateless bots but, their usefulness is still limited because what they maintain is quite shallow. They limit their state to one conversation i.e. until the goal of the conversation has been achieved.

These types of bots are used in the conversation where there is sub-category in categories offered to the user.

Example: User calls the restaurant and asked by the automated voice / text to choose the type of service after user’s answer (let user told drink), the bot will take the user to the next sub-section that is of drinks in which the bot can offer the user to select the drink from the options.

1. **Stateful Bots:**

These bots keeps track of entire history of conversation they had with the user. They can recall what the user has asked before and adjust their responses based on that. They can also warn/remind the user for something they has asked, earlier they said, is not good for them e.g. if a user has told the bot that he has a risk factor of diabetes and later on some day he asked the bot to order an ice-cream then the bot will remind the user to check his sugar level.

These types of bots can be used as a personal or business assistant where they can help the user for daily task, helps to remember, organize things.

1. **Loyal Bots:**

These bots differ from loyal bots in their level of dedicated services. Stateful Bots trigger the review of conversation on an incoming message whereas Loyal Bots has their own schedule for it, they do not require an incoming message to trigger the review. This will help in serve better because the recorded conversation threads are only the raw materials, they contain a lot of useful pointers into underlying patterns. These pointers may reveal the deeper intentions the user may not have time to disclose.

These types of bots can be very good in understanding user’s behavior and feelings. They can be best suited as personal assistants where they can talk user according to his mood. They can also help the user to change their mood or share his/her personal feelings.

1. **CLASSIFICATION OF BOTS:**

Bots can be classified in the following three categories[5]:

1. **Task Bots:**

**Core competency:** Front-end automation.

**Best for:** Repetitive, rules-based tasks that rely on structured data.

At the core of automation are Task Bots. These hard-working bots automate rules-based, repetitive tasks, in areas like HR administration, procure-to-pay, quote-to-cash, IT services, and much more, leading to immediate improvements in productivity, cost-savings, and error reduction.

1. **Meta Bots:**

**Core competency:** Facilitating scalability with next-generation integration.

**Best for:** Complex, scalable processes.

Meta Bots are the automation building blocks that help you scale. They’re what we call “app resilient,” meaning that any time an application updates or changes, you make minimal edits to the bot itself, and those changes then automatically apply to any process utilizing that bot. Low maintenance and easy to use, Meta Bots help increase RPA adoption, reduce downtime, and ensure control over complex, enterprise-wide automation.

1. **IQ Bots:**

**Core competency:** Continuously learning and enhancing process automation.

**Best for:** Managing through fuzzy rules and processing unstructured data.

IQ Bots are the brains in our RPA platform. Merging unique cognitive capabilities with RPA, IQ Bots can understand structured or unstructured data with ease, act based on the information and learn in real-time, making it possible to fully automate processes and run them independently.

1. **APPLICATIONS OF BOTS:**

There is a very large application area of bots like they can help uses in accessing real time information, shopping, games, searching things, ordering things, booking rides etc. but, there main application areas are:

* **Content Distribution:**

Bots has a wide range of application in content distribution. They can distribute the contents very easily and in an efficient manner. They can share the content to the desired people at any time and in a time saving manner.

* **Customer Services:**

Bots can widely be used in providing the customer services like they can assist the customer, provide valuable information to them, serve them offers, ask for feedbacks and many more. Even the bots can handle any number of customers at a time.

* **Business Processes:**

Bots are very useful in business processes as they can keep track of what is going on in the market, they can help in making business decision by calculating the profit/loss aspects of particular business. They can also organize appointments and remind them at the correct time.

* **Recommendations:**

Bots can also be helpful in making recommendation. They can provide recommendations, helps to choose one best option out of many under many test conditions simultaneously, that would not be possible for human in many cases thus Bots provide a valuable suggestion or the best suited option for such conditions.

* **Transactions:**

Bots can also make any type of transactions for the user.

1. **LITERATURE REVIEW**
2. Bots are driven by many mobile platforms like Facebook messenger, Telegram, Twitter, KIK, Slack, Skype etc.
3. WhatsApp, the world’s #1 messenger with 1 billion users has declared [6] already in Jan 2016 to introduce a business/brand communication channel sooner than later. This is also going to done through bots.
4. Kinetic Consulting Services, the leading management consulting company for business transformation, has released its latest findings on Robotic Process Automation (RPA)[7]. The 20 page report outlines the business case for the introduction of RPA into an organization. Cost savings of approximately 90% can be achieved when a business process performed by a full-time equivalent human is replaced by a software robot.
5. Mark Zuckerberg , CEO of Facebook has made a post[8] on Jan 4,2016 in which he take a personal challenge for the year 2016 to make a simple AI that runs his home and helps him in his work.
6. Matthew Smith writes in “Cognizanti” [9] Digital Business 2020: Getting there from here! “Bots at the Gate Intelligent Automation: Where We Stand — and Where We’re Going”.

According to him by seeing intelligent automation through a ‘do, think, learn’ and ultimately ‘adapt’ framework, businesses can begin benefiting from this powerful set of technologies now.

1. **SIMULATION DETAILS**

* **WORKING**[10]**:**

Bots will receive input from the user process it through the communication platform and provide user the output for this.

**Fig 1: Working of Bots**

The conversational platform is made up of three phases:

**Fig 2: Phases of Conversational Platform**

In Semantic Analysis the input is broken into sentences, words and phrases and relation between them is identified. This relation is then processed by Context Analysis and the list of work to be done has been send to the Answer engine which will supervised all the work in an efficient manner.

* **COMPONENTS:**

There are three major components of bots:-

1. Artificial Intelligence Interface
2. Development Platform
3. User Experience And Integration With Messaging Platforms

The Artificial Intelligence Interface helps the user in conversation by giving them a feel that they are talking to a human instead of a machine. Whereas the Development Platform provides businesses a tool to rapidly build, test and deploy Bots. Since the bots are designed to help users so it is mandatory to provide them a better experience and availability which is done by the third part i.e. User Experience and Integration with Messaging Platforms.

1. **RESULT DISCUSSION**

From the so far discussion it has been cleared that bots has plays a very significant role in the automation and digitization of the world. The future world is the world of bots. In future Bots can be all around us doing various activities like sending and receiving mails, playing multiplayer games with users, organizing the day routine and maintaining the appointments, making payments, sending or receiving money, provide training of vehicle driving, engaging customers, providing goodies and much more than one can even think about that’s how they has a very huge significance in the modern world or we can just say that the **bots are the backbone of rapid growth in the modern world**.In the rapid growing world we all have one precious thing i.e. time which we do not want to waste and there has been one best option to make most of the work automated with the help of bots this is what we expect from bots or they had served us.

1. **CONCLUSION**

Bots are automated programs which could be more effective than humans in specific tasks. Bots could run on different platforms and their main field of usage is social networks and communication software. The main idea of creating bots is to automate some processes and reduce cost of human resources. Since in the modern world time is everything and we are focusing on making the processes automated and the one efficient and best suited option for this kind of work is the use of Bots. Bots are the best option as one can use them without switching the platform he is on i.e. the integrity with messaging platforms. Also they are very compatible for the users to use and easily adoptable, user do not need to learn how to use them because they use AI to understand humans desire and the user can communicate to them just like he can with his friends. The conclusion of this report is that Bots can help in our daily work in a very efficient manner and saves our time which is money in today’s generation.

1. **FUTURE SCOPE**

There is a wide future scope for bots. They can play a vital role in many fields, there is no lime for their scope or we can just say that their scope is LIMITLESS. The main fields of their scopes are:

* **E-Commerce:**

E-commerce is by far the best bot use case, ranging from ordering foods, flowers, shoes, fashion, accessories, flights, hotels, and all other services.

Bots can play a very wide role in E-commerce as they can keep track of market conditions, provide accurate information at time e.g. they can provide user a notification when there is something new that the user unaware about. They can also provide information related to finance, shares etc.

Example is **“KLM”** bot available on Facebook messenger which can provide user the freedom to book flight tickets, helps in check-ins, boarding passes, and also provide notifications to the user related to his/her flight.

* **Software:**

Bots can be used as software for many purposes like photo-editing, organizing content, cleaning memory and much more.

Example of photo-editing bot is the **“ICON8”** bot on Facebook messenger. This bot can offer a large range of filters for the images. There are many other bots are available like Painter Bot, Skeddy, listMe, Herman etc.

* **Entertainment:**

Bots can be also be able to entertain the user by making jokes, playing a random audio or video song for that particular situation, collect all the series of the user’s favorite albums at the time of release and make them avail at user’s demand and much more.

Examples are MTV News, Record Bird, Spin The Bottle, The Tonight Show, eBaum’s World etc.

* **Community:**

Bots can also able to provide information related to a particular community in which user has interest. Their notifications, policies, upgradation, introduction with a new user and much more that a community can offer.

* **Internet of Things:**

Bots can be used in the field of Internet of Things to make many tasks easy for a user. E.g. now-a-days user has to keep looking at the tea he/she is making until it is ready but these type of tasks can be automates by the use of Internet of Things as the bot can use Internet of things for the knowledge of climate conditions of that particular place and according to that the Bot will notify the user when the tea is ready thus helps a lot.

* **Education:**

Bots can also be helpful in the field of Education for learning new languages, history lessons, quizzes related to study and much more.

## Examples of Educational bots are [History Facts](https://botlist.co/bots/2139-black-history-facts), [Foreign Budd](https://botlist.co/bots/2134-foreign-buddy)y, theSkimm, [This Day in History](https://botlist.co/bots/2036-this-day-in-history), Engineering Buddy etc.

* **Games:**

Bots can also be used in future for playing single-player, multi-player games, live games, adventures games, fun and learning games etc. at any time, at any device.

## Examples of Gaming bots are Quiz from Panda, [RuneScape Quests](https://botlist.co/bots/2153-runescape-quests), Spin the Bottle, Flappy Bird, Blackjack etc.

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