Mini Project Report submitted in partial fulfilment
of the requirement for the degree of
B. E. (Information Technology)

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CERTIFICATE OF APPROVAL

For

Mini Project Report

This is to Certify that

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Have successfully carried out Mini Project entitled

"**Coffee Shop Chat-Bot**

in partial fulfilment of degree course in

Information Technology

As laid down by University of Mumbai during the academic year

2020-21

Under the Guidance of

Prof. Icchanshu Jaiswal

Signature of Guide

Head of Department

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ABSTRACT

Our project is based on Coffee Shop Chat-Bot in which we present a real-world conversational AI system to help customers order coffee and snacks from the Starbucks store by chatting with our Coffee Shop Chat-Bot. Our architecture consists of a frame-based dialogue management system, which calls machine learning models for intent classification, named entity recognition, and information retrieval subtasks.

Our chatbot has been deployed on small scale, capable of handling n numbers of users at a time. We describe the various opportunities and challenges of developing a chatbot in the consumer-foods industry.

In the real world the main problem related to ordering coffee or snacks in Starbucks is that we need to go to the order-counter for ordering coffee or snacks and we may need to stand in the waiting queue, which wastes a lot of time.

Due to this reason we created our chatbot which will enable customers to chat with the bot itself and place their desired orders through the chatbot, which will then pass on the information & data to the Starbucks ordering facility.

So, our chatbot will firstly greet the customer and then it will ask what it can do for the customer, to which the customer can reply “order”, so that the bot asks what the customer would like to order, to which the customer can reply either “coffee” or “snacks”, so that the bot asks further questions regarding the customer’s order-needs - such as displaying available items from the shop-menu, the quantity of ordered items, the size of ordered items, etc.

Our team is developing the above stated necessary solution regarding the real-life problem of time & effort wastage that occurs in Starbucks stores while customers order food.

INTRODUCTION

This project is based on Coffee Shop Chat-Bot in which we present a real-world conversational AI system to help customers order coffee and snacks from the Starbucks store by chatting with our Coffee Shop Chat-Bot. The Starbucks stores become future ready with the help of our food-ordering chatbot. It works like a digital order-taking attendant and responds to customer's order requirements efficiently and in a greeting manner.

Our chatbot asks questions regarding the customer's order-needs - such as whether customers need 'coffee' or 'snacks', displaying available items from the shop-menu, takes the quantity of ordered items, takes the size of ordered items, etc. This enables faster order engagement between customer and store staff, thus saving precious time and efforts for both parties.

AIMS & OBJECTIVES

1. 24/7 Customer Service

   Modern customers have high expectations when it comes to customer service response times and this can be especially challenging in the consumer-foods industry, where customers from all over the world have different order demands and needs. Coffee Shop Chat-Bot can help by providing 24/7 customer service.

2. Reduced staff requirement

   Due to lower interaction between customers and staff-members because of our chatbot, the Starbucks store can reduce the number of working staff members thus saving their expenses on man-hours.

3. Increases average orders per day

   As the chatbot can interact and accept data from multiple customers simultaneously, more and more customers can place orders at the same time as there is no requirement of customers waiting in queue and thus saving everyone's time.

4. Better Customer Personal Experience

   AI-powered chatbots have the power to help Starbucks stores to deliver a far more personalized guest experience. As stated earlier, intelligent recommendations can be made during the ordering process.

PROBLEM STATEMENT

In our Coffee Shop Chat-Bot system, our AI chatbot immediately tends to customers' order needs without any interference. So, customers don't have to wait longer in waiting-queues for their orders to get placed.

Our Coffee Shop Chat-Bot comes with a predefined set of answers for frequently placed orders and other questions. For example, whether customer wants 'coffee' or 'snacks', displaying available items from the shop-menu, the quantity of ordered items, the size of ordered items, etc.

IMPLEMENTATION

Our project is based on Starbucks coffee & snack booking AI bot which is developed using Dialogflow which consists of some basic component like entities, NLP, intents and many more.

Within a chatbot, *intent* refers to the goal the customer has in mind when typing in a question or comment. While *entity r*efers to the modifier the customer uses to describe their issue, *intent* is what they really mean.

As part of building a chatbot, we preprocess data to create topics and then extract and save associated synonyms for given topics. This data is uploaded to Dialogflow Agent, and topics are uploaded in entities. Entities are Dialogflow's mechanism for identifying and extracting useful data from natural language inputs.

Within a chatbot, an entity, or slot, modifies user intent. Chatbot entities are connected to knowledge repositories in order to provide more personal and accurate responses on user search. An entity in a chatbot is used to add values to the search intent.

CODING

1. Default Welcome Intent.json :


```
{
  "id": "e94ee993-af77-4745-8953-6a6dd63b1578",
  "parentId": "109e8301-1bff-4658-9138-1d2c730f1e1d",
  "rootParentId": "109e8301-1bff-4658-9138-1d2c730f1e1d",
  "name": "Default Welcome Intent - yes",
  "auto": true,
  "contexts": [
    "DefaultWelcomeIntent-followup"
  ],
  "responses": [
    {
      "resetContexts": false,
      "action": "DefaultWelcomeIntent.DefaultWelcomeIntent-yes",
      "affectedContexts": [
        {
          "name": "order-start",
          "lifespan": 5
        }
      ],
      "parameters": [
        {
          "id": "5b01ecf5-418b-47ba-b6f8-e8a053fff896",
          "name": "order",
          "required": false,
          "dataType": "@order",
          "value": "$order",
          "defaultValue": "",
          "isList": false,
          "prompts": [],
          "promptMessages": [],
          "noMatchPromptMessages": [],
```

```
        "noInputPromptMessages": [],
        "outputDialogContexts": []
      }
    ],
    "messages": [
      {
        "type": "0",
        "title": "",
        "textToSpeech": "",
        "lang": "en",
        "speech": [
          "OK. What would you like to order?"
        ],
        "condition": ""
      }
    ],
    "speech": []
  }
 ],
 "priority": 500000,
 "webhookUsed": false,
 "webhookForSlotFilling": false,
 "fallbackIntent": false,
 "events": [],
 "conditionalResponses": [],
 "condition": "",
 "conditionalFollowupEvents": []
}
```

2. order.drink.json :


```
{
  "id": "420f9b81-450c-46d7-85d0-a23f5c4d9443",
  "name": "order.drink",
  "auto": true,
  "contexts": [
    "order-start"
  ],
  "responses": [
    {
      "resetContexts": false,
      "action": "order.drink",
      "affectedContexts": [
        {
          "name": "orderdrink-followup",
          "lifespan": 2,
          "parameters": {}
        },
        {
          "name": "order-start",
          "lifespan": 5
        }
      ],
      "parameters": [
        {
          "id": "ccdf0ed0-faae-48d6-9c2c-2e3cc33b20ec",
          "name": "delivery-pickup",
          "required": false,
          "dataType": "@delivery-pickup",
          "value": "$delivery-pickup",
          "defaultValue": "",
          "isList": false,
          "prompts": [
            {
```

```
          "lang": "en",
          "value": "Would you like a delivery or pick-up?"
        }
      ],
      "promptMessages": [],
      "noMatchPromptMessages": [],
      "noInputPromptMessages": [],
      "outputDialogContexts": []
    },
    {
      "id": "1e3c49cb-eb35-4a20-9cd2-7fb4c7ba2d1e",
      "name": "drink",
      "required": true,
      "dataType": "@drink",
      "value": "$drink",
      "defaultValue": "",
      "isList": false,
      "prompts": [
        {
          "lang": "en",
          "value": "What would you like to drink?"
        }
      ],
      "promptMessages": [],
      "noMatchPromptMessages": [],
      "noInputPromptMessages": [],
      "outputDialogContexts": []
    },
    {
      "id": "d40a1a79-cc9c-469e-8296-4a777893260e",
      "name": "size",
      "required": true,
      "dataType": "@size",
      "value": "$size",
```

```
      "defaultValue": "",
      "isList": false,
      "prompts": [
        {
          "lang": "en",
          "value": "Small, medium or large?"
        }
      ],
      "promptMessages": [],
      "noMatchPromptMessages": [],
      "noInputPromptMessages": [],
      "outputDialogContexts": []
    },
    {
      "id": "f168b859-ae51-4c37-b775-0d4b8de1502b",
      "name": "iced",
      "required": false,
      "dataType": "@iced",
      "value": "$iced",
      "defaultValue": "",
      "isList": false,
      "prompts": [],
      "promptMessages": [],
      "noMatchPromptMessages": [],
      "noInputPromptMessages": [],
      "outputDialogContexts": []
    },
    {
      "id": "d61cb7cb-3133-4372-b8e4-eaaae7e2947c",
      "name": "amount",
      "required": false,
      "dataType": "@sys.number",
      "value": "$amount",
```

```
      "defaultValue": "",
      "isList": false,
      "prompts": [],
      "promptMessages": [],
      "noMatchPromptMessages": [],
      "noInputPromptMessages": [],
      "outputDialogContexts": []
    },
    {
      "id": "d968e0bf-c9c0-462b-856a-11acc53fc675",
      "name": "milk-type",
      "required": false,
      "dataType": "@milk-type",
      "value": "$milk-type",
      "defaultValue": "",
      "isList": false,
      "prompts": [],
      "promptMessages": [],
      "noMatchPromptMessages": [],
      "noInputPromptMessages": [],
      "outputDialogContexts": []
    }
  ],
  "messages": [
    {
      "type": "suggestion_chips",
      "platform": "google",
      "title": "",
      "textToSpeech": "",
      "suggestions": [
        {
          "title": "Yes"
        },
        {
```

```
            "title": "No"
          }
        ],
        "lang": "en",
        "condition": ""
      },
      {
        "type": "0",
        "title": "",
        "textToSpeech": "",
        "lang": "en",
        "speech": [
          "Your order is: $size $drink with $milk-
type. Is that right?",
          "Your order is: $size $drink with $milk-
type. Is that right?",
          "You\u0027ve ordered $size $drink. Correct?",
          "You want $amount $size $drink with $topping. Is that rig
ht?",
          "You want $amount $size $drink with $milk-
type. Is that right?",
          "You want $amount $size $drink. Is that right?",
          "You want $amount $size $drink. Is that right?"
        ],
        "condition": ""
      }
    ],
    "defaultResponsePlatforms": {
      "google": true
    },
    "speech": []
  }
],
```

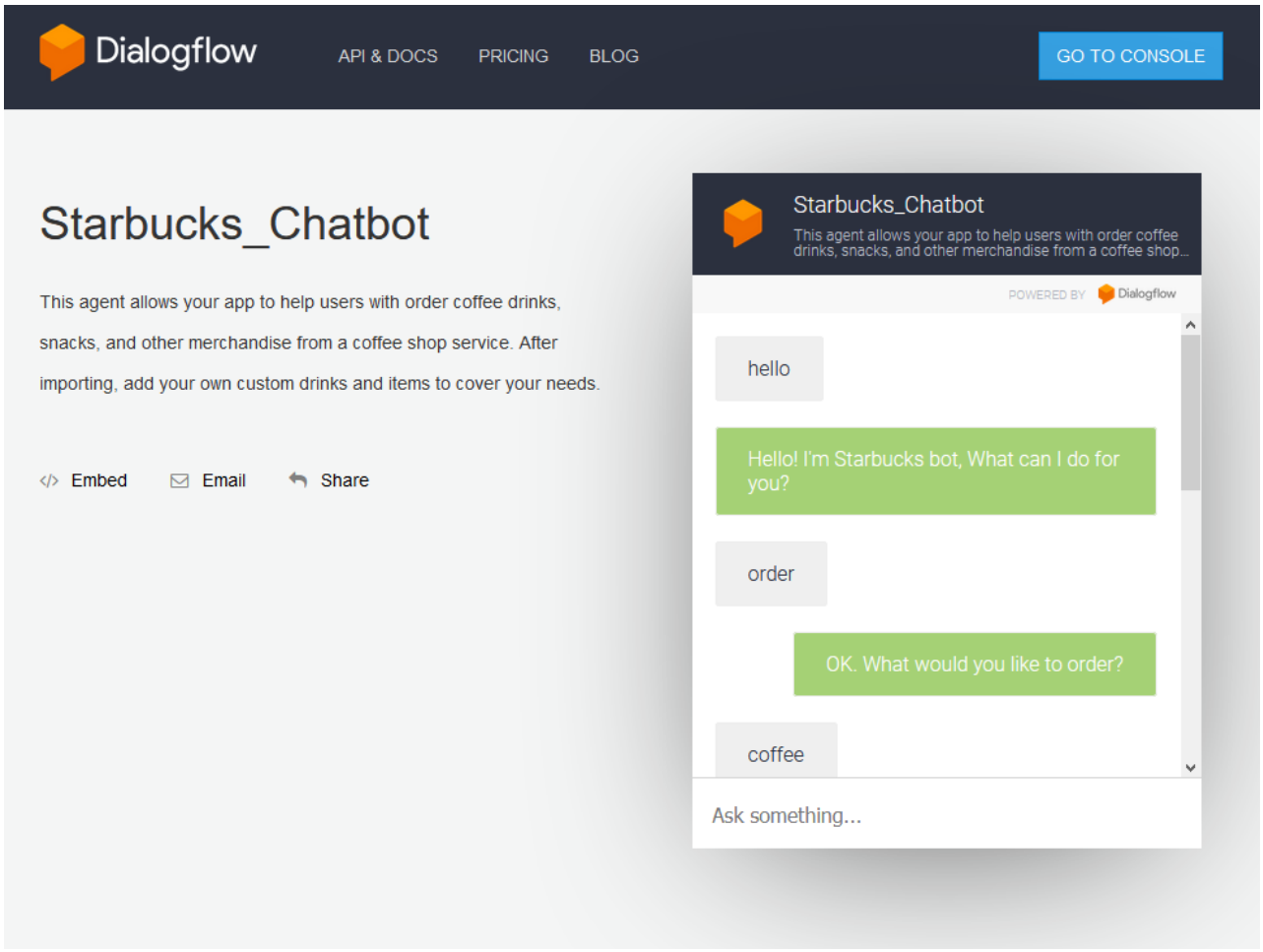
```
  "priority": 500000,
  "webhookUsed": false,
  "webhookForSlotFilling": false,
  "fallbackIntent": false,
  "events": [],
  "conditionalResponses": [],
  "condition": "",
  "conditionalFollowupEvents": []
}
```

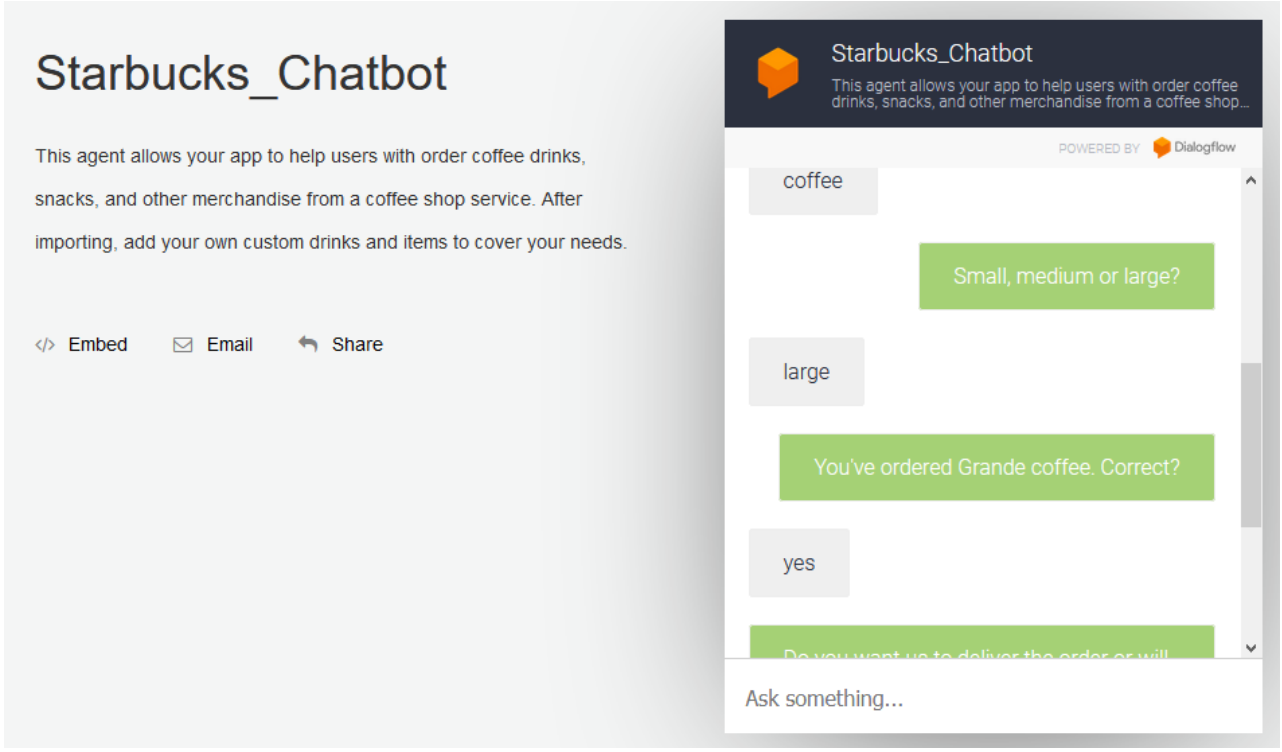
3. order.snack.json:-


```
[
  {
    "id": "8092a963-4f13-4d4c-a9b6-f32ea68c7175",
    "data": [
      {
        "text": "Please give ",
        "userDefined": false
      },
      {
        "text": "1",
        "meta": "@sys.number",
        "alias": "number",
        "userDefined": false
      },
      {
        "text": " ",
        "userDefined": false
      },
      {
        "text": "Cookie",
        "meta": "@snack",
        "alias": "snack",
        "userDefined": true
      }
    ],
    "isTemplate": false,
    "count": 0,
    "lang": "en",
    "updated": 0
  },
  {
    "id": "1208d36c-272e-4a7c-9b77-0d91a544f398",
    "data": [
```

```
      {
        "text": "Pizza",
        "meta": "@snack",
        "alias": "snack",
        "userDefined": true
      }
    ],
    "isTemplate": false,
    "count": 0,
    "lang": "en",
    "updated": 0
  }
]
```

Screenshots

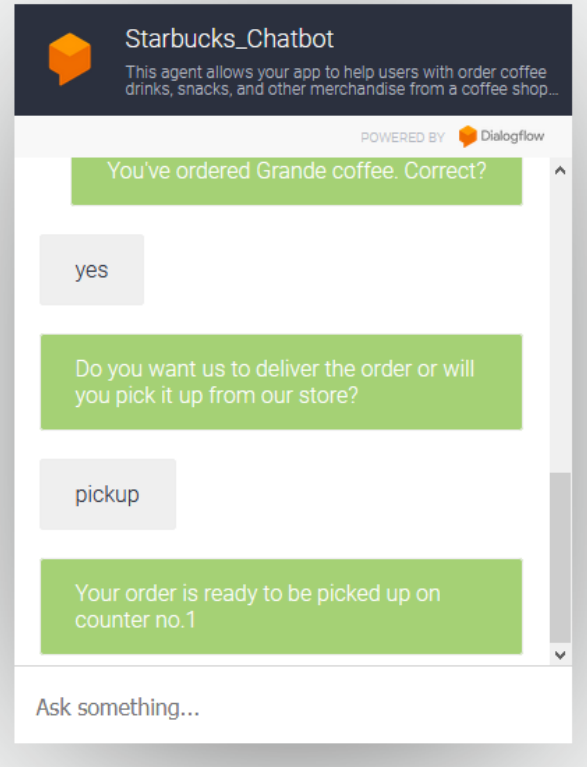




Starbucks_Chatbot

This agent allows your app to help users with order coffee drinks, snacks, and other merchandise from a coffee shop service. After importing, add your own custom drinks and items to cover your needs.

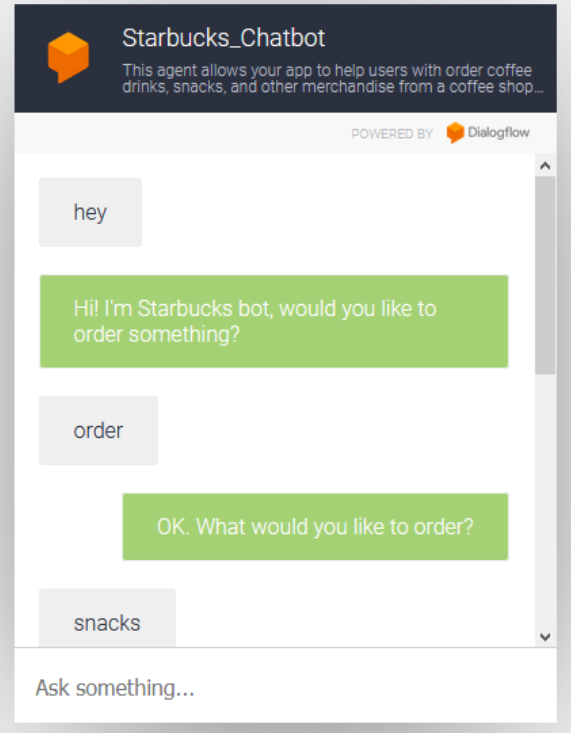
Embed Email Share



Starbucks_Chatbot

This agent allows your app to help users with order coffee drinks, snacks, and other merchandise from a coffee shop service. After importing, add your own custom drinks and items to cover your needs.

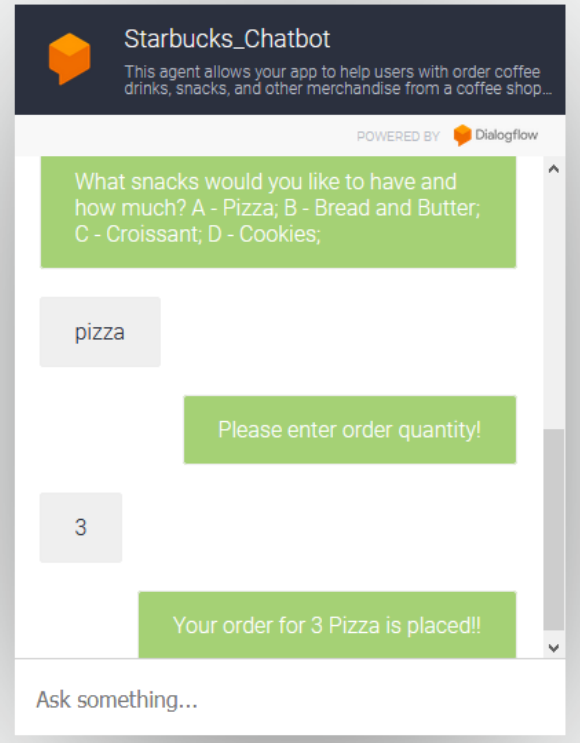
Embed Email Share



Starbucks_Chatbot

This agent allows your app to help users with order coffee drinks, snacks, and other merchandise from a coffee shop service. After importing, add your own custom drinks and items to cover your needs.

Embed Email Share



RESULTS & DISCUSSION

This system gives the output as per the provided input the AI bot will filter the data as per the requirements and it works like a digital Starbucks store attendant and responds to your customer's inquiries smartly. It enhances conversations, resulting which, the store's direct orders get multiplied.

CONCLUSION

Coffee Shop Chat-Bot's ability to understand what your customers are asking for is effective and thus leads to growth of the business.

Our chatbot converses with customers in a friendly and intelligent manner, thus analyzing customer's needs smartly and thus providing the gathered data to the store managers, so that they can fulfill customers' needs successfully.