Intelligent Customer Help Desk with Smart Document Understanding

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INTRODUCTION

Overview

A virtual assistant is an independent contractor who provides administrative services to clients while operating outside of the client's office. A virtual assistant typically operates from a home office but can access the necessary planning documents, such as shared calendars, remotely.

Purpose

Virtual assistants are great for businesses; They can interact with customers and solve problems. Virtual assistants can save time, money and require minimum human interference. Virtual assistants are scalable, meaning they can be used to handle multiple requests simultaneously, unlike the human counterpart. Customers will not have to wait for hours to get clarification or assistance. Virtual assistants can solve their problems instantly.

LITERATURE SURVEY

Existing problem

Virtual assistants can answer simple questions but require human intervention for complicated issues. The objective of a virtual assistant is to minimize human intervention, thus a virtual assistant must be tuned in such a way that it answers complicated questions without redirecting the customer to humans.

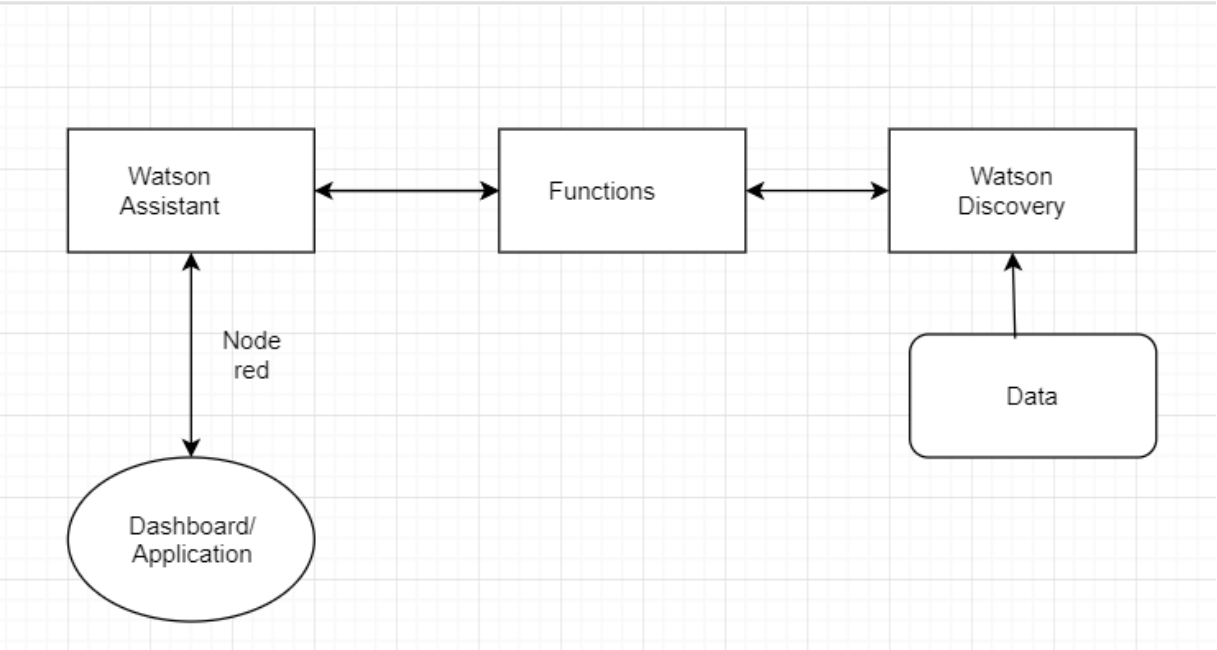
Proposed solution

This can is done by making a virtual assistant that scans the manual and recommend the relevant page to the customer. This way, a virtual assistant could help the customer without the need for humans.

Watson Assistant can be used to make a virtual assistant that can interact with the customer, and Watson discovery is used to analyse the text in the owner's manual to make the virtual assistant smarter.

THEORITICAL ANALYSIS

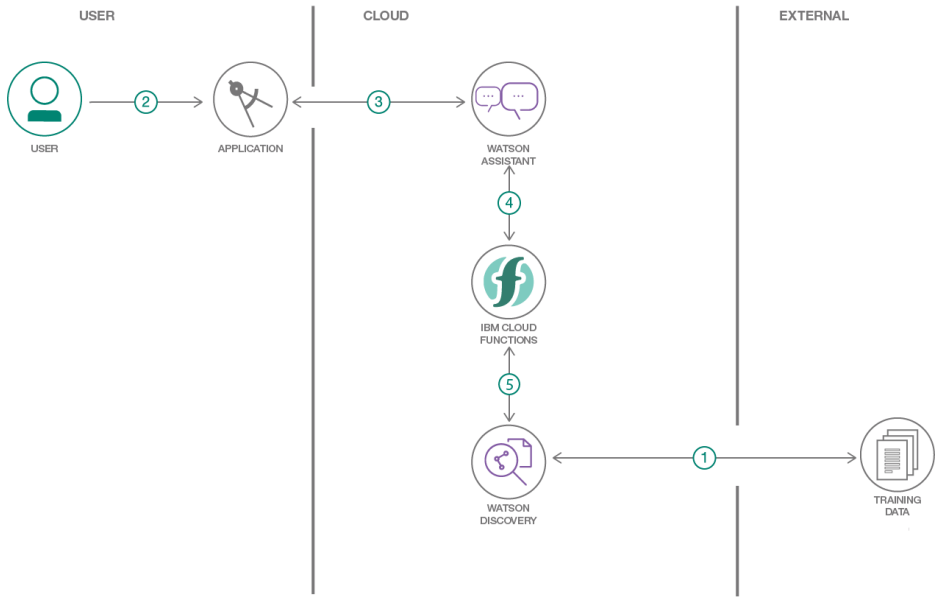
Block diagram



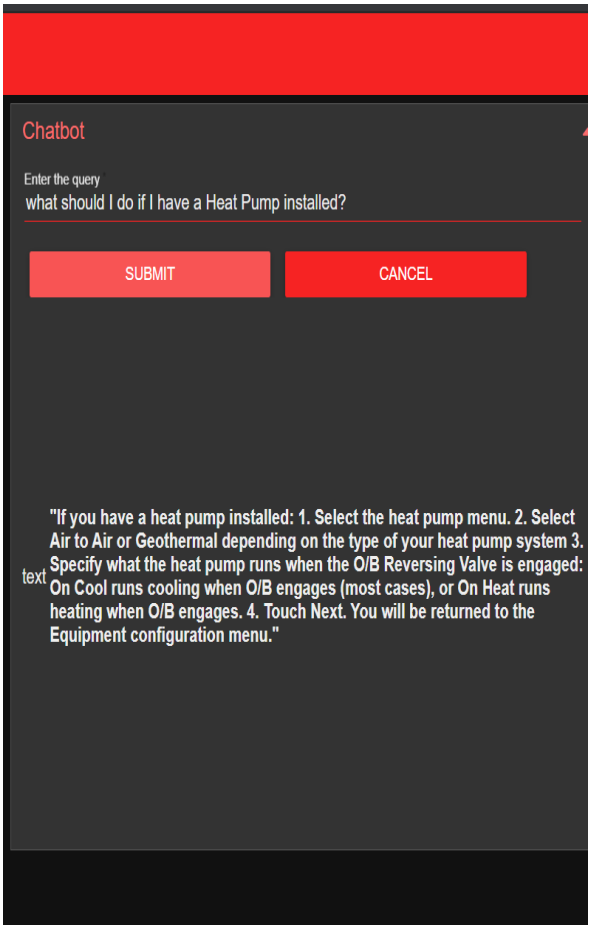
Software Design

- Watson Discovery is trained with user manual data.
- The document is split into multiple parts by the subtitle.
- IBM Cloud Functions is used to connect Watson Discovery with Watson Assistant.
- IBM Watson Assistant is trained with intents and the product information intent is connected to IBM Cloud Functions.
- Node-Red is used to make an application that connects IBM Watson Assistant to Dashboard.

FLOWCHART



RESULT



ADVANTAGES

1. Scalable
2. Saves money
3. Easy to deploy
4. Can answer most questions

DISADVANTAGES

1. Requires supervision
2. Cannot answer complicated questions
3. Cannot be used if the user manual (or data) has too many pages.

APPLICATIONS

1. The web app can be used to resolve customer queries.
2. It can be used to answer questions related to company policies.
3. Employees can use it to check the rules of their company.

CONCLUSION

Although the application is user friendly, it is not a substitute for humans. The Intelligent Customer Help Desk is far better than most assistants in the market and it should be used by companies.

FUTURE SCOPE

It can be used by startups and emerging companies that cannot afford to hire too many customer care agents. It can also be used by MNCs to take care of reoccurring problems.

BIBILOGRAPHY

- https://github.com/IBM/watson-discovery-sdu-with-assistant
- https://developer.ibm.com/patterns/enhance-customer-help-desk-with-smart-document-understanding/
- https://developer.ibm.com/tutorials/how-to-create-a-node-red-starter-application/
- https://cloud.ibm.com/docs/openwhisk?topic=cloud-functions-getting-started
- https://developer.ibm.com/articles/introduction-watson-discovery/

APPENDIX

FLOW.JSON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"id":"73a12e7b.f832d",

"type":"ui_form",

"z":"d61623aa.2f25a",

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