

AI-Recruiter - Shortlist a Suitable Candidate for Specific Job Role

by: AISHWARYA V
ANANTHA PRIYA K
JEYDHEEPAN J

TABLE OF CONTENTS

CHAPTER NO.	TOPIC	PAGE NO.
1.	INTRODUCTION	3
	1.1 Overview	3
	1.2 Purpose	4
2.	LITERATURE SURVEY	5
	2.1 Existing Problem	6
	2.2 Proposed Solution	6
3.	THEORITICAL ANALYSIS	7
	3.1 Block diagram	8
	3.2 Hardware/Software designing	9
4.	EXPERIMENTAL INVESTIGATION	10
5.	FLOWCHART	14
6.	RESULT	15
7.	ADVANTAGES AND DISADVANTAGES	18
8.	APPLICATIONS	19
9.	CONCLUSION	19
10.	FUTURE SCOPE	19
11.	BIBLIOGRAPHY	20
	APPENDIX	21

1. INTRODUCTION

Recruiters have leveraged technology to make their jobs easier, faster, and better. Today, the dominant theme in HR technology is AI for recruiting. AI for recruiting is an emerging category of HR technology designed to reduce — or even remove — time-consuming activities like manually screening resumes. Screening resumes efficiently and time-effectively still remains the biggest challenge in talent acquisition. 52% of talent acquisition leaders say that the most difficult part of their job is to shortlist the right candidate and 3% of candidates never hear back from a company after one touch point. On the flip side, it's a challenge for employers to communicate well with all their candidates. For high volume recruiting, this would require communicating with thousands of candidates, in addition to a recruiter's normal screening functions and other duties. Artificial Intelligence enabled software bots can definitely provide a solution for this problem.

1.1 Overview

To help in better understanding of this new field of artificial intelligence for recruiting, we created this definitive guide for HR professionals on how AI can automate your workflow to more effectively engage, screen, and assess candidates. AI for recruiting is the application of artificial intelligence, such as the learning or problem-solving that a computer can do, to the recruitment function. This new technology is designed to streamline or automate some part of the recruiting workflow, especially repetitive, high-volume tasks. In our project we train our bot in such a way by asking questions to the opponent and by selecting the appropriate answers, the final score is calculated and tells whether the candidate is selected or rejected.

1.2 Puropse

❖ **The quality of hiring increases**

HR staff needs to select the right people from a big pool of applicants. The whole process can be divided into several stages, automatically. Recruiters can collect more data on each candidate and so evaluate candidates more effectively. There are many AI-based solutions that help assess the skills and experience of candidates using special algorithms.

❖ **Better integration of analytics**

HR managers get an opportunity to select candidates based on their skills and find a right position where abilities of a certain candidate are most needed. This new approach not only increases the productivity of business but also motivates candidates to improve their skills. In addition, AI software demonstrates a higher level of accuracy compared to human recruiters.

❖ **Automation saves time**

Time is valuable for every company, and the recruiting industry is no exception. Artificial Intelligence provides many solutions for estimating the candidates skills. AI-based software only needs a few seconds to analyze big amounts of data and provide understandable results that can be considered by decision makers. Saving time, AI solutions also save money and resources.

❖ **Unbiased decisions**

Human intervention always implies a certain share of unconscious or conscious bias. Biased decisions are a common problem for all sorts of organizations, and AI solutions are able to minimize this element. Companies get a great opportunity to hire only the best candidates based on their real potential and personality.

2. LITERATURE SURVEY

AI technology however has touched people in their day to day activity in many ways. Beginning from usage of smartphones keyboards to voice-enabled assistants in tabs and laptops and even the persons immediate personal technology supporting devices – technology and its innovation has reached each end of the world among the people when compared to how it was or how it would be or how it is perceived. Even exploitation of AI can occur for the welfare of individuals of country who involve themselves in sectors like financial services, health & safety services, education and governance. However, AI is almost implemented in every sector of the economy. “Implementing AI software simply eliminates mundane tasks and time-consuming data analysis to serve as an ongoing problem-solver for HR. In the words of Dr. A.P.J. Abdul Kalam (2010), “The turning point in the process of growing up is when you the core strength within you that survives all hurt”. The ultimate goal of recruitment process is to find the right aspirant at the right point of time by human resource manager, which may extend the activity by utilizing more number or source. For filling up the specified vacancies we would work from various mediums to find and place the finest candidates. From the two major factors of recruitment say internal factor or external factor depends upon the effectiveness of every organization using different methods and process while recruiting. The recruitment process is successful when it stimulates and selects strong aspirants those prepare to perform successfully on the job. Development and delivery of customized information, data and sources while recruitment activity makes its more effective. Job seekers would have a clear picture about on what they are looking while searching a prospective job. As well the recruiters will also have an idea on who will be their prospective candidates. Facebook recruiting campaign and the reason behind choosing FB recruiting is because it allowed them to convey company policies, procedures and cultures as such to potential hires.

2.1 Existing Problem

Even there are studies conducted stating that new technology and big data makes HRM more efficient and accurate, there are people who consider that human resource analytics can be only a transient trend if the technology transformation does not manage to become a continuing part of management decision-making. One remarkable entirety of challenges that AI-based recruitment entails is personal privacy and the way how data is handled and analyzed. It concerns both HR professionals and online HRM users when it comes to analyzing data or sharing own information. It is almost impossible for organizations to operate successfully without any level of adaptation of new technologies. The ability to adapt new technology in organizations determines largely how they are able achieve their market competitiveness. Previous studies have shown that the adaptation of new technology entails several benefits when it comes to improved performance. An important entirety of challenges that AI-based recruitment entails is unconscious discrimination during hiring processes by organizations. Several problems that exploitation of AI can cause, such as losing jobs to automation and in some cases AI systems can be used when there are undesirable ends. What especially touches recruitment, is the possibility of losing jobs to automation, since there are already many job positions that have been replaced by AI programs which in turn can increase unemployment. Even though AI-based systems are extremely beneficial at recognizing talent, there are still some activities that should be conducted by humans, namely activities such as negotiations, appraisal of cultural fit.

2.2 Proposed Solution

By using Software Bot enabled with Artificial Intelligence, the mistakes can be eliminated by training the bot in such a way, which screens the candidate application, shortlists for interview and identify his skills & personality traits through conversation, Whether a person is selected or not.

3. THEORITICAL ANALYSIS

AI Recruiter is to shortlist suitable candidate for a specific job role. The Software enabled bot screens the candidates and identify whether he/she is suitable for the job role. By analyzing the final score of the candidate in the test. This can be done by using IBM Watson Assistant.

IBM Watson Assistant:

IBM Watson Assistant is used to build our own branded live chatbot into any device, application, or channel. Chatbot, which is also known as an *assistant*, connects to the customer engagement resources we already use to deliver an engaging, unified problem-solving experience to customers.

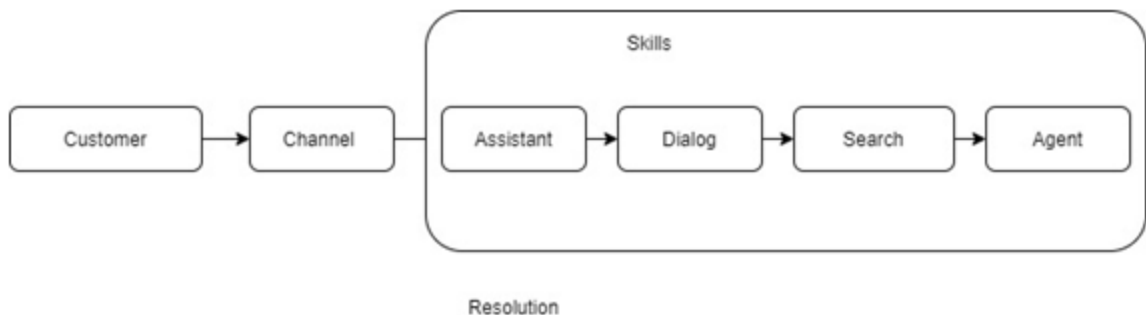


Figure 3.1 Working of IBM Watson Assistant

- ❖ **Assistants:** Receives user input and routes it to the dialog skill.
- ❖ **Dialog Skill:** The **dialog skill** interprets the user input further, then directs the flow of the conversation. The dialog gathers any information it needs to respond or perform a transaction on the user's behalf.
- ❖ **Search:** Any questions that cannot be answered by the dialog skill are sent to the **search skill**, which finds relevant answers.
- ❖ **Intent:** An *intent* is the user's intention. For example, if a user types "show me yesterday's financial news", the user's intent is to retrieve a list of financial headlines. Intents are given a name, often a verb and a noun, such as "showNews".
- ❖ **Entities:** Entities are knowledge repositories used by the bot to provide personalized and accurate responses. Entities can be seen as nouns, often they are referred to as slots. These are usually things like date, time, cities, names, brands etc. Capturing these entities are crucial for taking action based on the user's intent.

Applications of AI recruiter

- Automated Candidate Sourcing.
- Candidate rediscovery.
- Candidate Matching .
- Hiring Remote Workers.
- Customized Employee Value Propositions.
- Facial Expression analysis.

3.1 Block diagram

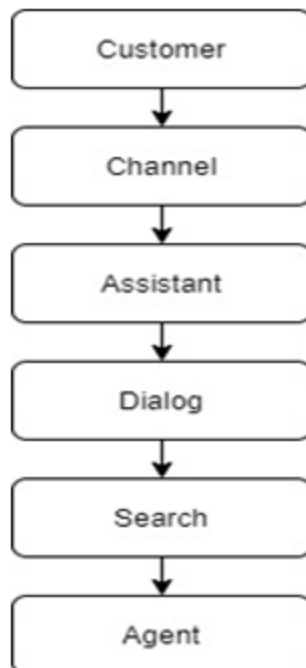


Figure 3.1.1 Block diagram of AI Recruiter

3.2 Hardware/Software requirements

Hardware requirements:

- GPU : 2.4GHZ.
- Hard disk : 150 GB
- RAM : 2 GB (minimum)

Software requirements:

- IBM Cloud
- Watson Assistant

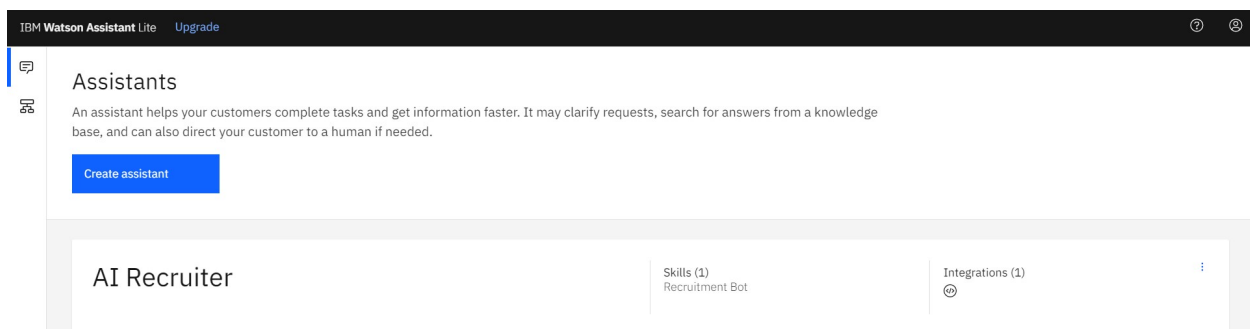
4. EXPERIMENTAL INVESTIGATION

Step1: Open Watson Assistant

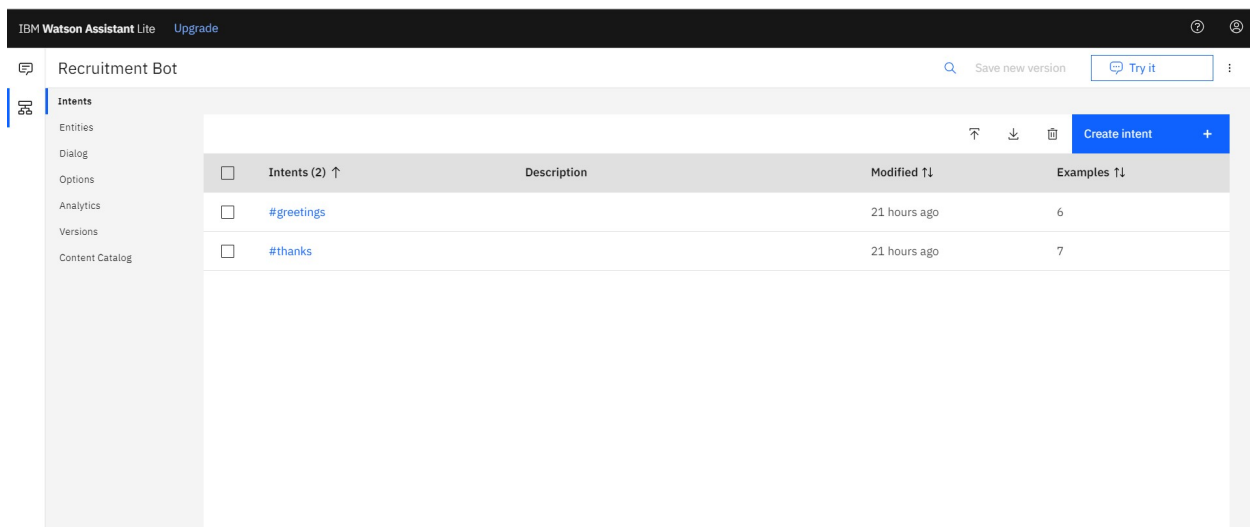
Click Launch Watson Assistant.

A new browser tab or window opens and the Assistants page of Watson Assistant is displayed.

- An assistant named AI Recruiter is created. An assistant is a cognitive bot to which skills are added that enable it to interact with your customers in useful ways.
- A dialog skill named Recruitment Bot is added to the assistant. A dialog skill is a container for the artifacts that define the flow of a conversation that the assistant can have with customers.



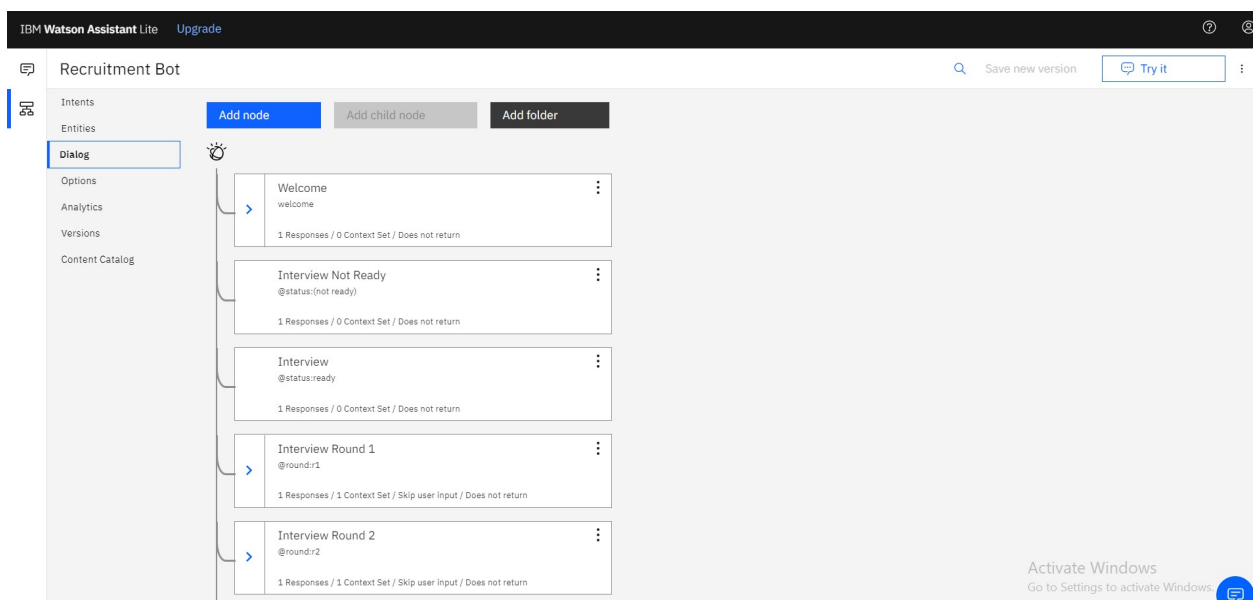
Step2: Add intents from the content dialog



Intents tab to review the intents and associated example utterances that were added to the training data. Add the intents and corresponding response texts. You can recognize them because each intent name begins with the prefix # add the #greetings and #thanks intents to the dialog in the next step.

Step 3: Build a dialog

A dialog defines the flow of your conversation in the form of a logic tree. It matches intents (what users say) to responses (what the bot says back). Each node of the tree has a condition that triggers it, based on user input.



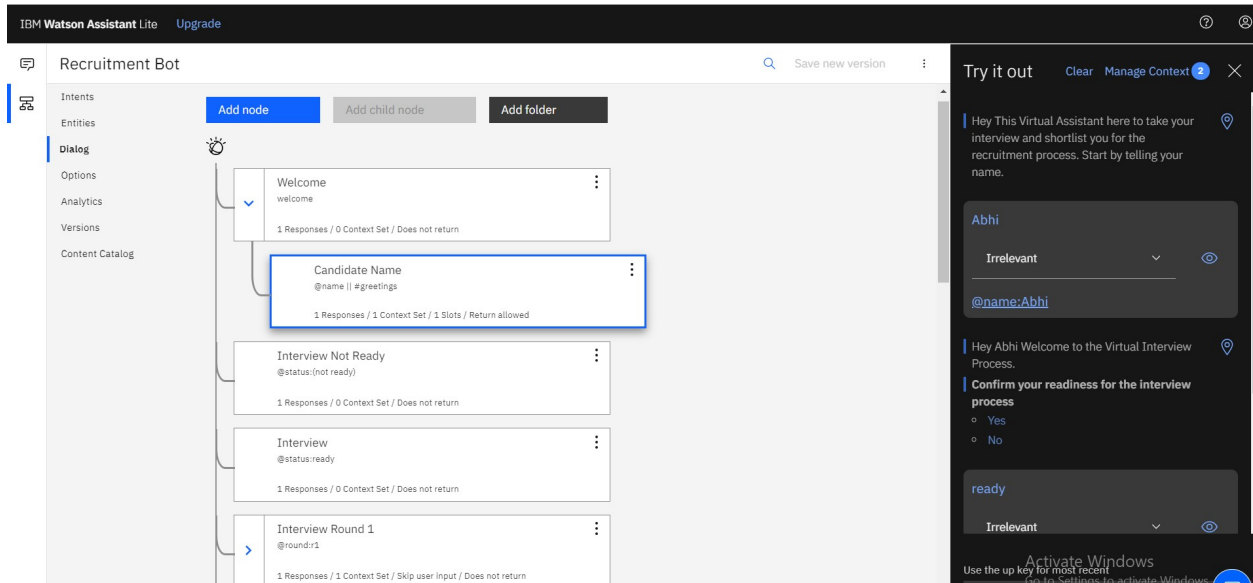
We can click each and every node and change the content in the node. After editing close the window.

Step 4: Testing the nodes

We can test the nodes by clicking on the try it pane in the top right corner.

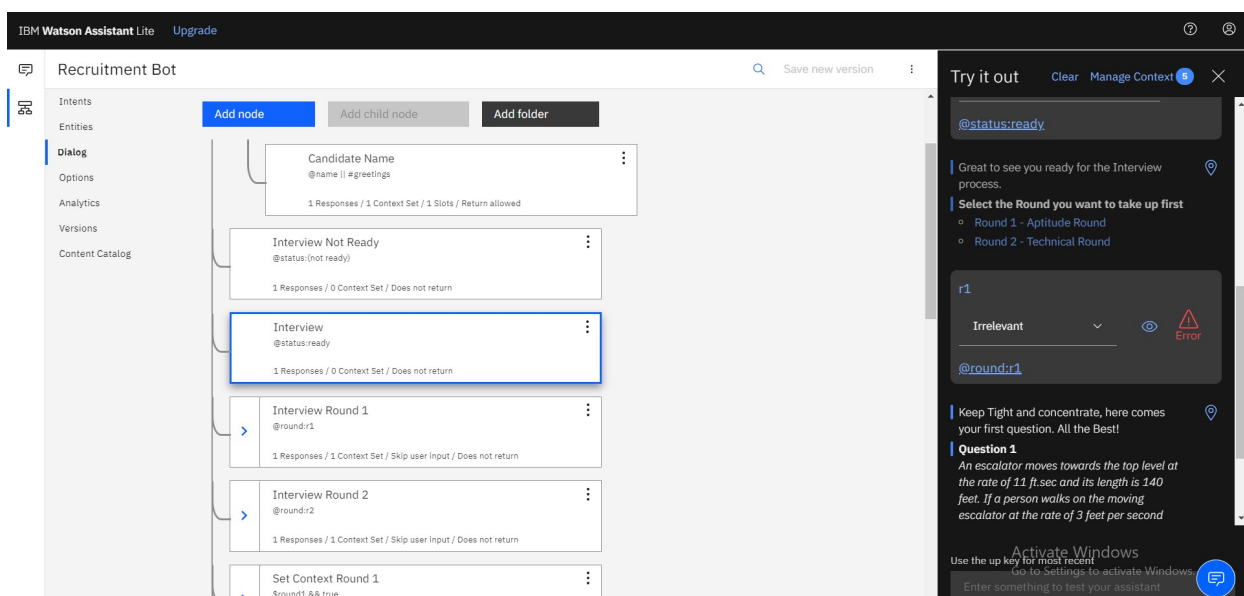


The sample is as follows:



Step 5: Testing intent recognition

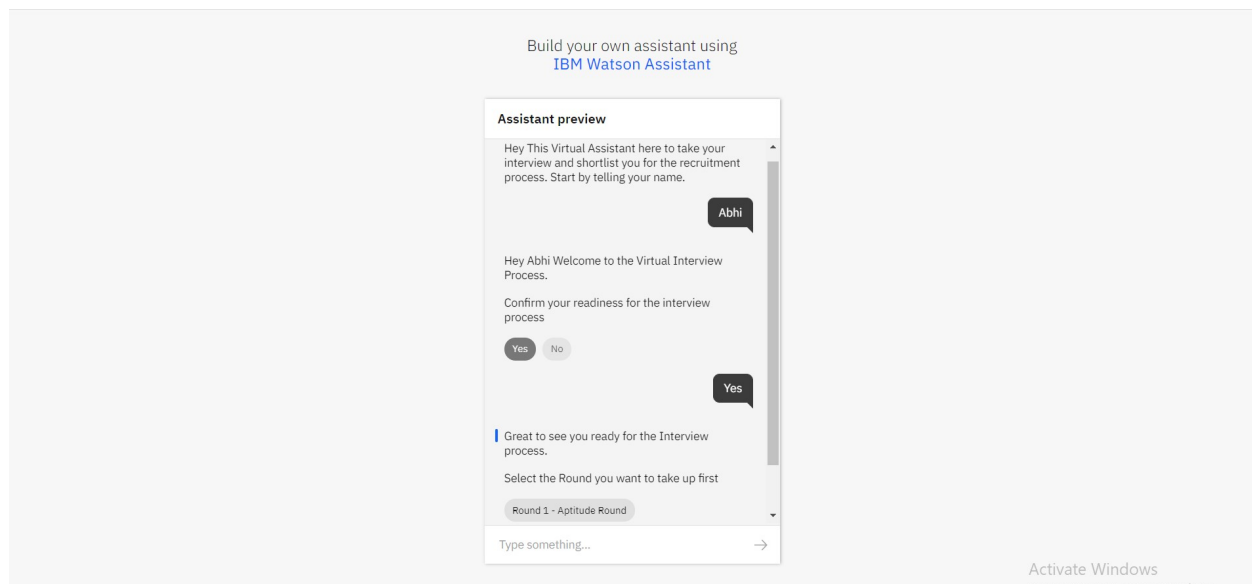
In the textfield, type the name and then press Enter. The output indicates that the #greetings intent was recognized and the appropriate response text Hey \$name Welcome to the Virtual Interview Process.



Step 6: Integrate the assistant

- Click the assistants icon, there the list of assistants created will be displayed.
- Open AI Recruiter.
- Test the assistant with the preview link integration.
- If a AI Recruiter assistant was created, then we must add a preview link integration. From the Integrations area, click Add integration, and then click Preview Link. Click Create.
- Click the url that is displayed in the page.

The sample Output will be as follows:



5. FLOW CHART

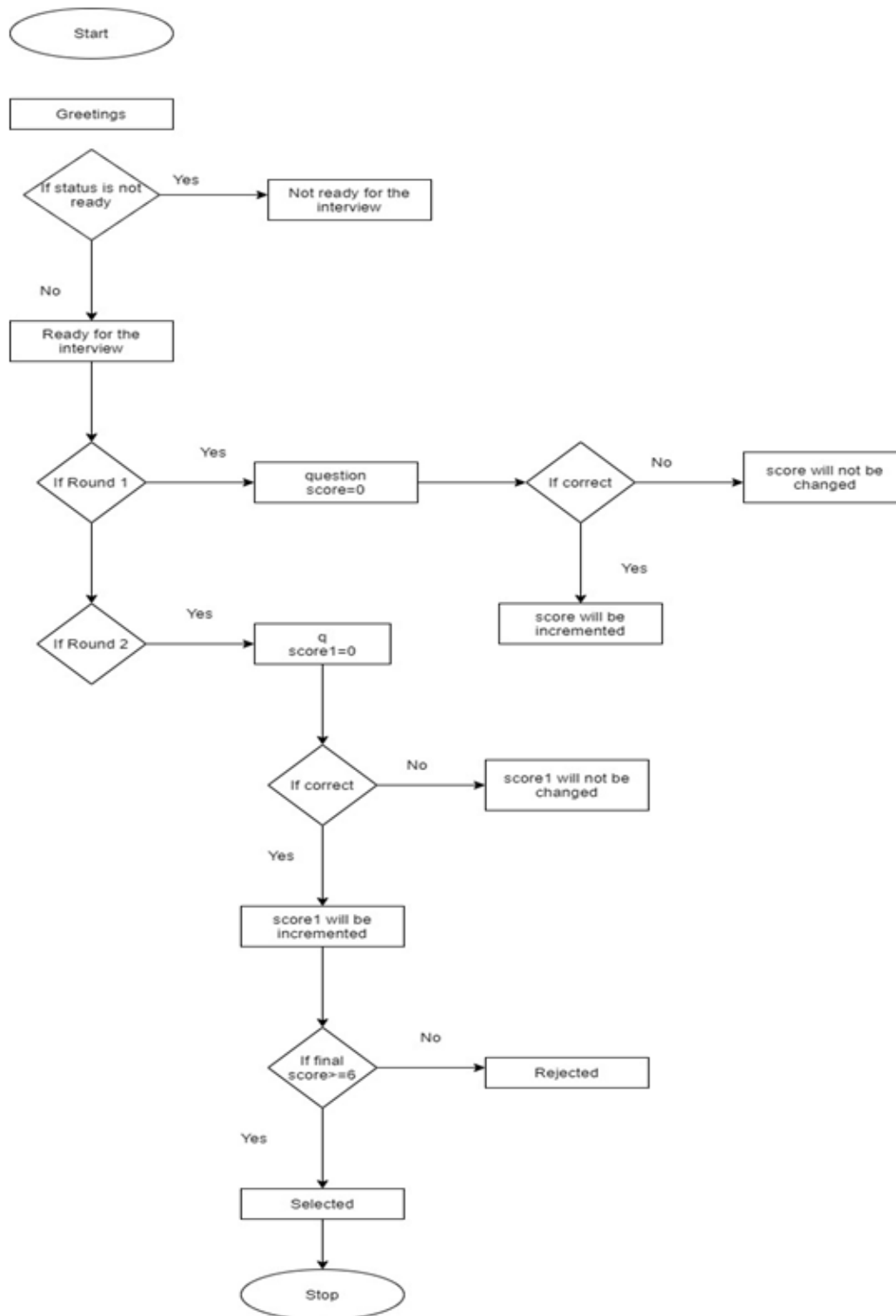
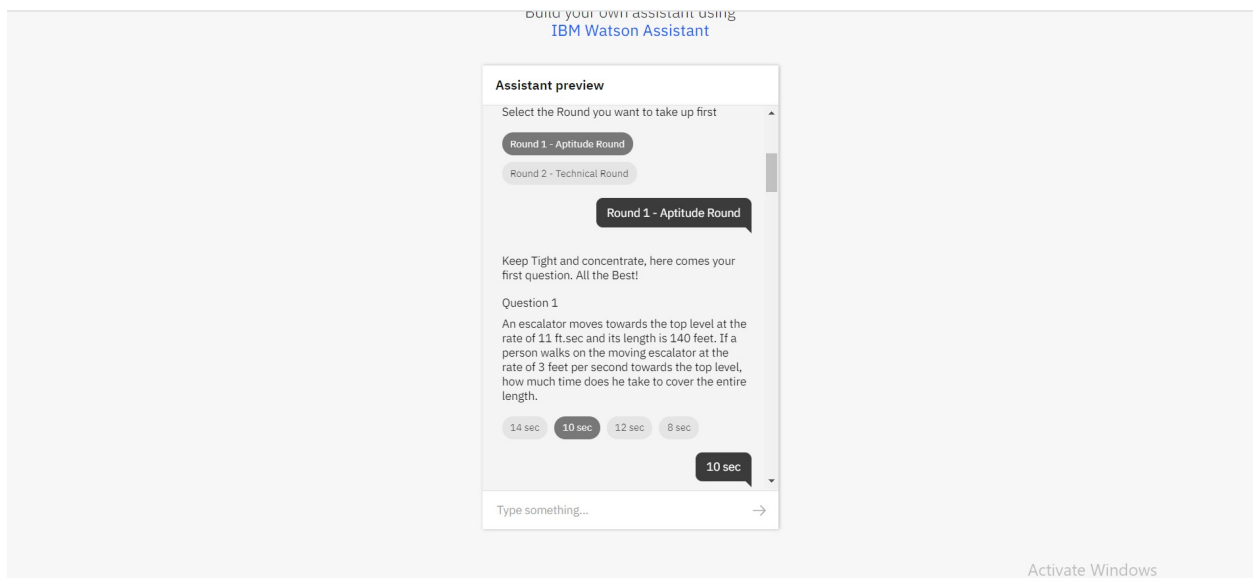
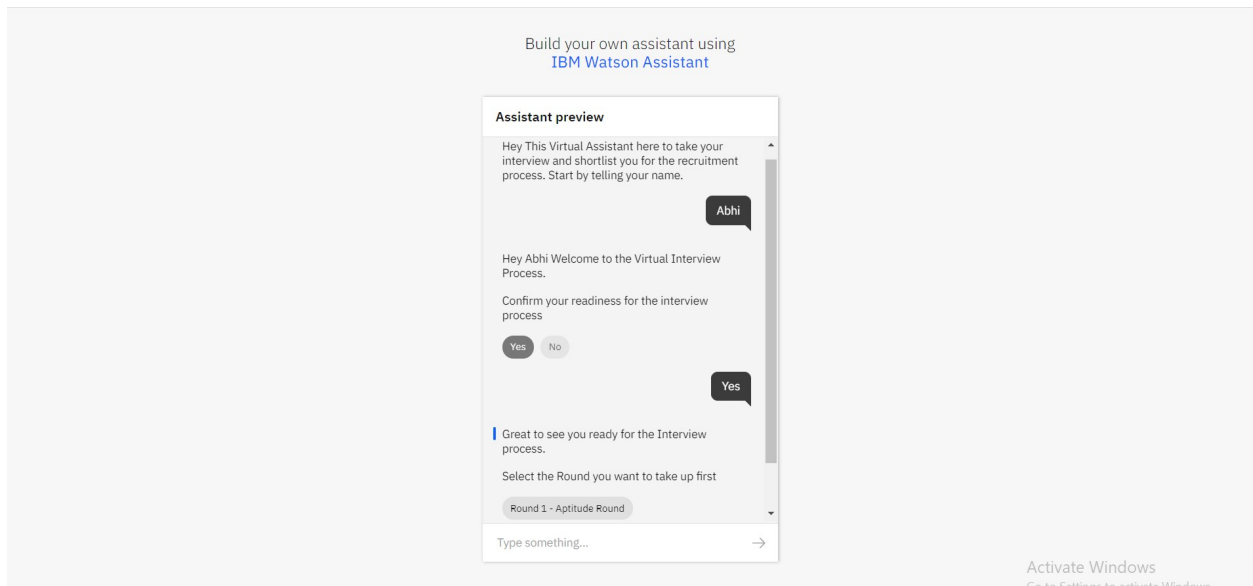


Figure 5.1 Flowchart of AI Recruiter

6. RESULT



Build your own assistant using
[IBM Watson Assistant](#)

Assistant preview

10 sec

Hey you got the right answer. Your score is 1.
Here comes a next one.

Question 2

Two persons start running simultaneously around a circular track of length 400 m from the same point at speeds of 15 kmph and 25 kmph. When will they meet for the first time any where on the track if they are moving in the opposite direction ?

36 secs

30 secs

47 secs

10 secs

36 secs

Hey you got the right answer. Your score is 2.
Here comes a next one.

Question 3

A man invested an amount of Rs. 9000 in a fund

Type something... →

Activate Windows
[Go to Settings to activate Windows](#)

Build your own assistant using
[IBM Watson Assistant](#)

Assistant preview

Round 2 - Technical Test

Round 2 - Technical Test

Keep Tight and concentrate, here comes your first question. All the Best!

Question 1

Linker generates ____ file.

Executable Code

Object Code

Assembly Code

None of these

Executable Code

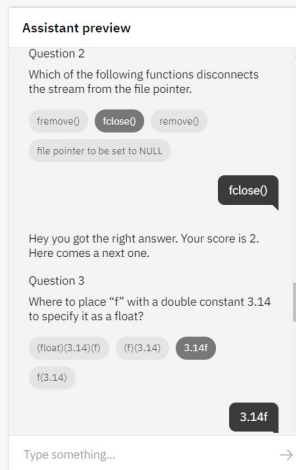
Hey you got the right answer. Your score is 1.
Here comes a next one.

Question 2

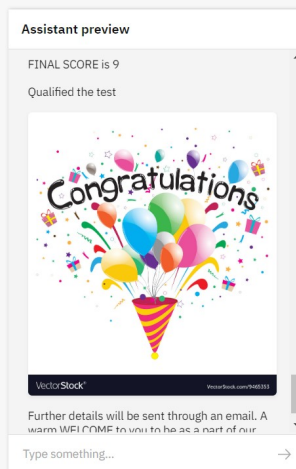
Which of the following functions disconnects

Type something... →

Activate Windows
[Go to Settings to activate Windows](#)



Activate Windows



Activate Windows

7. ADVANTAGES AND DISADVANTAGES

Advantages

- Reduce human biasness:

Humans tend to be biased in some ways. Some recruiters may make hiring decisions based on gender, ethnicity, age, looks and so on. An AI on the other hand, can be programmed to focus only on important factors such as candidates personality, skills, experience and qualifications.

- Saves time, money and increase in efficiency:

One of the main challenges for HR recruiters is to identify the best talent out of the many applications they receive each day. Also can help to eliminate these manual tasks as they are programmed to obtain maximum efficiency in terms of time, costs and quality. Once the process of selecting candidates are fully automated, more data can then be gathered and efficiently assessed.

- Improve candidate experience and engagement:

HR recruiters are often inundated with tasks that take up most of their time, hence many face difficulties in maintaining good response time with their candidates, resulting in poor candidate experience and engagement. By introducing chatbots and virtual assistants, candidates will experience better interaction and response time, keeping them engaged and posted throughout the whole recruitment process.

Disadvantages

- Issues with accuracy and reliability:

Although AI has come a long way, it is still far from being considered perfect. One of the major faults of applicant tracking system is that it lacks accuracy and reliability as it can be confused by formatting options.

- Too much dependency on certain keywords:

AI depends very much on certain keywords to scan through their pile of candidates. This can become a loophole for candidates who are familiar with how the system in AI is programmed, where they may include certain keywords that have the potential to trick the system and camouflage them as good fits for various positions, even though they are not.

8. APPLICATIONS

◆ Intelligent screening software:

Intelligent screening software automates resume screening by using AI on the existing resume database. The software learns which candidates moved on to become successful and unsuccessful employees based on their performance, tenure and turnover rates. Specifically, it learns what existing employees experience, skills and other qualities are and applies the knowledge to new applicants in order to automatically rank, grade and shortlist the strongest candidates.

◆ Recruiter chatbots:

Recruiter chatbots are currently being tested to provide real-time interaction to candidates by asking questions based on the job requirements and providing feedback, updates and next-step suggestions. AI-powered chatbots have a lot of potential to improve the candidate experience.

◆ Digitized interviews:

Online interview software has been available for a while, but today's technology claims to use AI to assess candidates word choices, speech patterns, and facial expressions to assess his/her fit for the role and possibly even the organization and its culture.

9. CONCLUSION

Recruitment software streamlines the process of hiring new talent through automated communication, candidate evaluation and on boarding management. A comprehensive recruitment system can add the benefits of saved time, money and labor to the way a business manages position openings. By adopting a system with the right recruitment software features your company can improve all stages of the recruitment process. Using AI in hiring is not without its challenges, but when done responsibly it can have a positive impact on your recruitment process. AI recruiting software, and recruitment automation tools in general, can save time and offer benefits to companies, hiring managers, and job-seekers alike with reliable recruiting solutions to simplify talent acquisition.

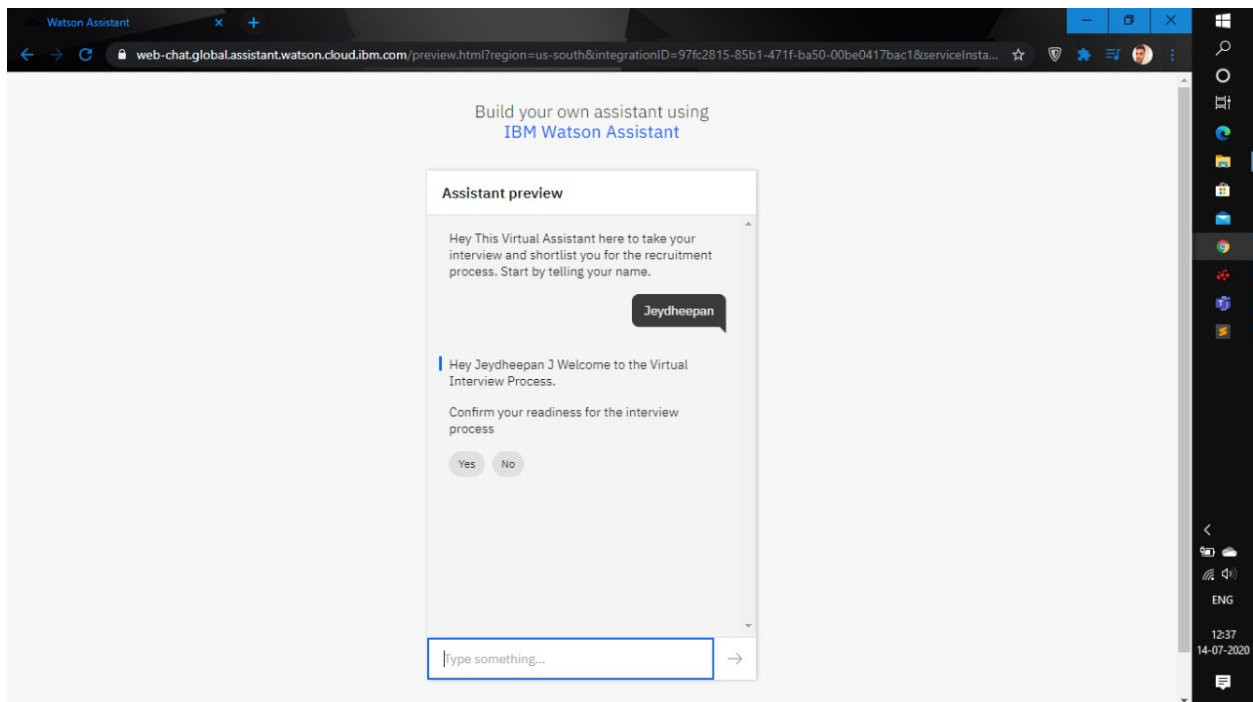
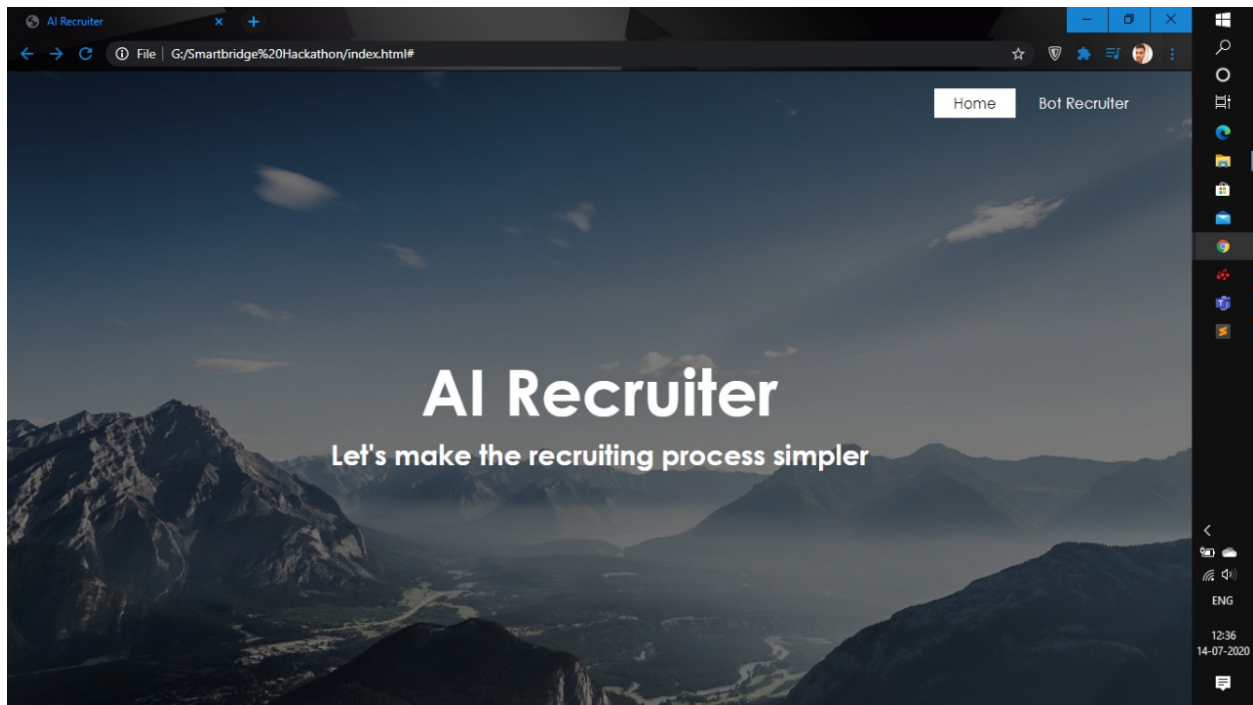
10. FUTURE SCOPE

While AI is reported to have a major impact on the workforce, recruiters will likely be safe. There are many efficiencies hiring software offers but the benefits are more of automated workflows and not necessarily computerized decision making. We can use software to streamline the hiring process.

11. BIBLIOGRAPHY

- [1]. A. Agarwal, How AI is transforming the hiring process. (2017), https://www.peoplesmatters.in/article/hirebetter-hire-faster/how-ai-is-transforming-the-hiringprocess16517?utm_source=peoplesmatters&utm_medium=international&utm_campaign=learnings-of-the-day.
- [2]. C. Alistair Cox, Artificial intelligence set to revolutionize recruitment, <https://www.enterpriseinnovation.net/article/haysartificial-intelligence-set-revolutionize-recruitment1783494879,1-3>.
- [3]. Anz, Organisations are turning to artificial intelligence to improve their recruitment processes. here's how it can benefit candidates, 2018, <https://news.efinancialcareers.com/uk/en/318729/organisations-turning-artificial-intelligence-improve-recruitment-processes-heres-how-it-can-benefit-candidates-sc>.
- [4]. P. Attfield, How artificial intelligence is transforming the recruitment process, 2018, <https://www.theglobeandmail.com/business/articlehow-artificial-intelligence-is-transforming-the-recruitment-process>.
- [5]. C. Basu Mallick, 3 ways artificial intelligence (AI) will transform recruitment, 2018, <https://www.hrtechnologist.com/articles/recruitmentonboarding/3-ways-ai-will-transform-recruitment>.
- [6]. G. Blogger, Future recruiting: 4 ways artificial intelligence is changing the hiring process, 2018, <http://www.yoh.com/blog/future-recruiting-4-ways-artificial-intelligence-is-changing-the-hiring-process>.

APPENDIX



Build your own assistant using
IBM Watson Assistant

Assistant preview

Question 2

Which of the following functions disconnects the stream from the file pointer.

fremove()

fclose()

fremove()

file pointer to be set to NULL

fclose()

Hey you got the right answer. Your score is 2. Here comes a next one.

Question 3

Where to place "f" with a double constant 3.14 to specify it as a float?

(float)(3.14)(f)

(f)(3.14)

3.14f

f(3.14)

3.14f

Type something... →


Activate Windows

Build your own assistant using
IBM Watson Assistant

Assistant preview

FINAL SCORE is 9

Qualified the test



VectorStock® VectorStock.com/9802352

Further details will be sent through an email. A warm WELCOME to you to be as a part of our

Type something... →

Activate Windows

List Of Figures:

Figure 3.1	Working Of IBM Watson Assistant.....	5
Figure 3.1.1	Block diagram of AI Recruiter.....	6
Figure 5.1	Flowchart of AI Recruiter.....	10