IMPLEMENTATION OF VIRTUAL NATIONAL DIGITAL SERVICE ASSISTANT USING DIALOGFLOW

BY

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This Report Presented in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science in Computer Science and Engineering

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DAFFODIL INTERNATIONAL UNIVERSITY

DHAKA, BANGLADESH

10th DECEMBER 2019

APPROVAL

This project titled **"Implementation of virtual National Digital Service Assistant using Dialogflow**", submitted by Sujit Kumar Sarkar (ID:161-15-977) to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents.

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DECLARATION

We hereby declare that this internship title on "**Implementation of virtual National Digital Service Assistant using Dialogflow"** has been done by us under the supervision of **Tania Khatun, Lecturer, and Department of CSE** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for the award of any degree or diploma.

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Submitted by:

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First, we express our heartiest thanks and gratefulness to Almighty God for His divine blessing makes us possible to complete the final year project/internship successfully.
We grateful and wish our profound indebtedness to **Tania Khatun**, **Lecturer**, Department of CSE Daffodil International University, Dhaka. Deep Knowledge & keen interest of our supervisor in the field of "*Artificial Intelligence*" to carry out this project. His endless patience ,scholarly guidance ,continual encouragement , constant and energetic supervision, constructive criticism , valuable advice ,reading many inferior draft and correcting them at all stage have made it possible to complete this project. We would like to express our heartiest gratitude to Dr. Syed Akhter Hossain, professor, and Head**,** Department of CSE, for his kind help to finish our project and also to other faculty member and the staff of CSE department of Daffodil International University. We would like to thank our entire course mate in Daffodil International University, who took part in this discuss while completing the course work.
Finally, we must acknowledge with due respect the constant support and patients of our parents.

ABSTRACT

In my internship I've worked in a project to develop a Chatbot which is virtual national service assistant with Dialogflow framework. There have different frameworks to build Chatbot such as IBM Watson, Rasa, chatfuel, Chattypeople, Smartloop, FlowXo, Botpress, etc. Core python programming language can be used to build a Chatbot. Nowadays there are different popular frameworks are used and Dialogflow is one of them. In Dialogflow google cloud is used for database. By using Dialogflow the implementation of Chatbot in different web platforms or social sites is very easy. Dialogflow has its UI and the developers can also use their customized UI by connecting with API. We develop web and Social based Chatbot that is very useful because we can access it from anywhere in the world. It is user friendly framework. That's why I choose my internship report "Implementation of National Digital Service Assistant using Dialogflow". Working with Hypertag solutions Ltd has helped to improve my upcoming career with a great experience. This report brings us business development knowledge, and gained experiences from this internship.

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CHAPTER-1

INTRODUCTION

1.1 INTRODUCTION

The internship is the place where I learned about the real workplace. Here I have also learned about real-life projects and official management. From my University, I have gained lots of knowledge, but in my internship period, I learned about how to implement that knowledge in real life. Here I trained about machine learning and how to work with the Dialogflow framework. The important thing I have learned about teamwork which helps me to build my career in corporate life.

In this report, I discuss about Chatbot implementation, which I have learned from the internship.

1.2 MOTIVATION

In this internship, I have a scope to let me know about effective work experience toward Artificial Intelligence (AI) and Python to implement Chatbot. I prefer Artificial Intelligence because Artificial intelligence is the future of technology and engineering. Artificial Intelligence has many working areas in the world. We can see that there are many AI-based technology and devices are increasing around as. In this future, there was a possibility that most of the technology will depend on Artificial Intelligence. And Chatbot is the most popular application of AI. That's why I chose the Artificial Intelligence and here have creativity that I can apply.

So I prefer Hypertag Solutions Ltd due to that is a well-reputed company that I have gained lots of knowledge about Artificial Intelligence and python language. The employees and the management are so friendly and helpful. They also have a branch in another country.

So, in this company, I have gain experience and a lot of things.

1.3 Internship Objective

- Got experience about the company rules and regulations. [1]
- Gain knowledge about the behavior with a colleague. [1]
- Improve skills in a professional career. [1]
- Learn how to collaborate with a team.
- Improve communication skills with colleagues and bosses.
- Improve technical skill
- Build a connection with company professionals.

1.4 Internship Goal

- Gain more experience in a programing language.
- Knowing about the Chatbot framework.
- Develop skills in research.
- Improve the capability of problem solving and programming.
- Knowing a lot of things about Dialogflow.

1.5 About the Company

Hypertag Solutions Ltd is a growing international company based on new technology and IoT. Hypertag Solutions Ltd established in 2012. They are working with a different branch of technology. They also working different types of projects and produce training courses with the government. For customer satisfaction, they provided 100% service efficiency. [2]

Desh.AI is a branch of Hypertag Solutions Ltd which is working on transforming the business with Artificial Intelligence. Desh.AI is enabling mission-critical applications for the fastest-growing market. [2]

Service Area:

- AI Strategy
- Conversational AI
- Internet of Things (IoT)
- Training Service
- Web Application Development
- POS based Solution
- Mobile Application
- Search Engine optimization
- m-Commerce
- Agent banking
- Web development of mobile
- Online Marketing

1.6 Report Layout:

In this report, I will attempt to show my works through distinctive chapters, in which I did an internship. At, to begin with, I attempted to present the introduction, motivation, internship object, internship objectives, around the company and report format. At that point, I've displayed approximately the organization, item and market situation, challenge, organization structure. At that point, I talked about the project that I have actualized in this internship. [3]

I tried to describe how to complete and implement my project and I have also been trying to point out the problems I have faced in my project. I write about future work which I can use it to increase my knowledge range that I can learn from here.

Finally, I tried to give quotation marks from which I wrote my report and I was able to do my project.

CHAPTER-2

ORGANIZATION

2.1 introduction

I have studied for almost four years at my University. Here I have gained a lot of knowledge, from which I found my destiny and work with that in the future. I found my favorite subject Artificial Intelligence from my University and found it as a place to work on this topic at Hypertag Solutions Ltd. I learned from here how to work in corporate life. This company helps to build my professional career one step forward.

Technology is increasing day by day and every moment new technology was invented. There is a competition among companies who work with technology. So there is a challenge to hold the local and international market value. That's why I need to lot of work skills which instructed me Hypertag Solutions Ltd. I learned from here about Artificial Intelligence, Chatbot-Framework, IoT, and Python programming language, which I can use to solve real-life problem-solving.

At the end of my internship period, I can say that it helped me to increase my skill, as a result, I can solve any problem to build Chatbot. So, I avowedly want to thank my university and Hypertag Solutions Ltd.

2.2 Product and market situation

Artificial Intelligence (AI) is the future of the world. The market value of AI is expanded each day. In the future most technology is going to be automated, for that AI is must needed. There was a lot of examples of AI application such as an automated car, home automation, speech recognition, robotics, virtual assistant, AI security, etc. Artificial Intelligence is similar to the human brain like learning, understanding, problem-solving, reasoning and others. [4]

There is an upcoming 5G network service. When the 5G network is globally available AI applications will significantly be developed. AI has become the raw material of this generation of software development and marketing. Most of the technology will depend on Artificial Intelligence. [4]

Furthermore, AI is used in the field of technology, business development, marketing, education, security and so on.

2.3 SWOT Analysis

Table: 2.1 SWOT Analysis [4]

Strength	**Weakness**	**Opportunities**	**Threats**
Suited location	Big of price or cost	Market development	High level moving to all time
Overall brand equity	Big staff cost	Expand product offering	High level moving to online conveyance
Individually brand products	Practically ability	Exclusive product contribution	Security
Capability	Permit	Co-branding locations	Shoplifting

2.4 Organizational Structure [6]

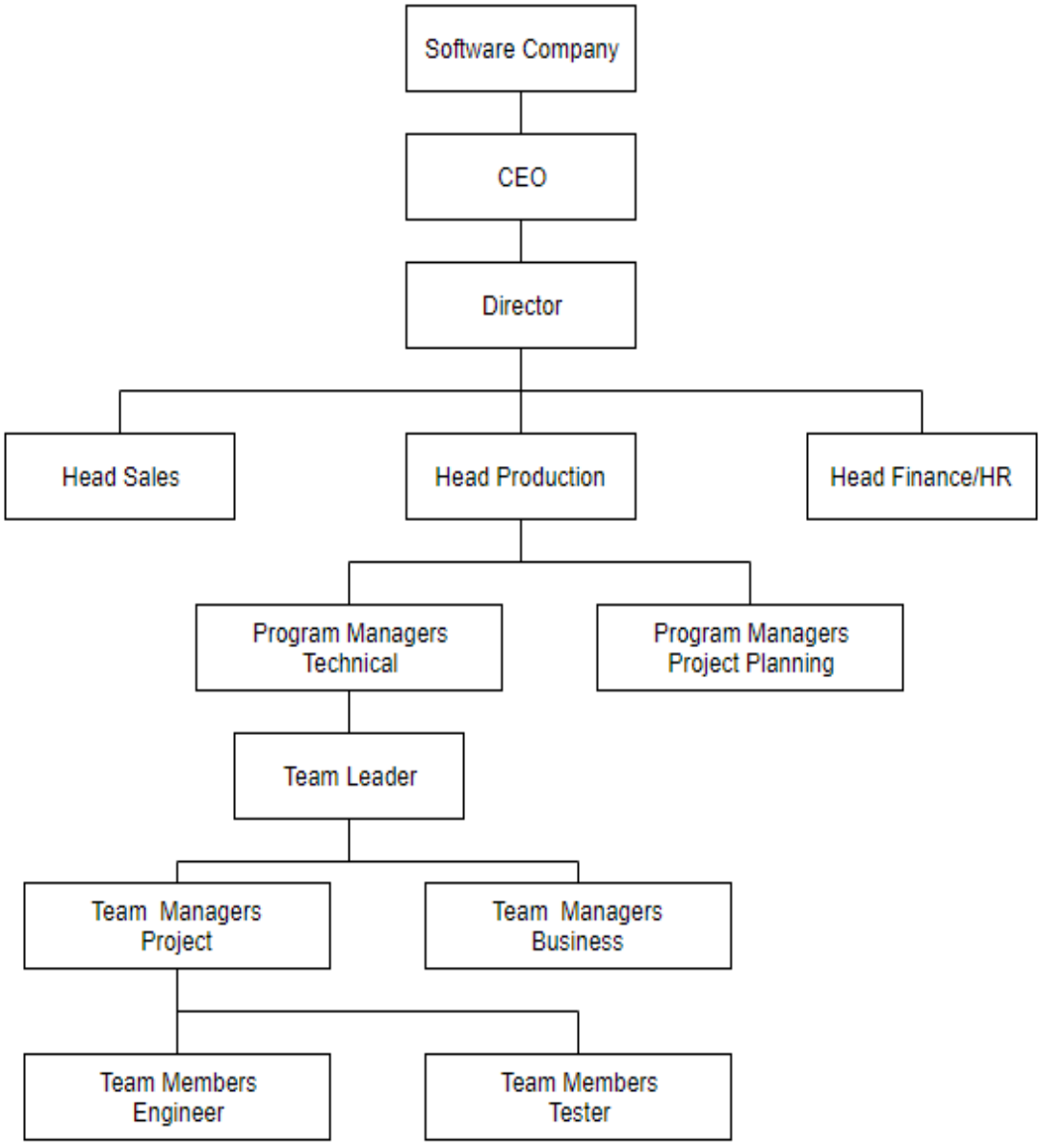


Fig: 2.2 Organizational Structure

CHAPTER-3

Project Tasks and Activities

3.1 Daily Project Tasks and Activities

For the reason, in the internship program, I joined Hypertag Solutions Ltd. During the internship time, they gave me some daily tasks. I fulfill my daily tasks very punctually. Here I describe my daily tasks and activities.

Figure: 3.1 Collect data from National Portal of Bangladesh.

To complete my Chatbot project I need lots of data for machine learning. So I collect all of my required data from the national portal of Bangladesh.

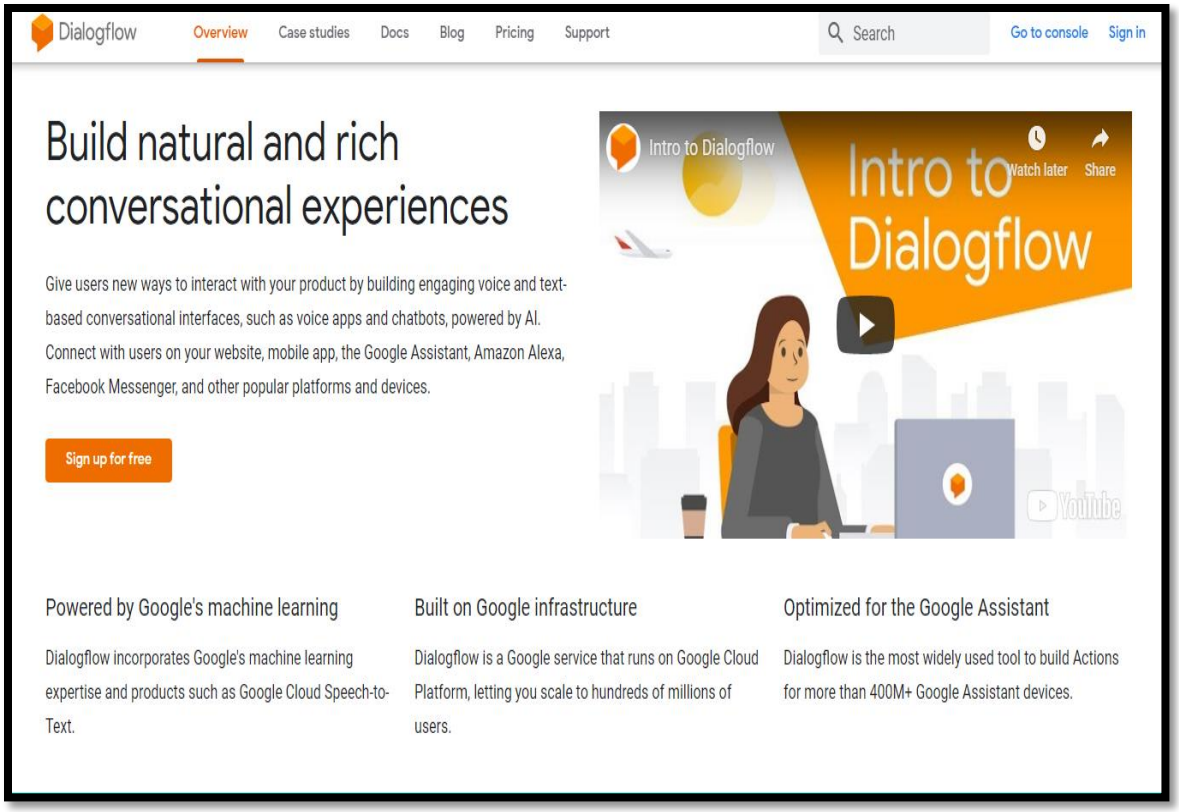


Figure: 3.2 Sign up to Dialogflow console.

At first, we need to search with “Dialogflow” key in the search engine of the browser. Then go to the link of https://dialogflow.com and sign up with Gmail. Before sing up, we don’t enter the Dialogflow console. After completing the sing up we can go to the next step.

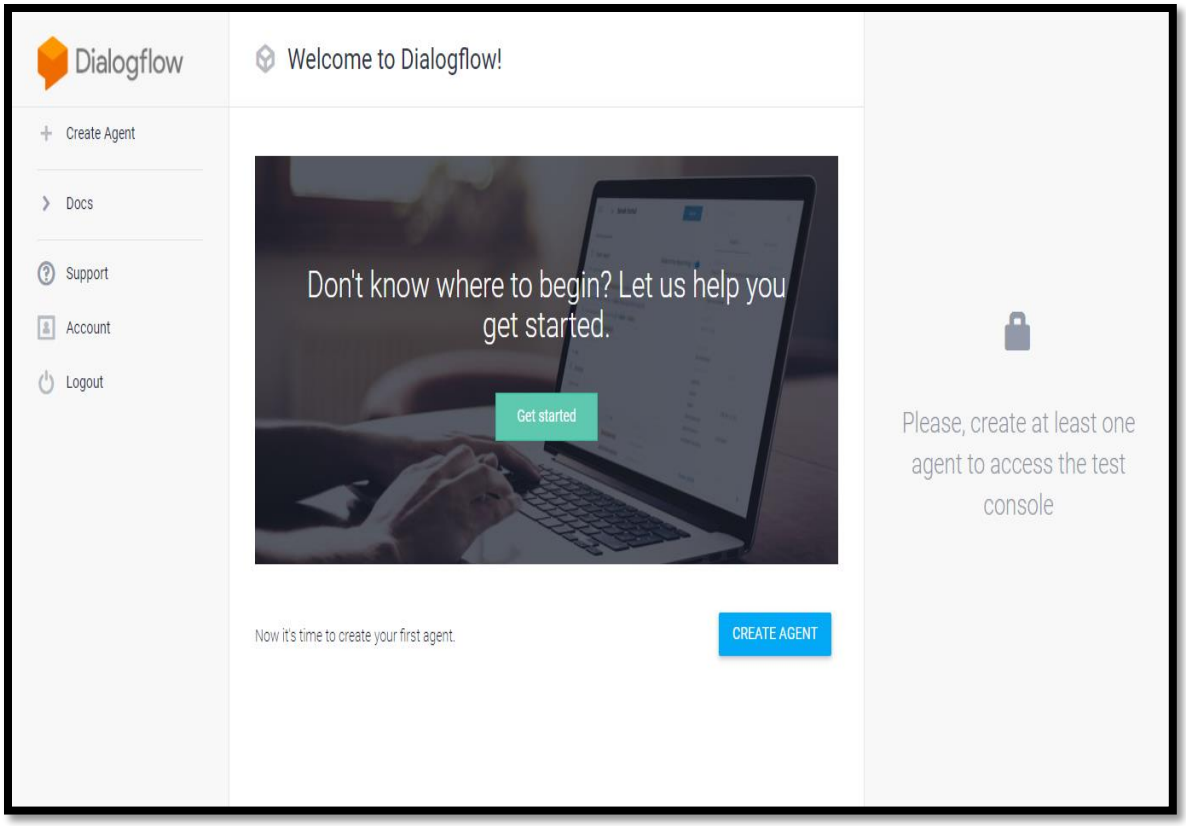


Figure: 3.3 Dialogflow home page.

This is the home page of the Dialogflow console. We can see in the sidebar there have different options. There have Create Agent, Docs, Support, Account, and Logout options. We can select one of those options that we need. For the beginner, they need to read the Docs of Dialogflow. For any type of support, there has a Support option.

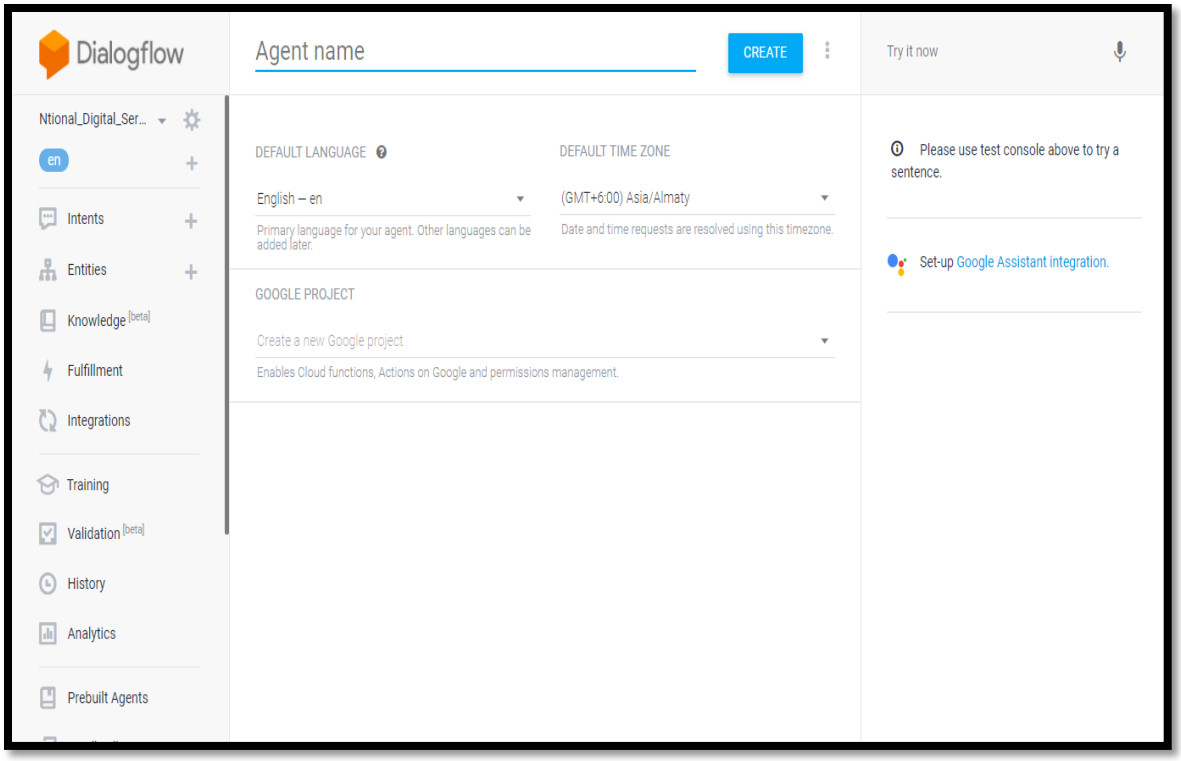


Figure: 3.4 Create an Agent.

The first task is to create an Agent in Dialogflow. Without creating an Agent we can't start the project. For one project I need to create one Agent and for multiple projects, I must create multiple Agents. The agent is basically is same is the project name that we want to create. In the agent name, there has a condition that we can't put any space into the agent name. There have an option to create multiple agents in one account. So after creation the agent we have to do a lot of work of my project.

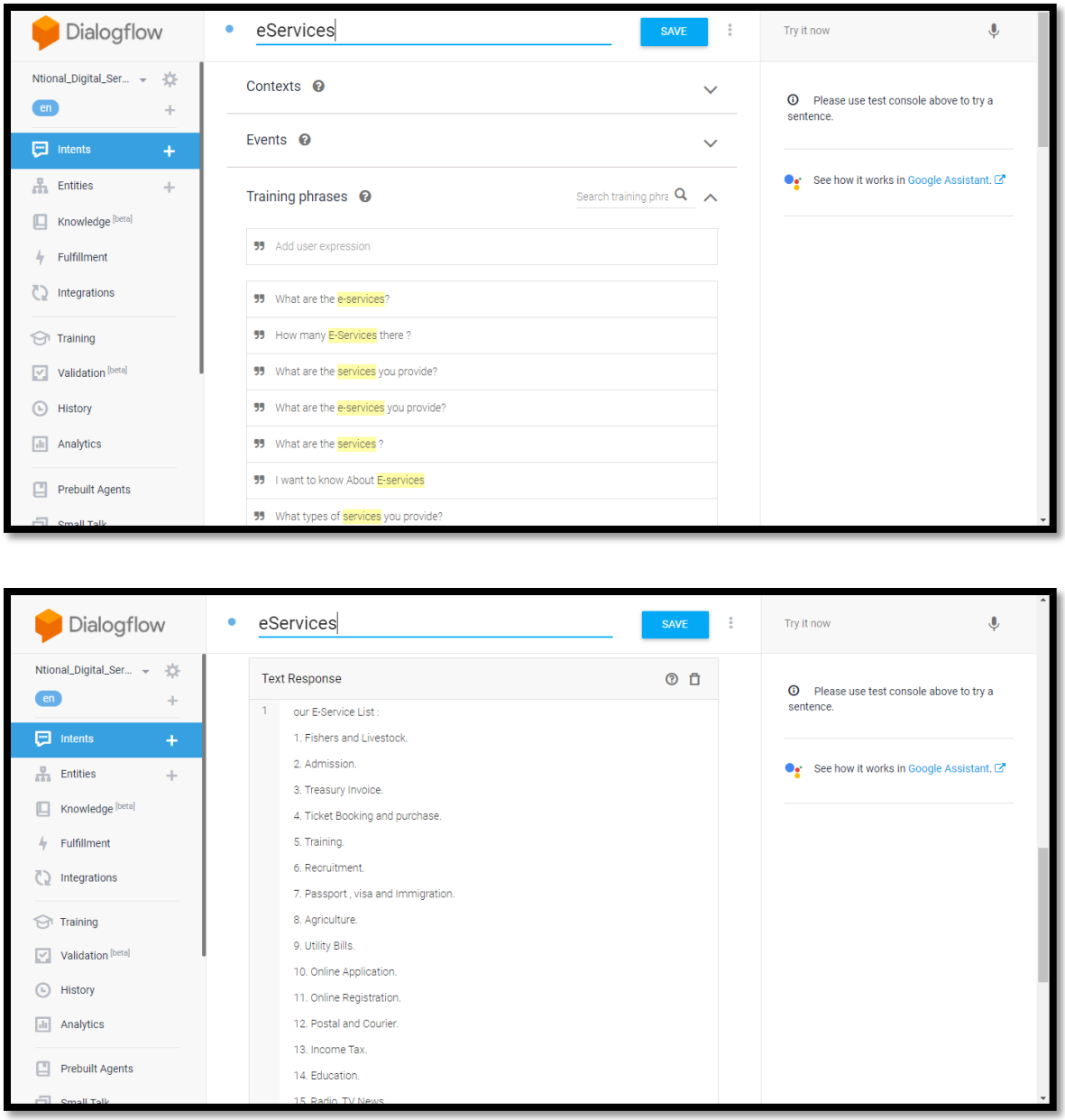


Figure: 3.5 Intent creation

The intent is the most important thing for the project. First of all, I need to identify how much possible intent could be. I must create multiple intents in my agent. Suppose I will create “Virtual National Digital Service Assistant” so I need to think about what type of question the user could ask my virtual Assistant. For each type of question, I need to create each intent. In the intent, there have training phase and text response. In the field of the training phase, I need to put the possible question that uses ay ask and in the text response field, I need to put the answer to this question. When user asks any question to this virtual assistant the agent starts matching with predefined intent then answer of this particular intent.

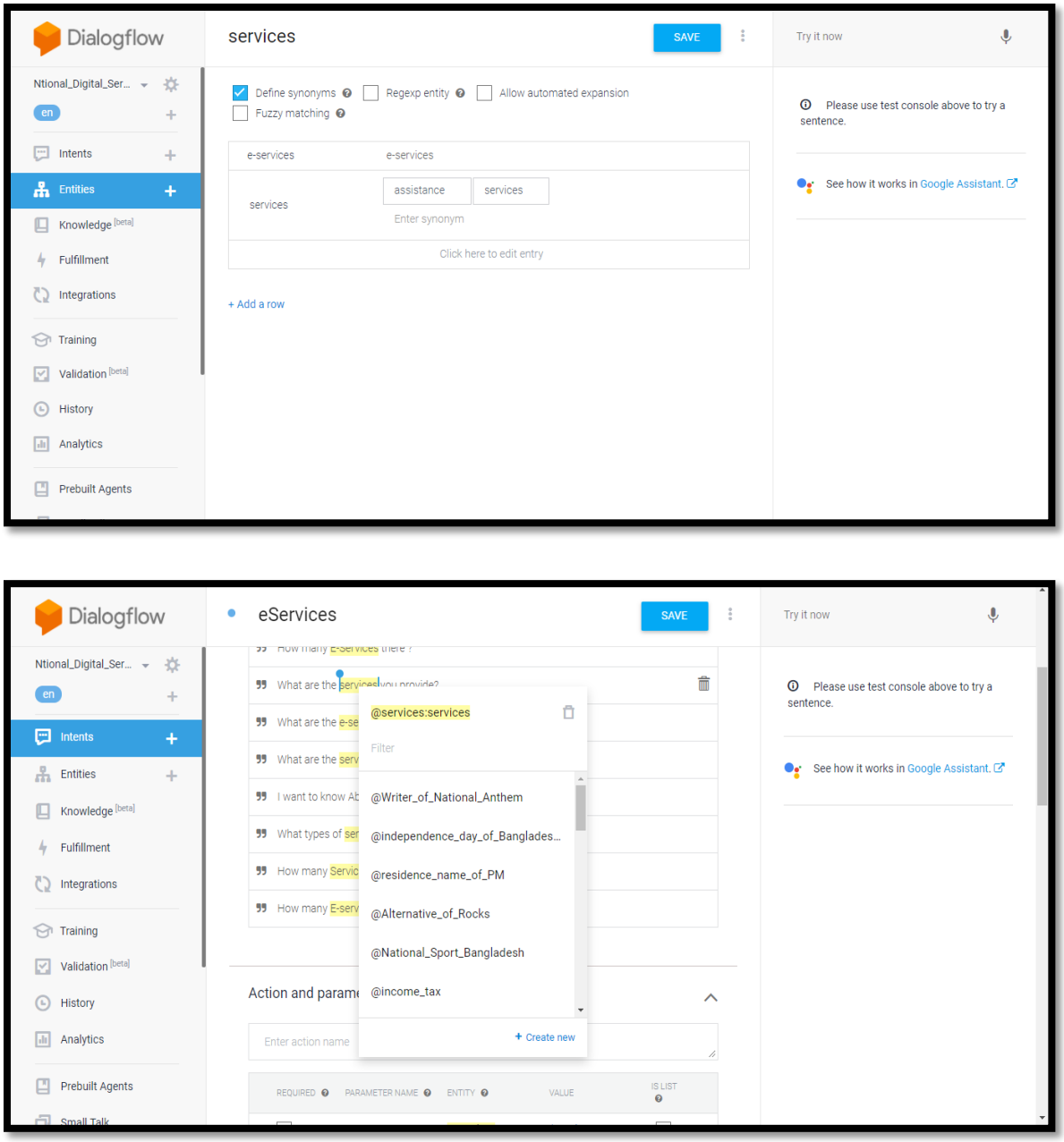


Figure: 3.6 Entity creation

To specify the intent by a word or a phrase entity has been used. Entity extracts the intent deeply to better understand user query. Dialogflow provides many default entities like age, time, location, name, email, colors, date, address, etc. we can create the custom entity that we need. Suppose there have different types of services in my project such as education, health, agriculture, etc. So for this entity, I will create an entity name as Services I will define entity entries like education, agriculture, and health services.

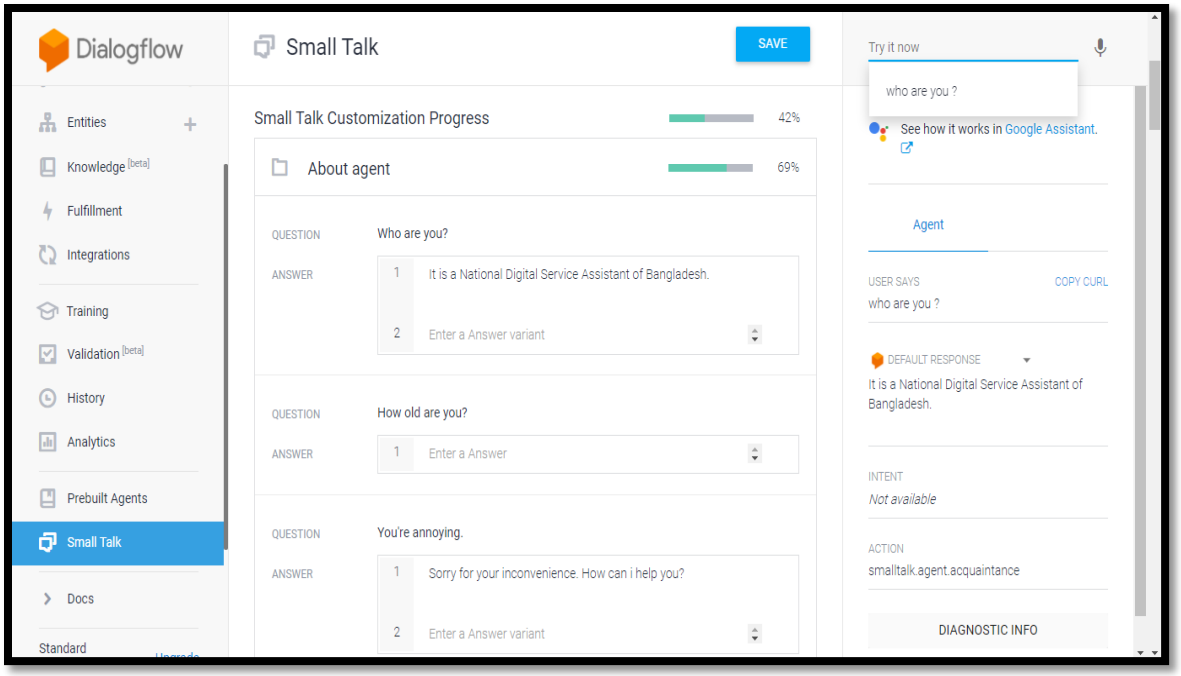
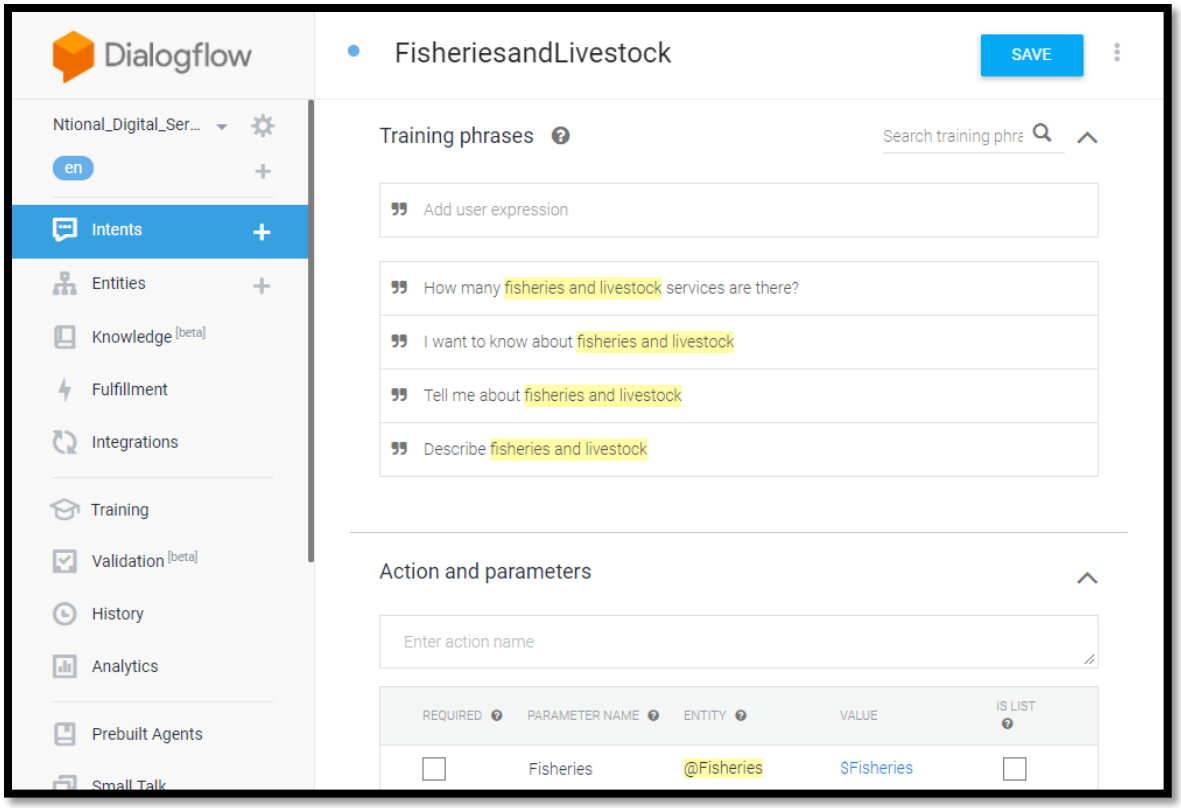


Figure: 3.7 train about small talk.

There also have a small talk option there. Dialogflow provides many defaults small talk and there have different category of small talk. For example hi, hello, who are you, etc. for these types of query we don't need to create an entity. These small questions are called small talk. So there have many pre-defined questions and I have to train the answers to these questions.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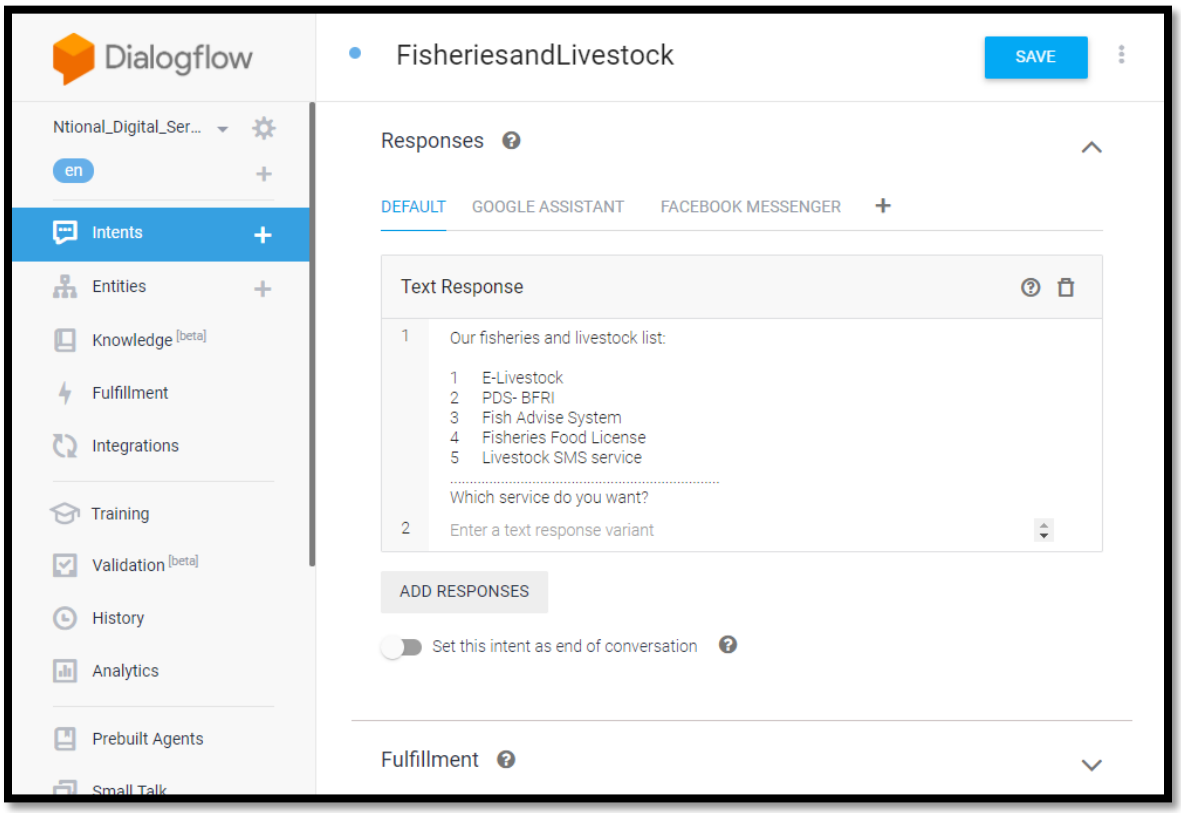
Knowledge [beta]
Fulfillment
Integrations
Training
Validation [beta]
History
Analytics
Prebuilt Agents
Small Talk
Training phrases
Search training phra
Add user expression
How many fisheries and livestock services are there?
I want to know about fisheries and livestock
Tell me about fisheries and livestock
Describe fisheries and livestock
Action and parameters
Enter action name
REQUIRED
PARAMETER NAME
ENTITY
VALUE
IS LIST
Fisheries
@Fisheries
$Fisheries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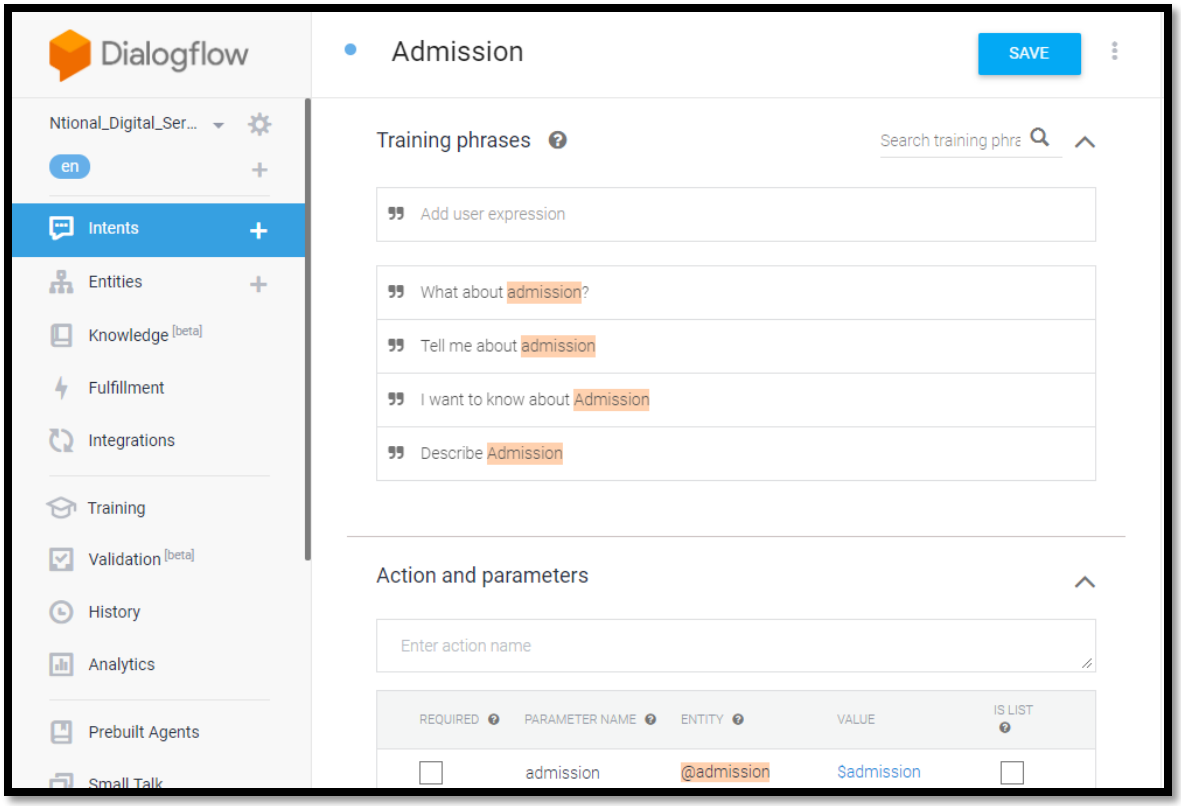
Prebuilt Agents
Small Talk
Responses
DEFAULT
GOOGLE ASSISTANT
FACEBOOK MESSENGER
Text Response
1
Our fisheries and livestock list:
1 E-Livestock
2 PDS- BFRI
3 Fish Advise System
4 Fisheries Food License
5 Livestock SMS service
Which service do you want?
2
Enter a text response variant
ADD RESPONSES
Set this intent as end of conversation
Fulfillment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Small Talk
Training phrases
Search training phra
Add user expression
What about admission?
Tell me about admission
I want to know about Admission
Describe Admission
Action and parameters
Enter action name
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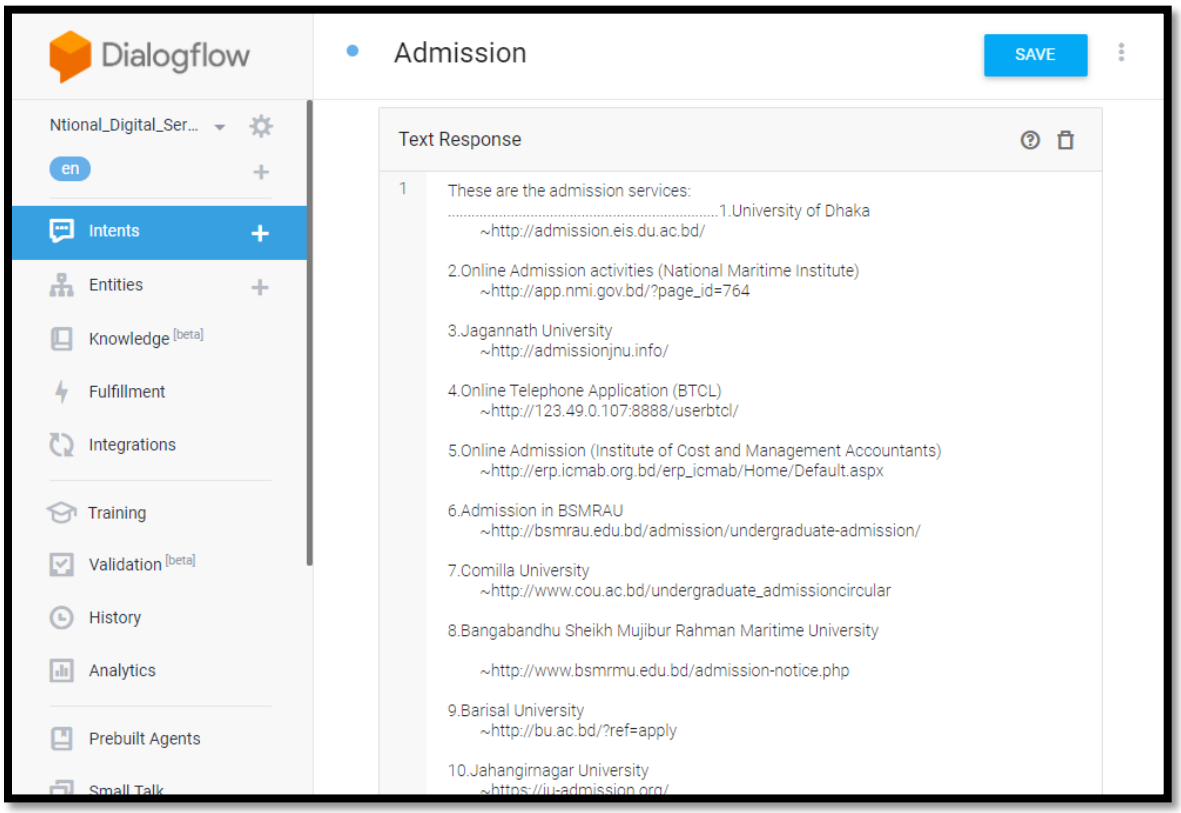
admission
@admission
$admission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Small Talk
Text Response
1
These are the admission services:
.....1.University of Dhaka
~http://admission.eis.du.ac.bd/
2.Online Admission activities (National Maritime Institute)
~http://app.nmi.gov.bd/?page_id=764
3.Jagannath University
~http://admissionjnu.info/
4.Online Telephone Application (BTCL)
~http://123.49.0.107:8888/userbtcl/
5.Online Admission (Institute of Cost and Management Accountants)
~http://erp.icmab.org.bd/erp_icmab/Home/Default.aspx
6.Admission in BSMRAU
~http://bsmrau.edu.bd/admission/undergraduate-admission/
7.Comilla University
~http://www.cou.ac.bd/undergraduate_admissioncircular
8.Bangabandhu Sheikh Mujibur Rahman Maritime University
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9.Barisal University
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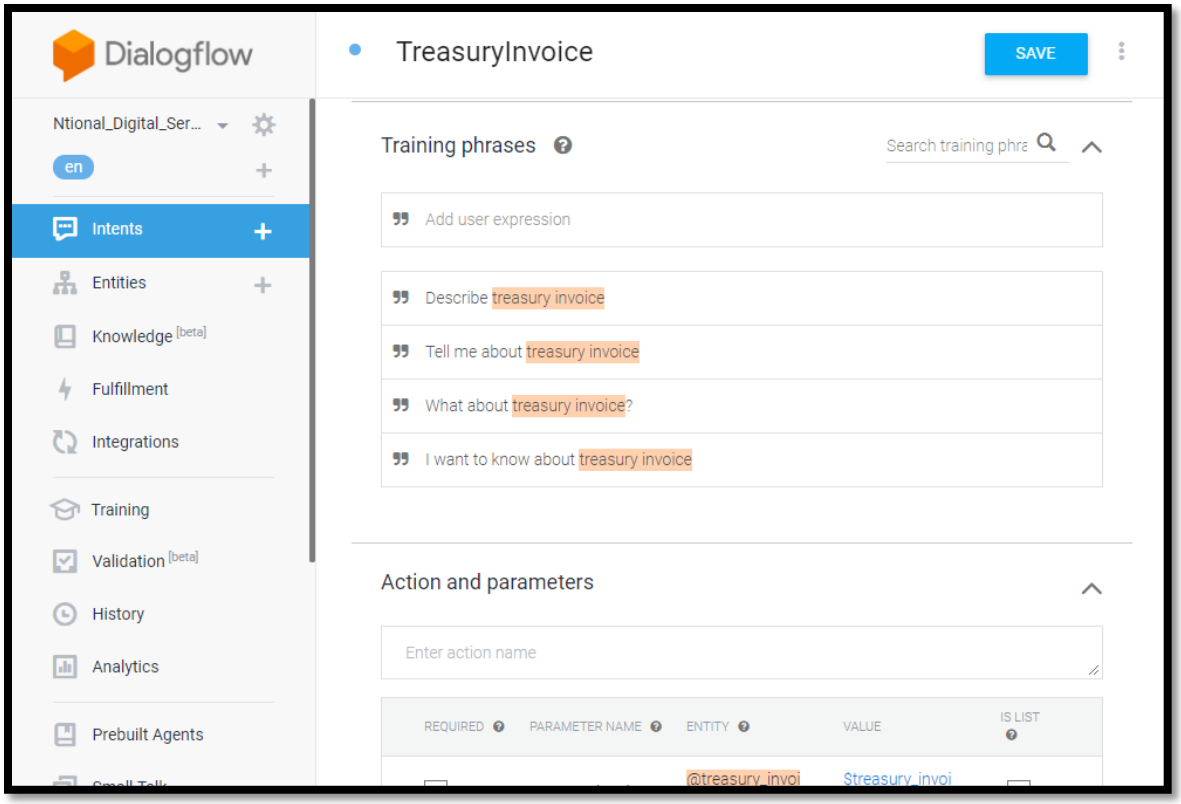
10.Jahangirnagar University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Tell me about treasury invoice
What about treasury invoice?
I want to know about treasury invoice
Action and parameters
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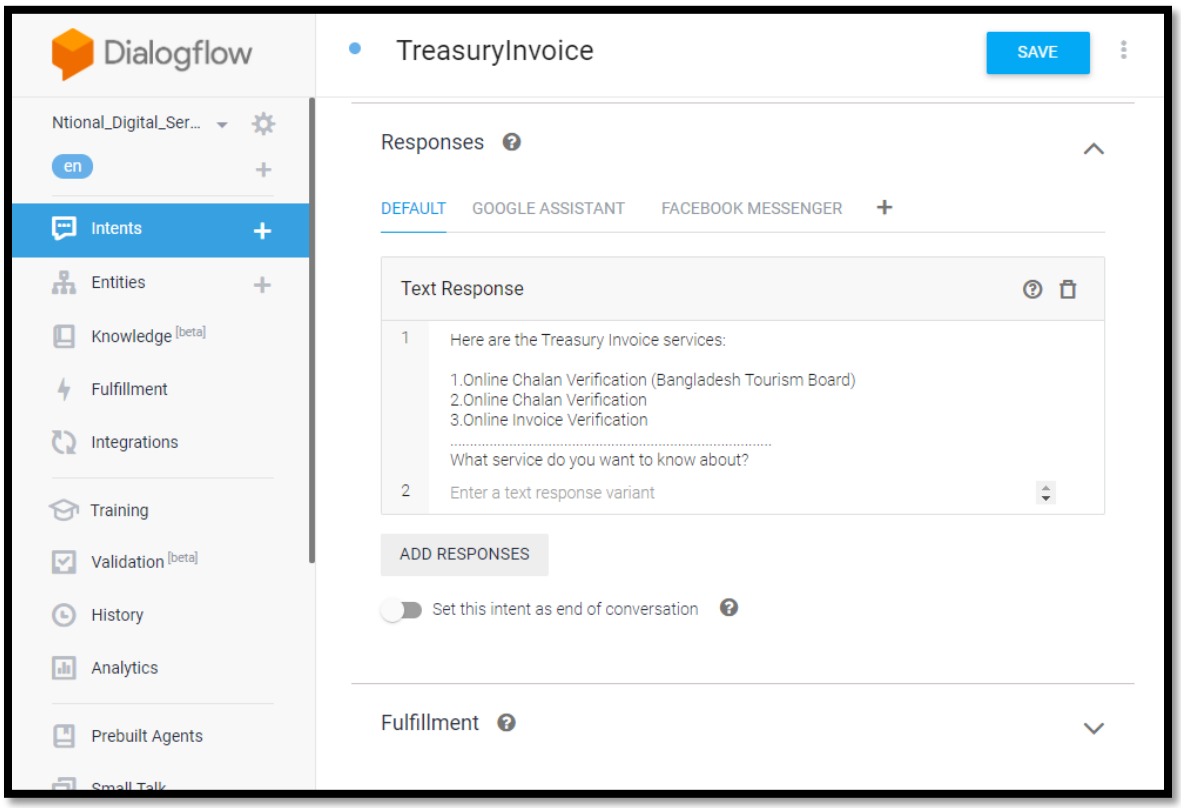
Streasury_invoi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History
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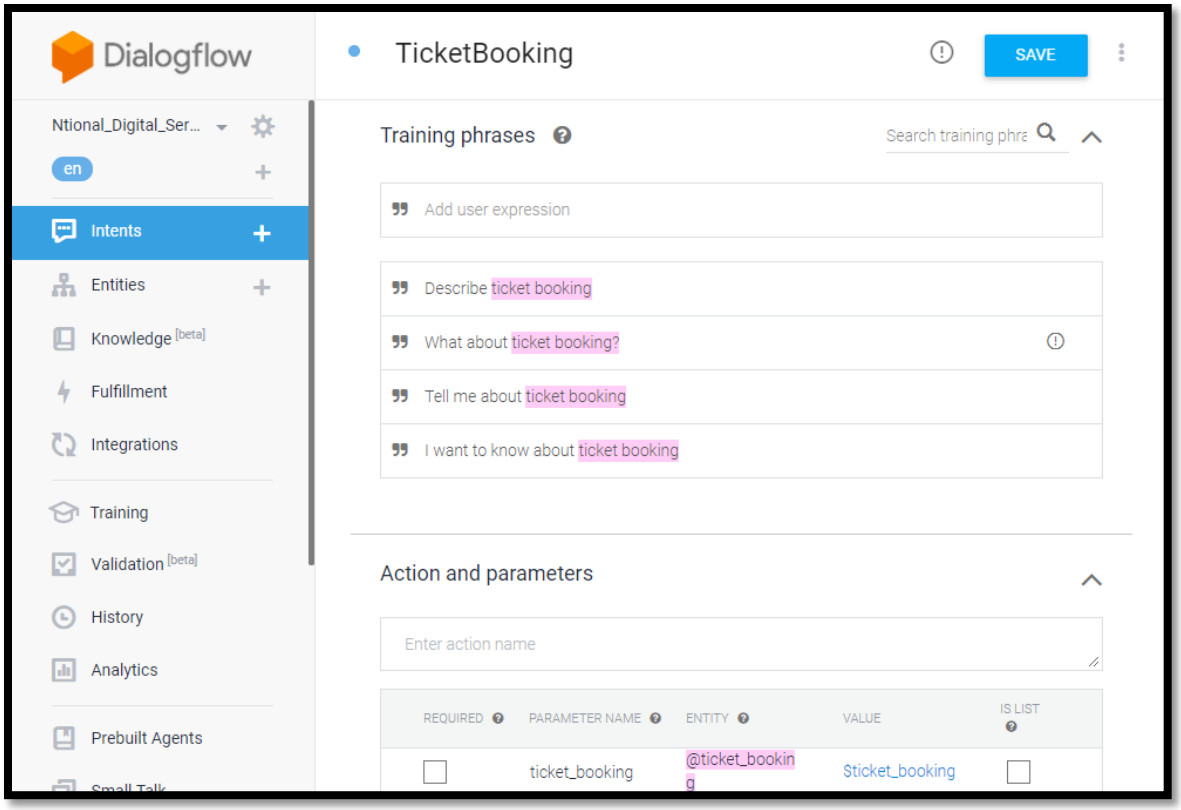
Prebuilt Agents
Responses
DEFAULT
GOOGLE ASSISTANT
FACEBOOK MESSENGER
Text Response
1
Here are the Treasury Invoice services:
1.Online Chalan Verification (Bangladesh Tourism Board)
2.Online Chalan Verification
3.Online Invoice Verification
What service do you want to know about?
2
Enter a text response variant
ADD RESPONSES
Set this intent as end of conversation
Fulfillment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Describe ticket booking
What about ticket booking?
Tell me about ticket booking
I want to know about ticket booking
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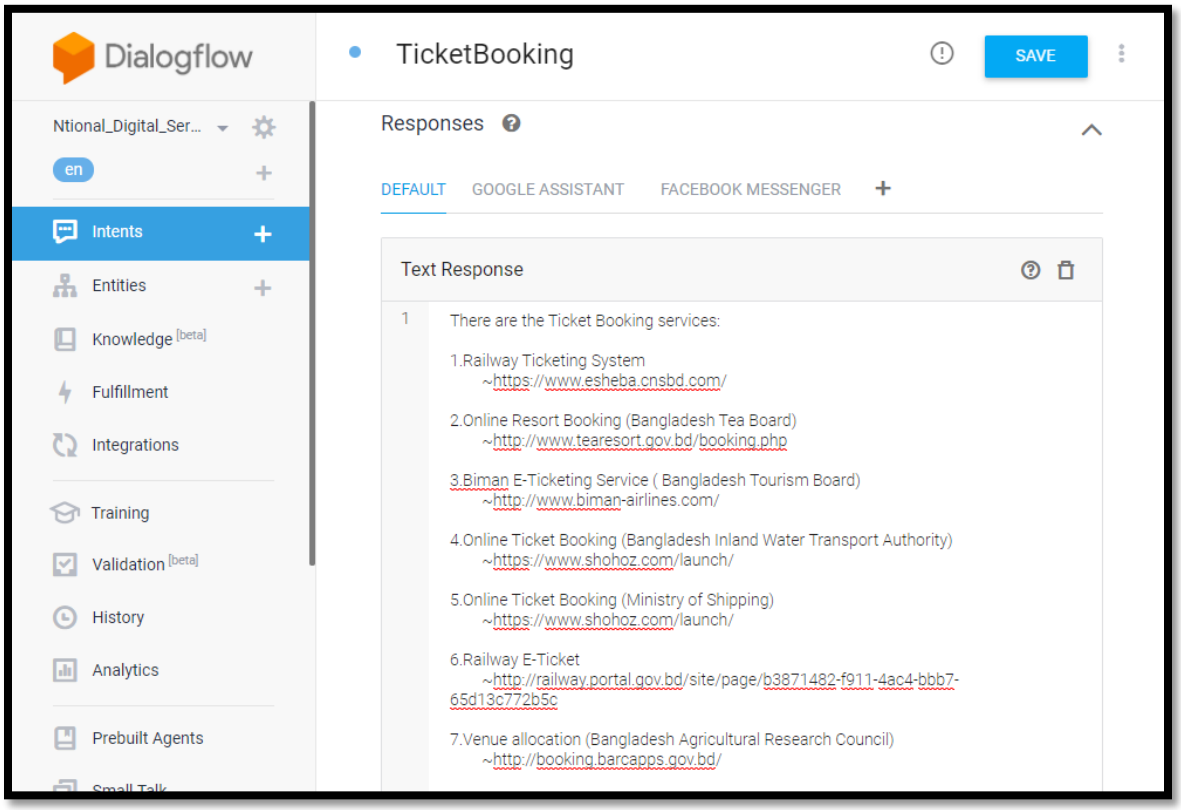
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Validation [beta]
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Analytics
Prebuilt Agents
Responses
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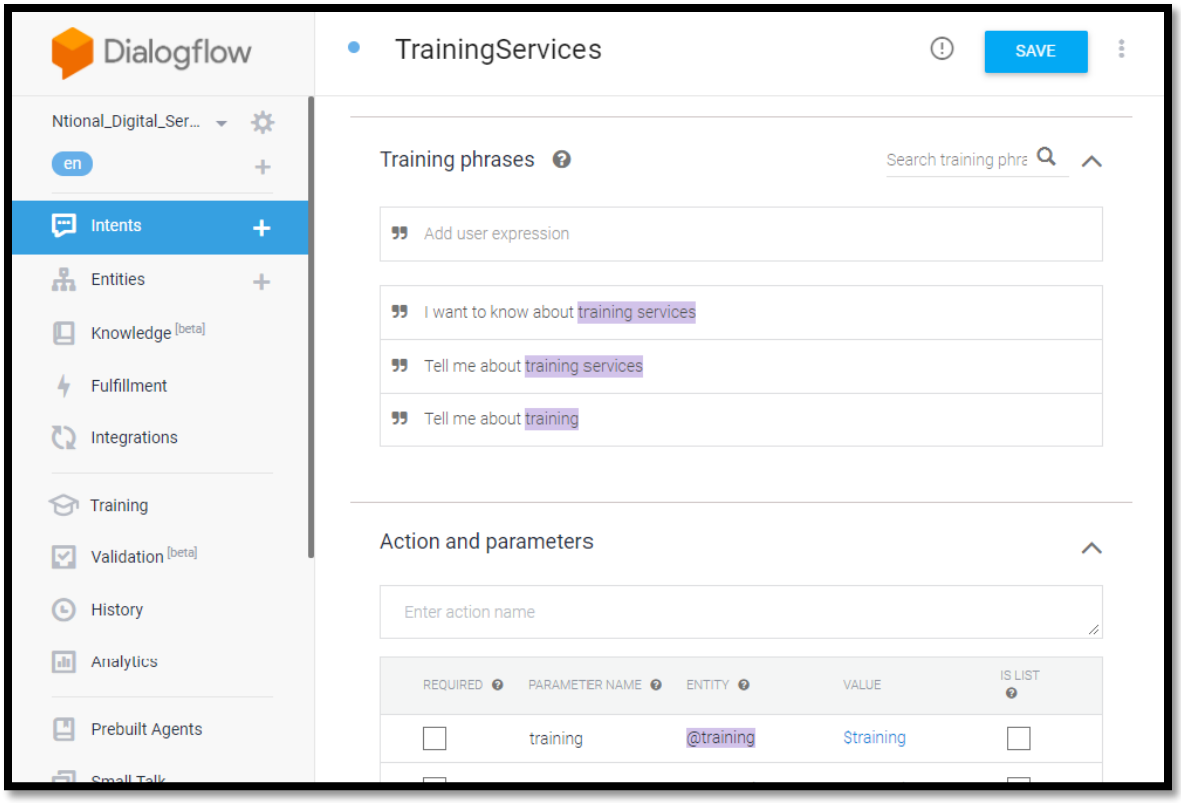
GOOGLE ASSISTANT
FACEBOOK MESSENGER
Text Response
1
There are the Ticket Booking services:
1.Railway Ticketing System
~https://www.esheba.cnsbd.com/
2.Online Resort Booking (Bangladesh Tea Board)
~http://www.tearesort.gov.bd/booking.php
3.Biman E-Ticketing Service (Bangladesh Tourism Board)
~http://www.biman-airlines.com/
4.Online Ticket Booking (Bangladesh Inland Water Transport Authority)
~https://www.shohoz.com/launch/
5.Online Ticket Booking (Ministry of Shipping)
~https://www.shohoz.com/launch/
6.Railway E-Ticket
~http://railway.portal.gov.bd/site/page/b3871482-f911-4ac4-bbb7-65d13c772b5c
7.Venue allocation (Bangladesh Agricultural Research Council)
~http://booking.barcapps.gov.bd/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Tell me about training services
Tell me about training
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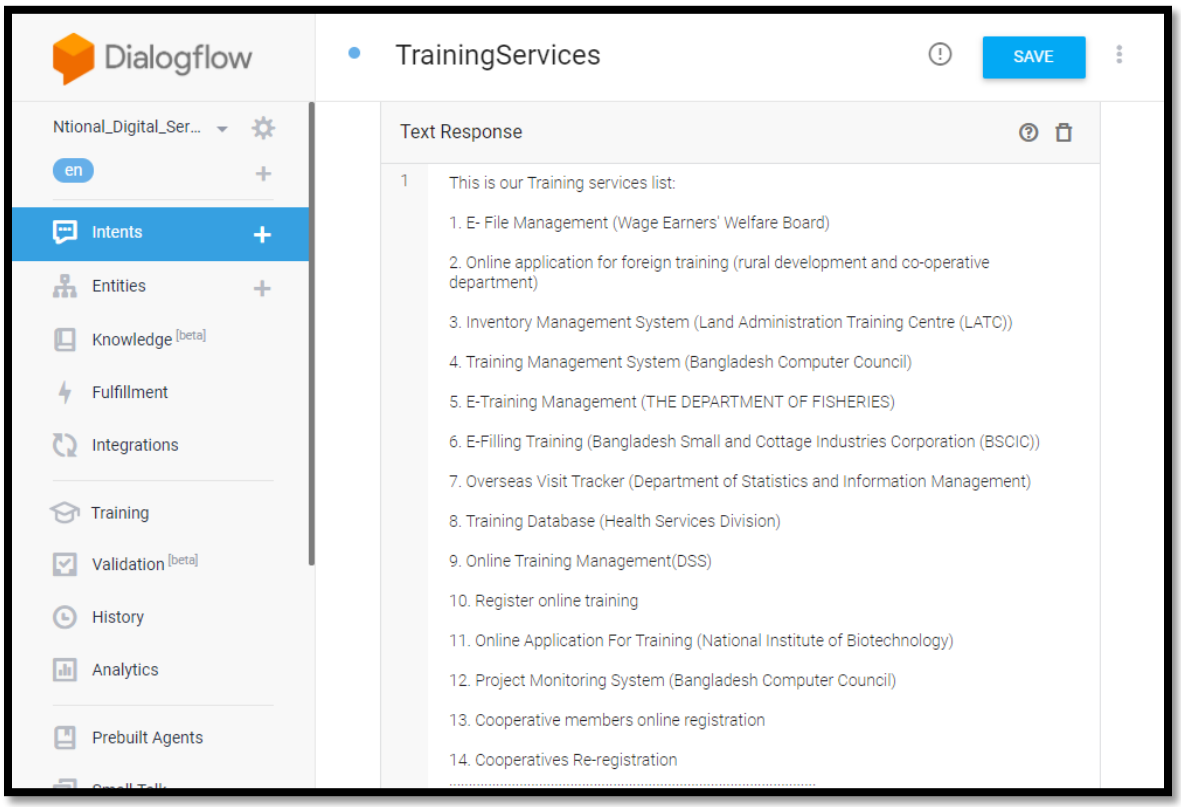
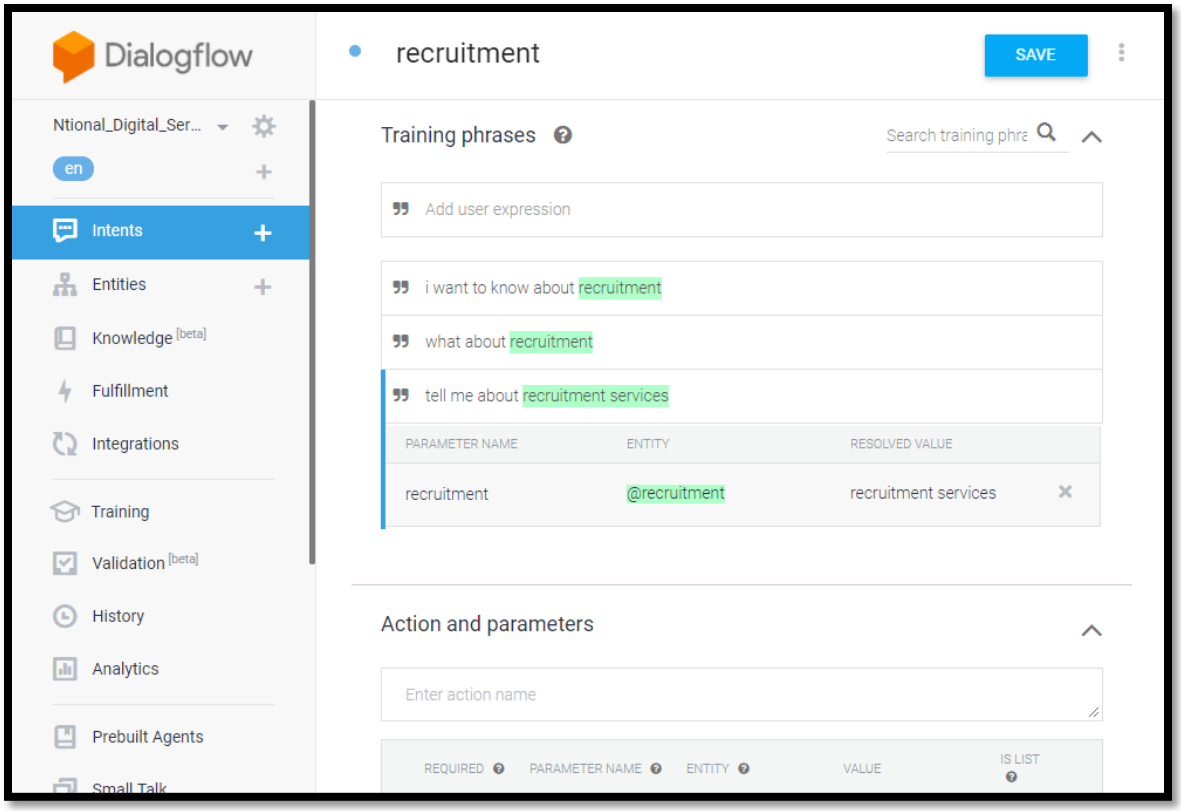
Enter action name
REQUIRED
PARAMETER NAME
ENTITY
VALUE
IS LIST
training
@training
$training


Dialogflow
TrainingServices
SAVE
Ntional_Digital_Ser...
en
Intents
Entities
Knowledge [beta]
Fulfillment
Integrations
Training
Validation [beta]
History
Analytics
Prebuilt Agents
Text Response
1
This is our Training services list:
1. E- File Management (Wage Earners' Welfare Board)
2. Online application for foreign training (rural development and co-operative department)
3. Inventory Management System (Land Administration Training Centre (LATC))
4. Training Management System (Bangladesh Computer Council)
5. E-Training Management (THE DEPARTMENT OF FISHERIES)
6. E-Filling Training (Bangladesh Small and Cottage Industries Corporation (BSCIC))
7. Overseas Visit Tracker (Department of Statistics and Information Management)
8. Training Database (Health Services Division)
9. Online Training Management(DSS)
10. Register online training
11. Online Application For Training (National Institute of Biotechnology)
12. Project Monitoring System (Bangladesh Computer Council)
13. Cooperative members online registration
14. Cooperatives Re-registration


Dialogflow
recruitment
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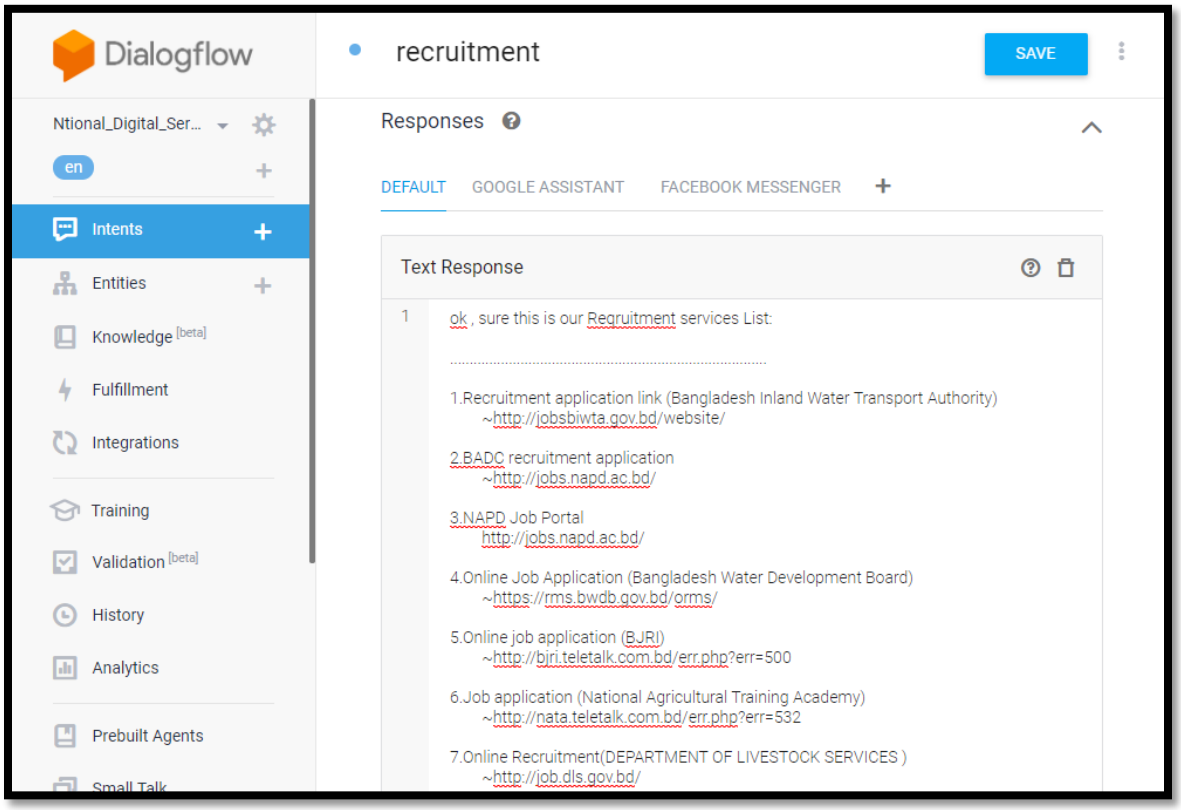
Intents
Entities
Knowledge [beta]
Fulfillment
Integrations
Training
Validation [beta]
History
Analytics
Prebuilt Agents
Small Talk
Training phrases
Search training phra
Add user expression
i want to know about recruitment
what about recruitment
tell me about recruitment services
PARAMETER NAME
ENTITY
RESOLVED VALUE
recruitment
@recruitment
recruitment services
Action and parameters
Enter action name
REQUIRED
PARAMETER NAME
ENTITY
VALUE
IS LIST


Dialogflow
recruitment
SAVE
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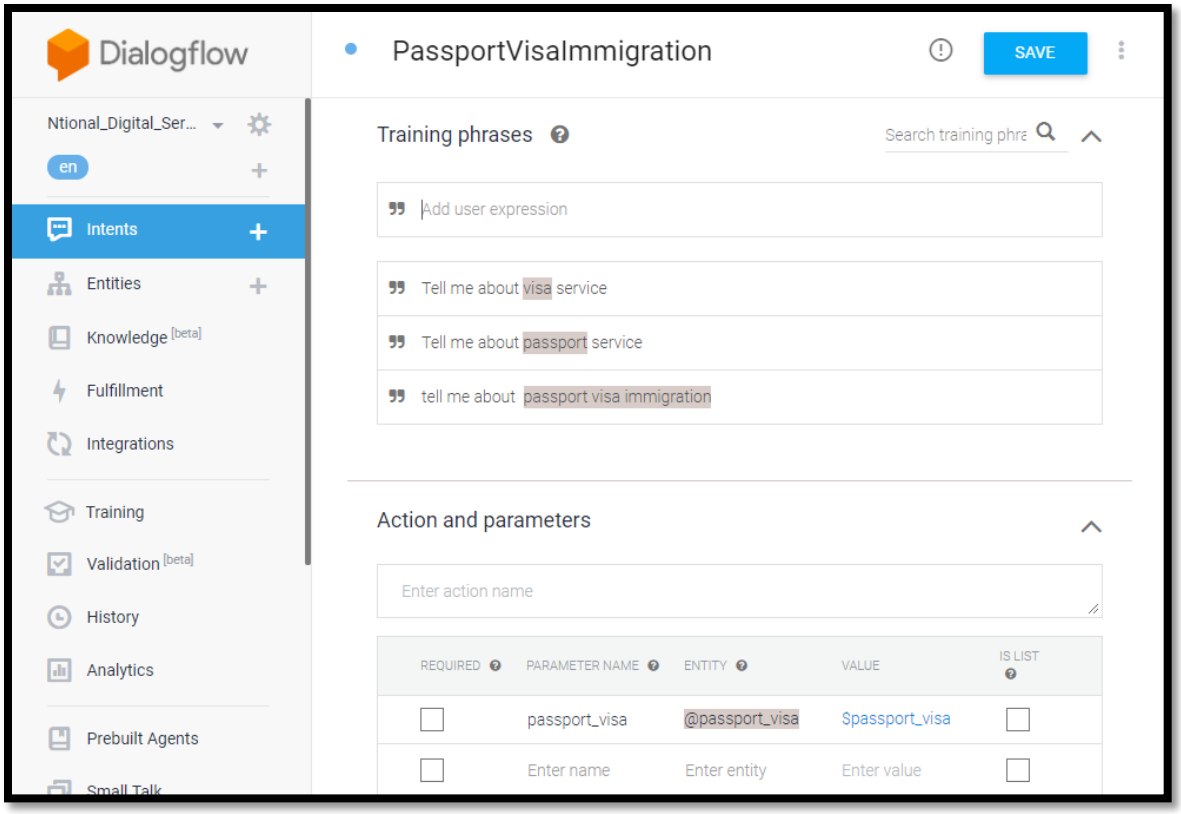
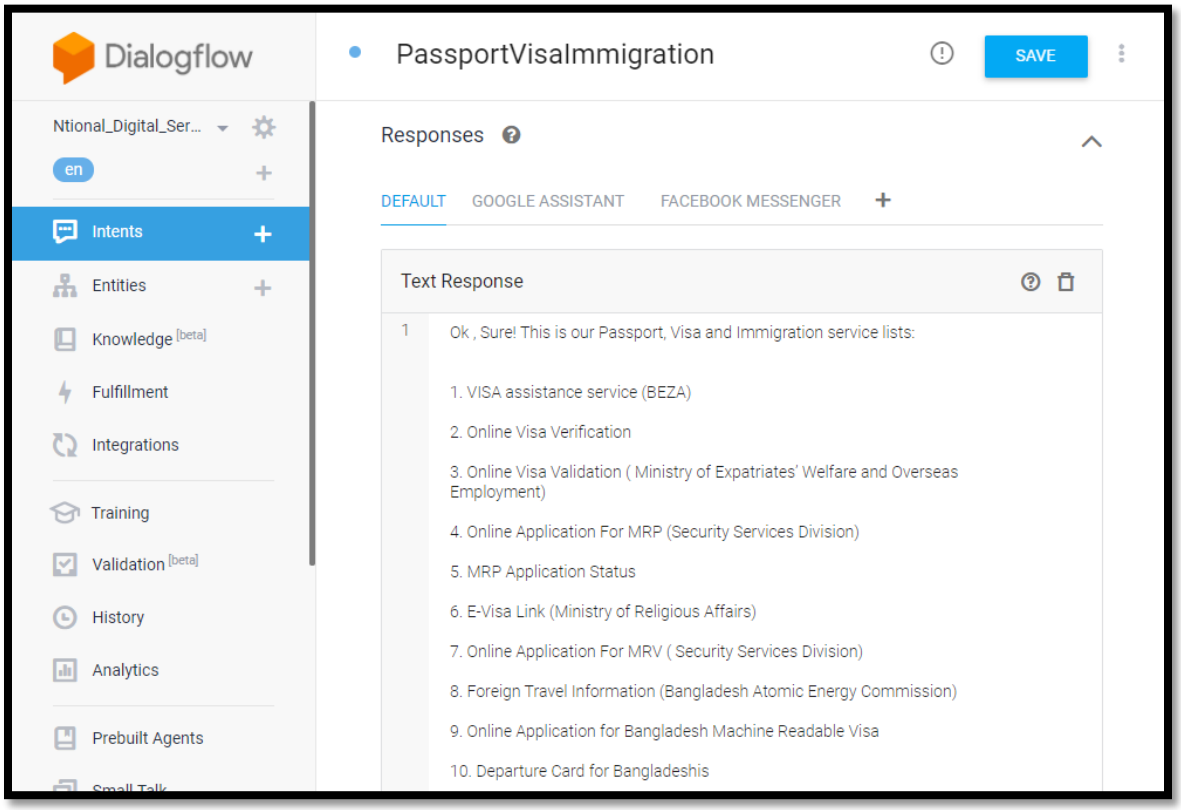
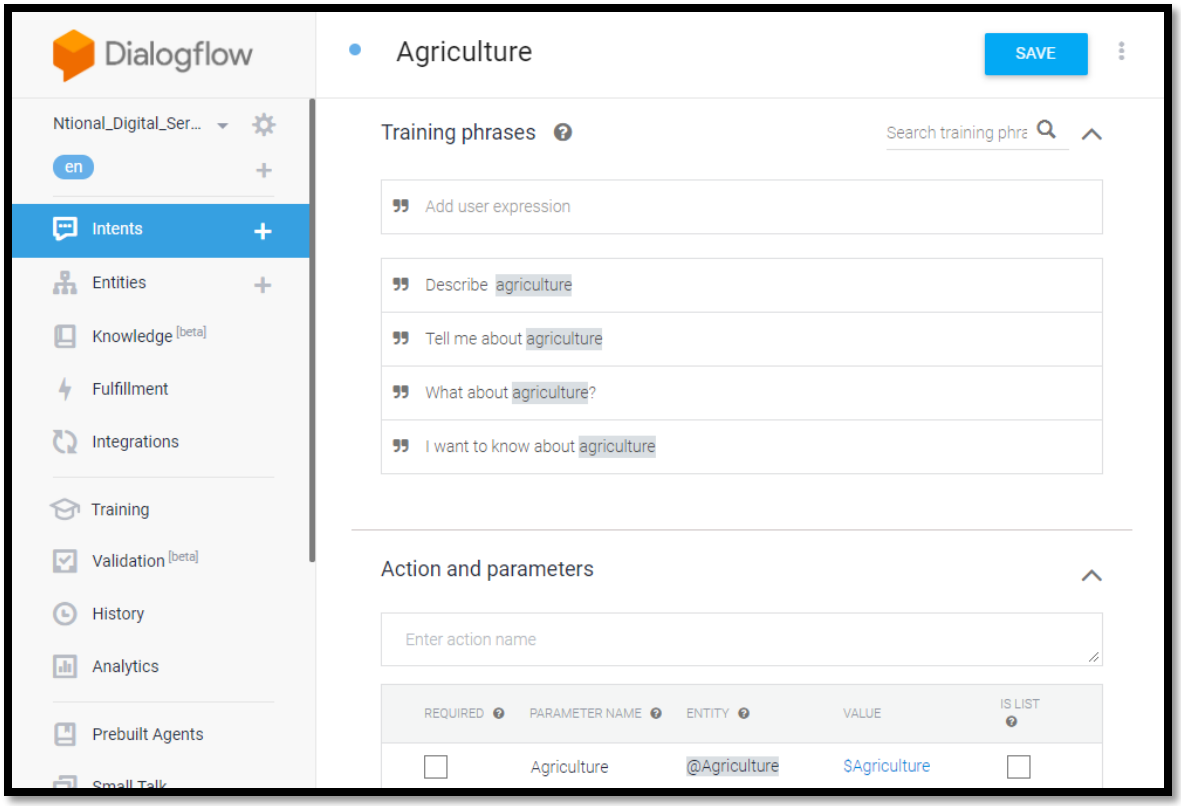
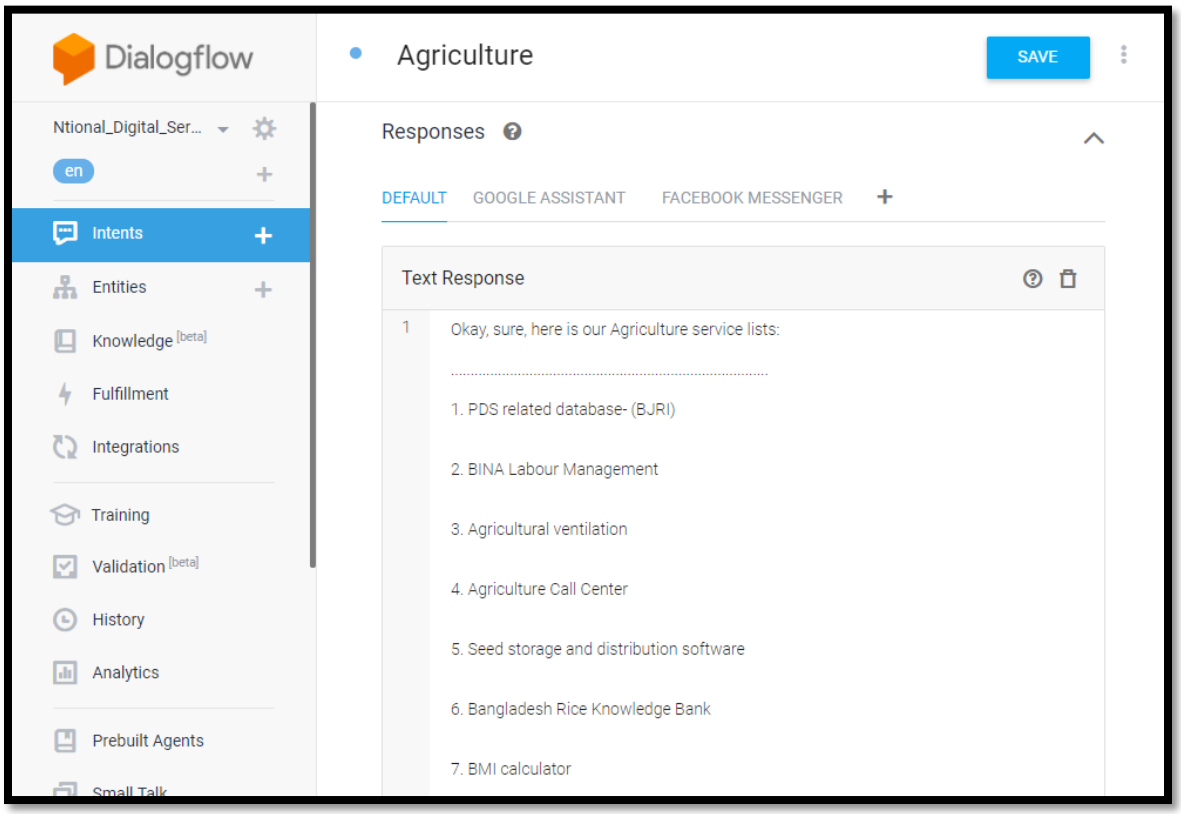
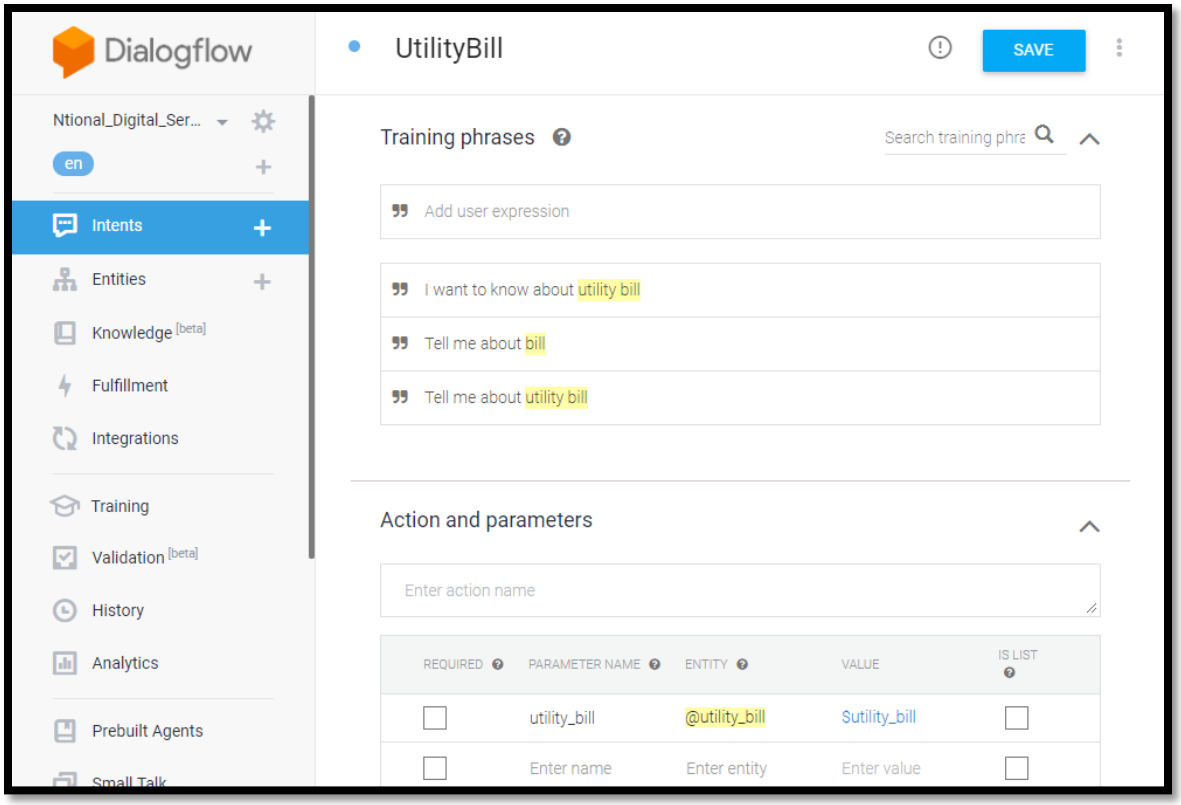
Intents
Entities
Knowledge [beta]
Fulfillment
Integrations
Training
Validation [beta]
History
Analytics
Prebuilt Agents
Small Talk
Responses
DEFAULT
GOOGLE ASSISTANT
FACEBOOK MESSENGER
Text Response
1
ok , sure this is our Regruitment services List:
1.Recruitment application link (Bangladesh Inland Water Transport Authority)
~http://jobsbiwta.gov.bd/website/
2.BADC recruitment application
~http://jobs.napd.ac.bd/
3.NAPD Job Portal
http://jobs.napd.ac.bd/
4.Online Job Application (Bangladesh Water Development Board)
~https://rms.bwdb.gov.bd/orms/
5.Online job application (BJRI)
~http://bjri.teletalk.com.bd/err.php?err=500
6.Job application (National Agricultural Training Academy)
~http://nata.teletalk.com.bd/err.php?err=532
7.Online Recruitment(DEPARTMENT OF LIVESTOCK SERVICES)
~http://job.dls.gov.bd/

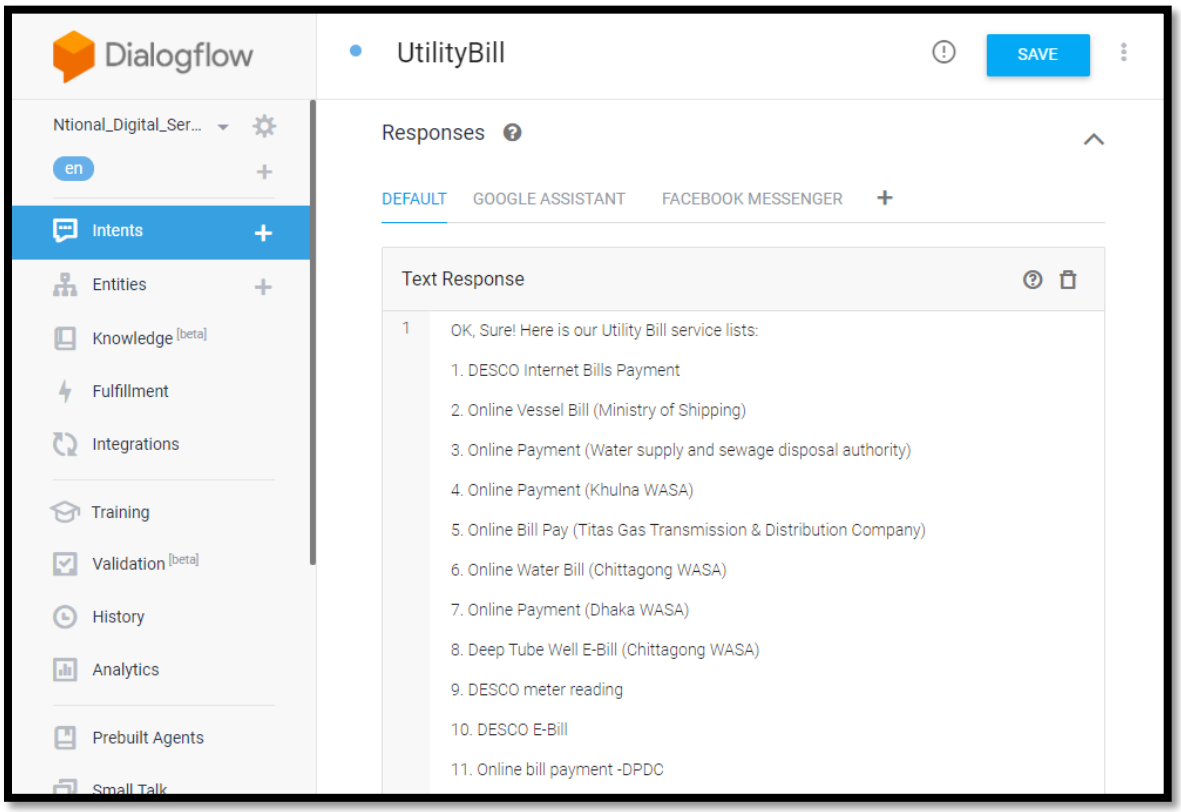

Dialogflow
PassportVisaImmigration
SAVE
Ntional_Digital_Ser...
en
Intents
Entities
Knowledge [beta]
Fulfillment
Integrations
Training
Validation [beta]
History
Analytics
Prebuilt Agents
Training phrases
Search training phra
Add user expression
Tell me about visa service
Tell me about passport service
tell me about passport visa immigration
Action and parameters
Enter action name
REQUIRED
PARAMETER NAME
ENTITY
VALUE
IS LIST
passport_visa
@passport_visa
$passport_visa
Enter name
Enter entity
Enter value

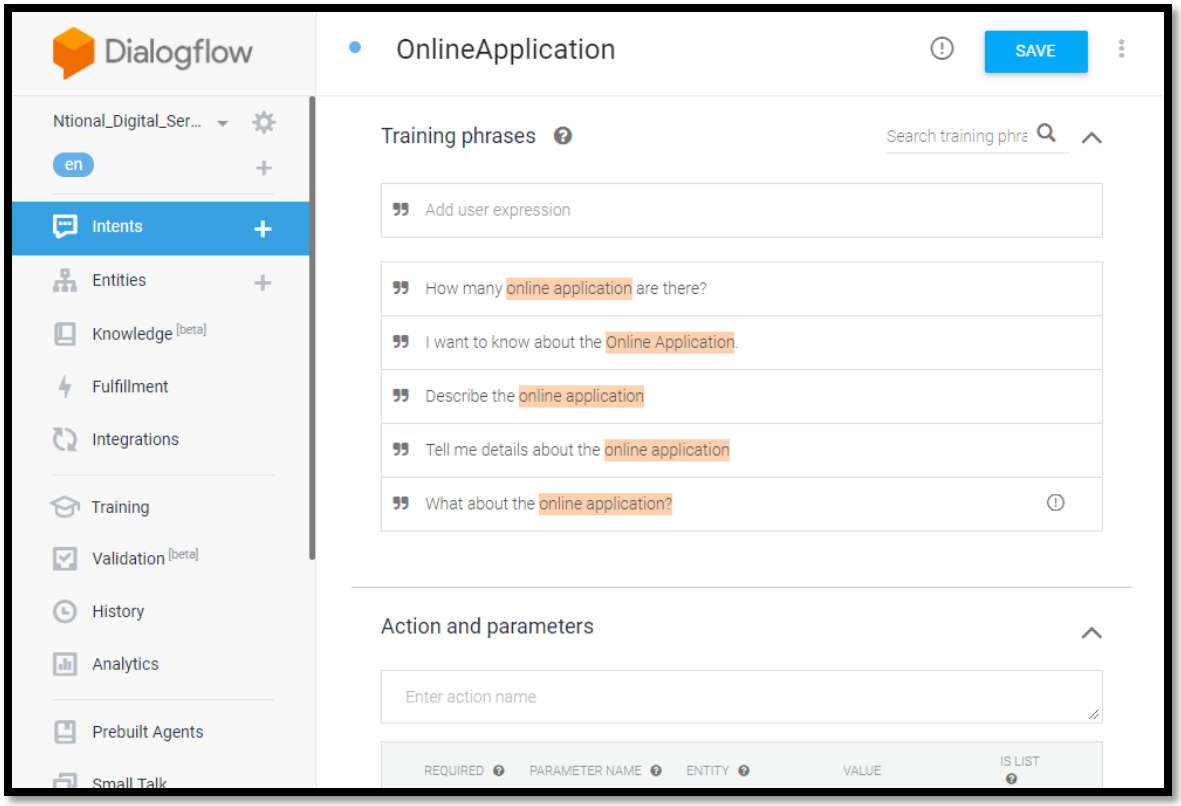

Dialogflow
PassportVisaImmigration
SAVE
Ntional_Digital_Ser...
en
Intents
Entities
Knowledge [beta]
Fulfillment
Integrations
Training
Validation [beta]
History
Analytics
Prebuilt Agents
Responses
DEFAULT
GOOGLE ASSISTANT
FACEBOOK MESSENGER
Text Response
1
Ok , Sure! This is our Passport, Visa and Immigration service lists:
1. VISA assistance service (BEZA)
2. Online Visa Verification
3. Online Visa Validation (Ministry of Expatriates' Welfare and Overseas Employment)
4. Online Application For MRP (Security Services Division)
5. MRP Application Status
6. E-Visa Link (Ministry of Religious Affairs)
7. Online Application For MRV (Security Services Division)
8. Foreign Travel Information (Bangladesh Atomic Energy Commission)
9. Online Application for Bangladesh Machine Readable Visa
10. Departure Card for Bangladeshis

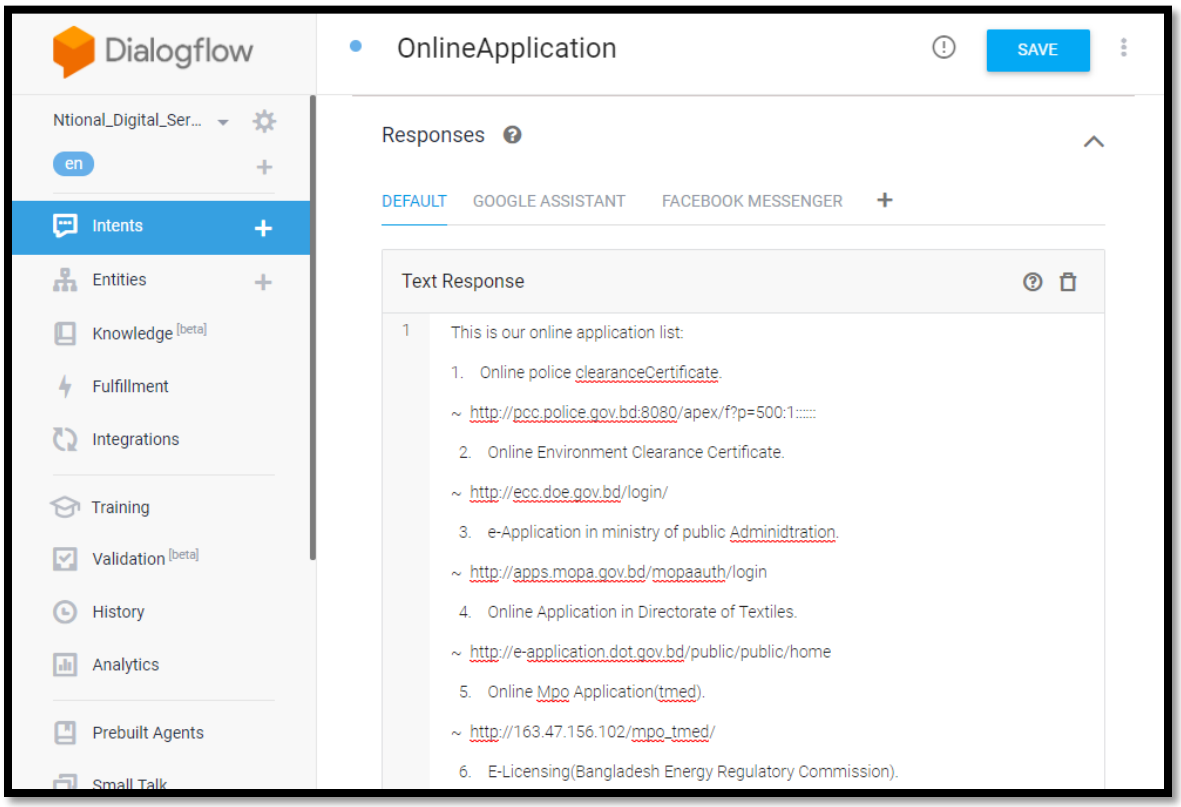

Dialogflow
Agriculture
SAVE
Ntional_Digital_Ser...
en
Intents
Entities
Knowledge [beta]
Fulfillment
Integrations
Training
Validation [beta]
History
Analytics
Prebuilt Agents
Training phrases
Search training phra
Add user expression
Describe agriculture
Tell me about agriculture
What about agriculture?
I want to know about agriculture
Action and parameters
Enter action name
REQUIRED
PARAMETER NAME
ENTITY
VALUE
IS LIST
Agriculture
@Agriculture
$Agriculture


Dialogflow
Agriculture
SAVE
Ntional_Digital_Ser...
en
Intents
Entities
Knowledge [beta]
Fulfillment
Integrations
Training
Validation [beta]
History
Analytics
Prebuilt Agents
Responses
DEFAULT
GOOGLE ASSISTANT
FACEBOOK MESSENGER
Text Response
1
Okay, sure, here is our Agriculture service lists:
1. PDS related database- (BJRI)
2. BINA Labour Management
3. Agricultural ventilation
4. Agriculture Call Center
5. Seed storage and distribution software
6. Bangladesh Rice Knowledge Bank
7. BMI calculator


Dialogflow
UtilityBill
SAVE
Ntional_Digital_Ser...
en
Intents
Entities
Knowledge [beta]
Fulfillment
Integrations
Training
Validation [beta]
History
Analytics
Prebuilt Agents
Small Talk
Training phrases
Search training phra
Add user expression
I want to know about utility bill
Tell me about bill
Tell me about utility bill
Action and parameters
Enter action name
REQUIRED
PARAMETER NAME
ENTITY
VALUE
IS LIST
utility_bill
@utility_bill
$utility_bill
Enter name
Enter entity
Enter value


Dialogflow
UtilityBill
SAVE
Ntional_Digital_Ser...
en
Intents
Entities
Knowledge [beta]
Fulfillment
Integrations
Training
Validation [beta]
History
Analytics
Prebuilt Agents
Small Talk
Responses
DEFAULT
GOOGLE ASSISTANT
FACEBOOK MESSENGER
Text Response
1
OK, Sure! Here is our Utility Bill service lists:
1. DESCO Internet Bills Payment
2. Online Vessel Bill (Ministry of Shipping)
3. Online Payment (Water supply and sewage disposal authority)
4. Online Payment (Khulna WASA)
5. Online Bill Pay (Titas Gas Transmission & Distribution Company)
6. Online Water Bill (Chittagong WASA)
7. Online Payment (Dhaka WASA)
8. Deep Tube Well E-Bill (Chittagong WASA)
9. DESCO meter reading
10. DESCO E-Bill
11. Online bill payment -DPDC


Dialogflow
OnlineApplication
SAVE
Ntional_Digital_Ser...
en
Intents
Entities
Knowledge [beta]
Fulfillment
Integrations
Training
Validation [beta]
History
Analytics
Prebuilt Agents
Small Talk
Training phrases
Search training phra
Add user expression
How many online application are there?
I want to know about the Online Application.
Describe the online application
Tell me details about the online application
What about the online application?
Action and parameters
Enter action name
REQUIRED
PARAMETER NAME
ENTITY
VALUE
IS LIST


Dialogflow
OnlineApplication
SAVE
Ntional_Digital_Ser...
en
Intents
Entities
Knowledge [beta]
Fulfillment
Integrations
Training
Validation [beta]
History
Analytics
Prebuilt Agents
Small Talk
Responses
DEFAULT
GOOGLE ASSISTANT
FACEBOOK MESSENGER
Text Response
1
This is our online application list:
1. Online police clearanceCertificate.
~ http://pcc.police.gov.bd:8080/apex/f?p=500:1:::::
2. Online Environment Clearance Certificate.
~ http://ecc.doe.gov.bd/login/
3. e-Application in ministry of public Adminidtration.
~ http://apps.mopa.gov.bd/mopaauth/login
4. Online Application in Directorate of Textiles.
~ http://e-application.dot.gov.bd/public/public/home
5. Online Mpo Application(tmed).
~ http://163.47.156.102/mpo_tmed/
6. E-Licensing(Bangladesh Energy Regulatory Commission).

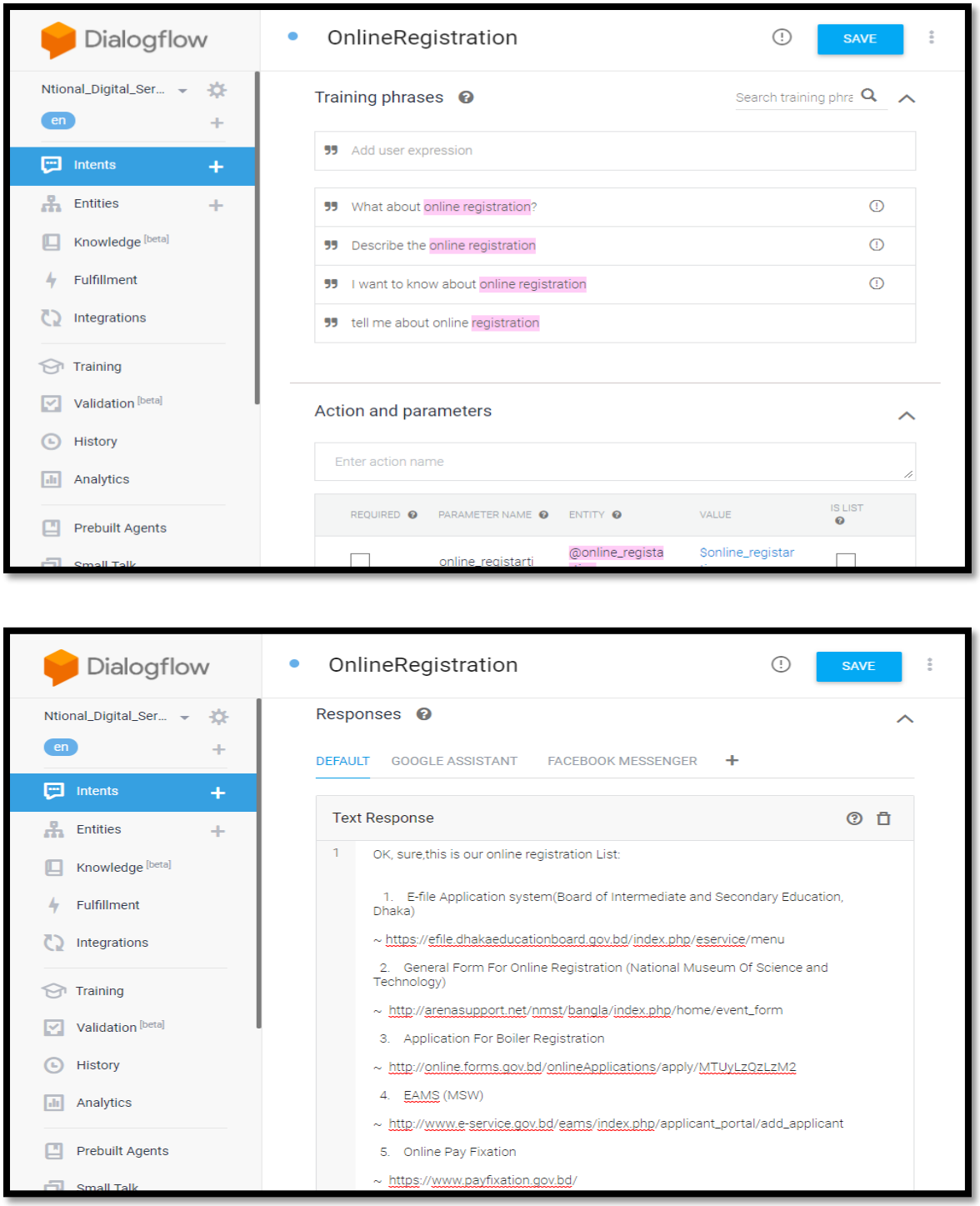


Figure: 3.8 Data Training of 11 intents

I trained the data that I have collected from the national portal of Bangladesh. And I created 11 intents and the same number of entities.

The list of intents that I have created:

1. Fishers and Livestock.
2. Admission.
3. Treasury Invoice.
4. Ticket Booking and purchase.
5. Training.
6. Recruitment.
7. Passport, visa and Immigration.
8. Agriculture.
9. Utility Bills.
10. Online Application.
11. Online Registration.

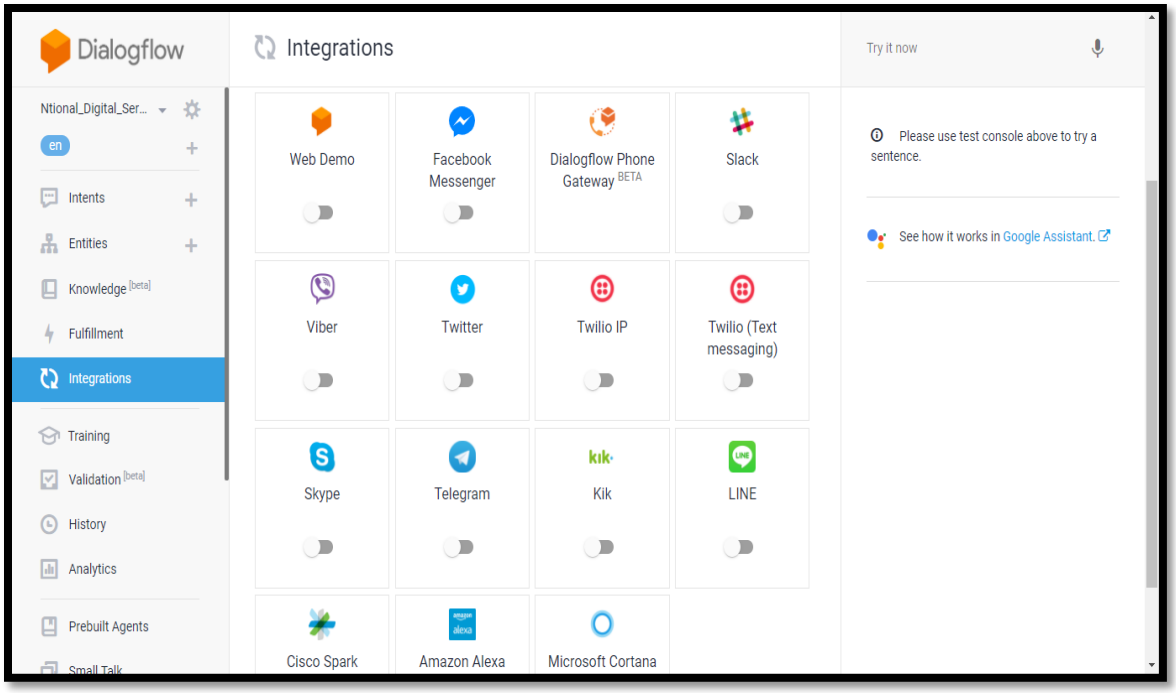
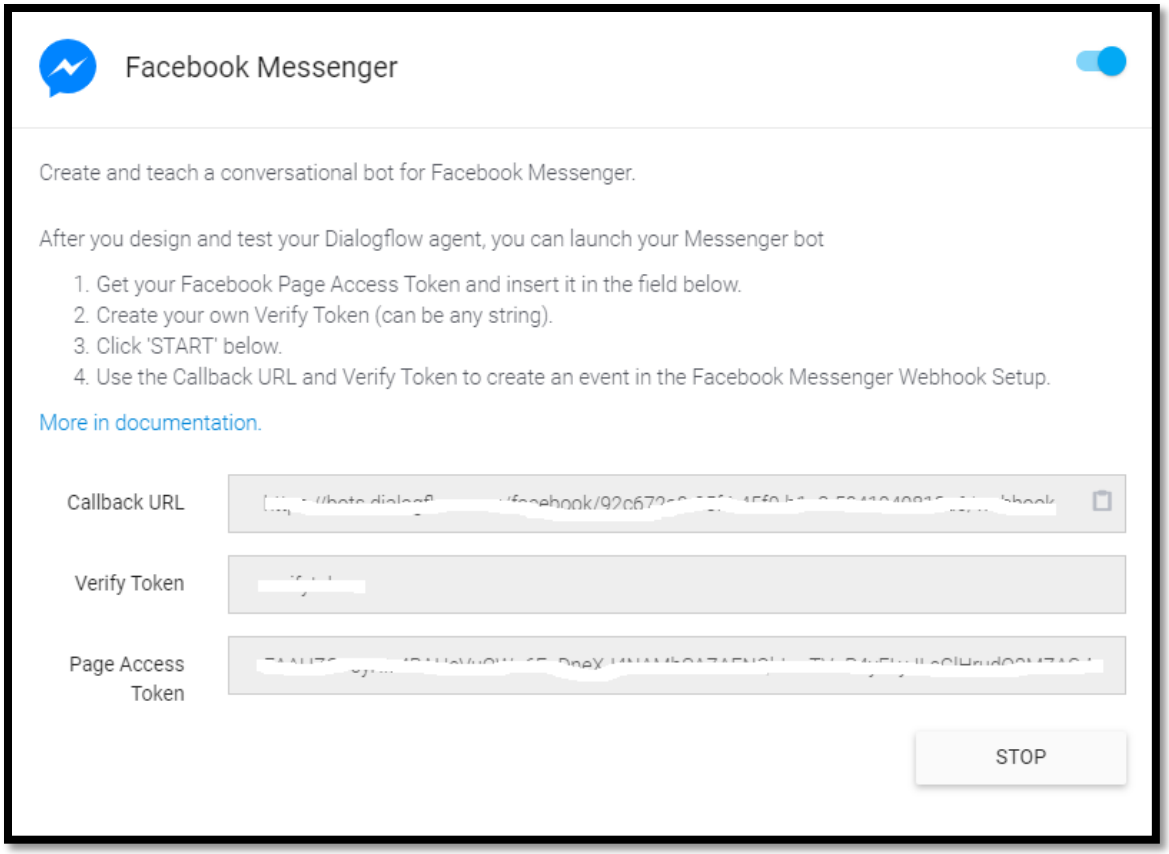
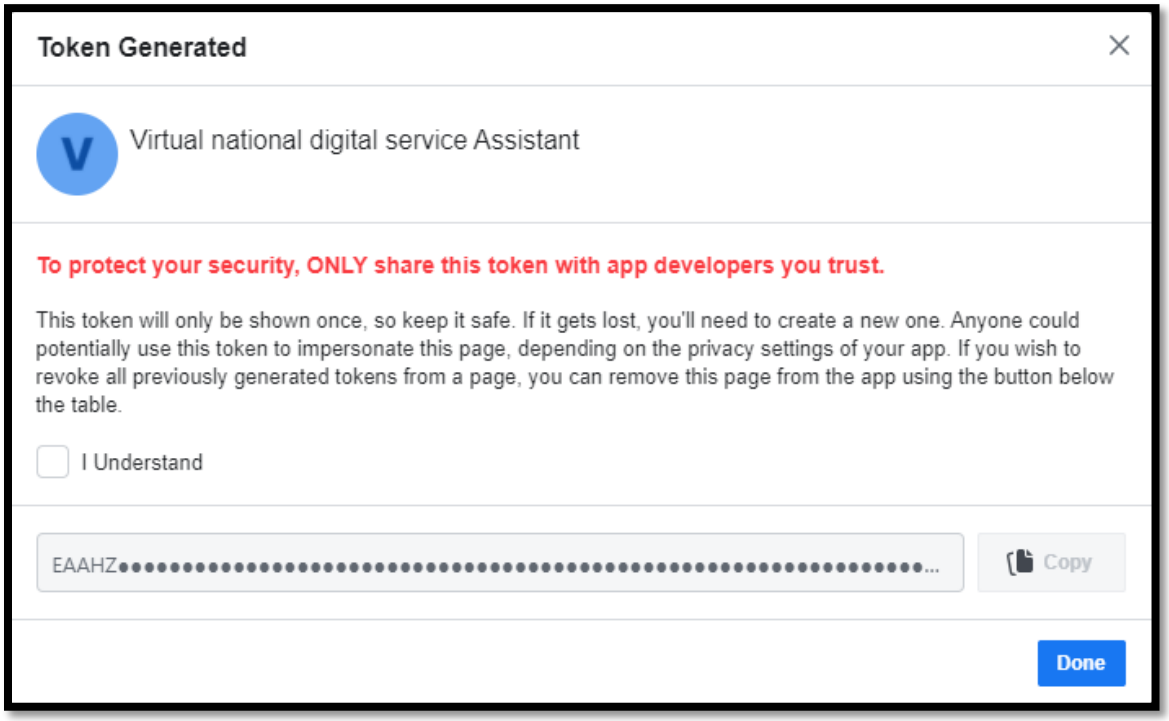


Figure: 3.9 Integration Chatbot in different platform.

After train all of the data in the entities, intents, and small talk this is the high time to integrate my Chatbot on the website or different social sites. Dialogflow considers deploying Chatbot in many platforms like messenger, slack, twitter. Viber. Skype, and so on. I can also use my project as my google assistant.


Facebook Messenger
Create and teach a conversational bot for Facebook Messenger.
After you design and test your Dialogflow agent, you can launch your Messenger bot
1. Get your Facebook Page Access Token and insert it in the field below.
2. Create your own Verify Token (can be any string).
3. Click 'START' below.
4. Use the Callback URL and Verify Token to create an event in the Facebook Messenger Webhook Setup.
More in documentation.
Callback URL
Verify Token
Page Access Token
STOP


Token Generated
Virtual national digital service Assistant
To protect your security, ONLY share this token with app developers you trust.
This token will only be shown once, so keep it safe. If it gets lost, you'll need to create a new one. Anyone could potentially use this token to impersonate this page, depending on the privacy settings of your app. If you wish to revoke all previously generated tokens from a page, you can remove this page from the app using the button below the table.
I Understand
EAAHZ
Copy
Done

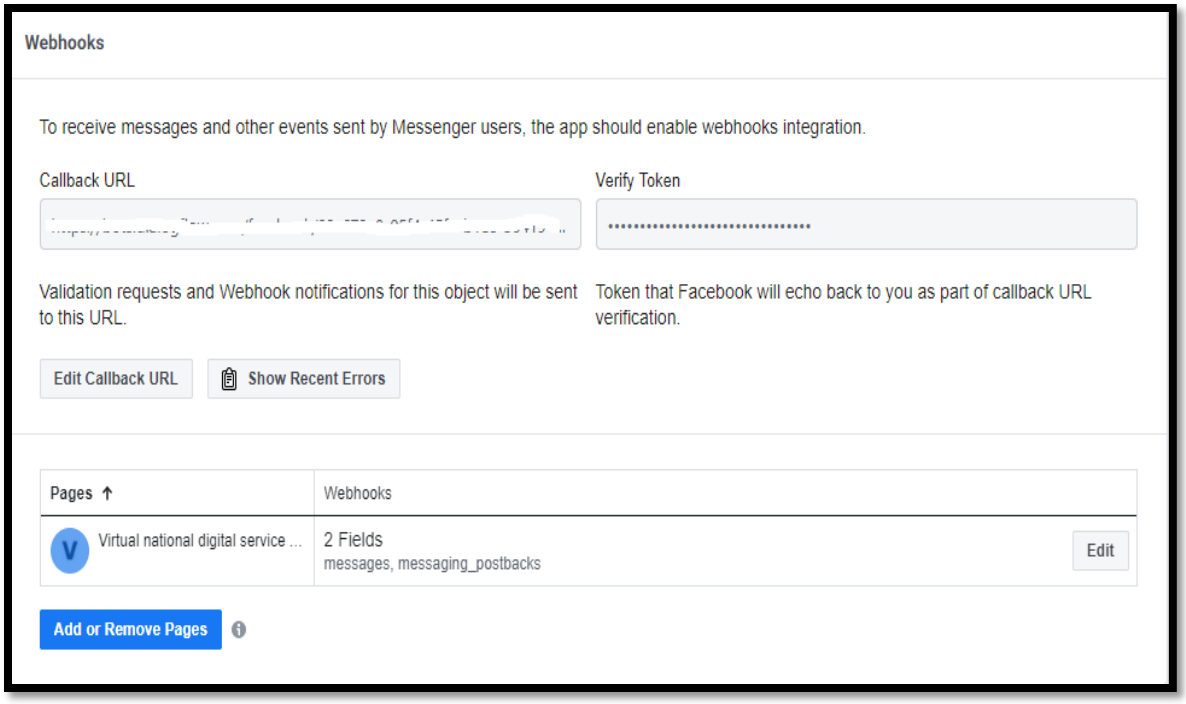


Figure: 3.10 Deploy Chatbot into Facebook messenger.

I want to deploy my Chatbot into the Facebook page. For that, I need Page Access Token that we can get after create the Facebook page. After completing the Facebook page creation, I need to create a Facebook Developers Apps. Then link my Facebook page to Developers Apps that I have created. After that, I get the Page Access token and I need to put this token into the Dialogflow. We can put any string into the field of verifying token. Ant this verifies token need in the webhook.
The next step is I have to create a webhook in the Developer Apps. There I have to put Callback URL and Verify Token that I have got from Dialogflow.
So, after completion of this process, My Chatbot is ready to test.

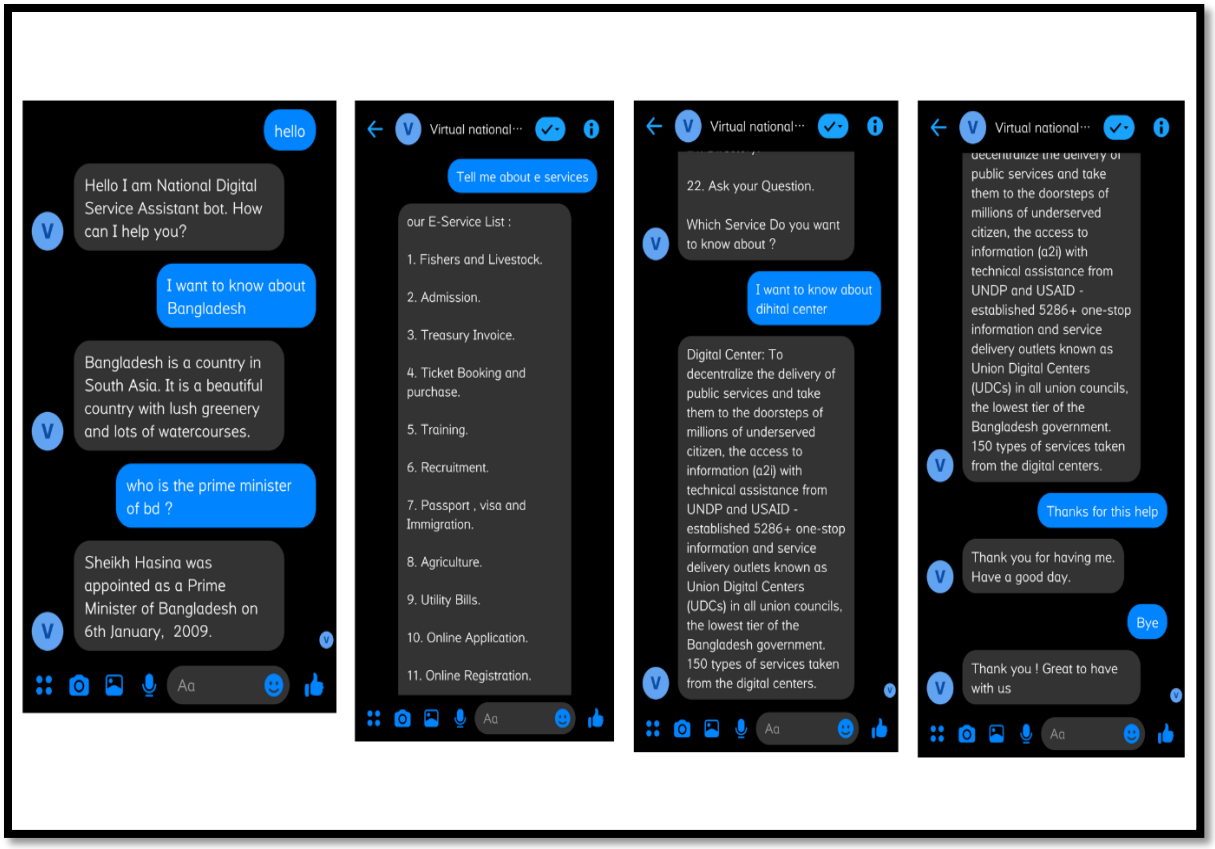


Figure: 3.11 conversation example with Chatbot.

Here is some example of a conversation with my Virtual National Digital Service Assistant. We can see this Chatbot is responded correctly. So I could complete my project successfully.

3.2 Event and Activity:

In seven days, four days I took a shot at my task in the workplace. Consistently I refreshed the undertaking data to the venture administrator and managing director (MD) and attempted to take criticism from them. At last, I can finish my task with the assistance of everybody.

3.3 Challenges:

A virtual assistant is self-employed entities who offer different administrations, for example, specialized, imaginative and managerial help for the customers. They handle a wide range of work remotely either through messages, phone calls, fax or online visit. [7]

The main challenge of a virtual assistant is the lack of AI-based developers, difficulty with delegation. We are trying many platforms to build a virtual assistant but we face many problems like storage problems, API calls, software installation, platform choosing, did not respond correctly and many other things. I had to learn new things to make it happen and dismiss all the difficulties. [7]

When I start my work, I have to face some problems. The huge amount of data is not stored in the firebase. It is one kind of major problem for us and day by day I have overcome it. It is very difficult for us and makes us more challenging. [7]

CHAPTER-4

Competencies and Smart Plan

4.1 Competencies Earned

There are so many applications of AI in the market and Chatbot is one of them. So many frameworks are available in the online to build Chatbot. It is challenging to build a good and efficient Chatbot because of the different framework has different efficiency. There need to be skilled in machine learning, NLP, webhook, API, etc. So considering all the situations I have prepared myself to build a virtual assistant. [8]

So, competition is the way that we can know about other skills and compare my own skills to others so that I can improve my skills. This is a very effective way to do the hard work and inspiring to achieve my goal. This is a universal truth that patience and hard work is the key to success.

4.2 Smart Plan

- Most will learn about Artificial Intelligence.
- You need to know about machine learning and natural language processing.
- You need to know about different frameworks and should know how to work with this.
- Always get updated with Chatbot Framework and learn about new updates.
- I have to gain deeper knowledge about a python programming language for machine learning.
- I have to care so that I can create efficient Chatbot.

The main focus is that I have to do something better and practice more and more. It is a word that practice makes a man perfect. I need to get an update about market activities to survive in the market competition.

CHAPTER-5

Conclusion and Future Work

5.1 Discussion and Conclusion:

In short, this Internship has been given astounding chance and I have increased numerous encounters, which will assist me with playing an imperative job in my future vocation. I had the option to do the AI-based task. This internship will assume a significant job in making me a propelled vocation. This will assist me with working with new innovation in a mammoth organization and it will be urged to accomplish more later on.

5.2 Scope for Future Work:

An internship provides a real-life experience which is helpful for me to get a job and prove myself as a great candidate for the position. It can help me to strengthen my strengths and get a new opportunity. It can help me to get connected with new people and develop my new professional network. It can help me to explore a new career path to work with the giant company. [9]

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[8] Companies Earned at https://beginnerspassiveincome.com/monetize-chatbots/ [last accessed 03 April 2019]

[9] Scope for Future work at https://www.monster.com/career-advice/article/chatbots-future-jobs-0916 [last accessed 13 Aril 2019]

[10] Company Details at http://www.hypertagsolutions.com/index.php [last accessed 20 April 2019]

APENDIX A: Internship Reflection:

Two alternatives were before me, one is an internship and one is projected on anything. I like Internship here since here I can get the encounter of doing genuine work which was exceptionally valuable for me. Since it'll offer assistance I learn the work and office rules at the same time. I think that will play a supportive part in my career within the future. That’s why I liked the Hypertag Solutions LTD since it may be a great quality IT Company. Which gives great benefit and presently it could be a presumed organization. That's why I have planned for an internship here. I chose Counterfeit Insights to do an internship. By doing this, I can grandstand my work involvement around the total world. I accept that with the information I have picked up from here I will be able to work straightforwardly on a proficient extend.

Finally, I need to say, I feel fortunate to be working with the group and earnestly thank the Hypertag Solutions LTD for giving this opportunity.

APENDIX B: Company Details:

Hypertag Solutions Ltd gives center remote administrations and arrangements for portable promoting, portable informing, applications, substance, gadget administration, network door, versatile keeping money and portable budgetary administrations. It has center measured benefit stage that conveys a wide extend of carrier-grade benefit counting wealthy substance, social accumulation, versatile publicizing, informing arrangements, versatile promoting, storefronts and entry administration and call completion services. [10]

Hypertag Solutions Ltd is specialized in SMS, MMS, IVR, WAP, J2ME, and web-based versatile arrangements. Our innovation is live and advancing and outlined for fast sending and income-producing. A state-of-the-art Common Brief Code Door with a comprehensive toolset, the company's unmatched arrangement adaptability empowers administrators of all sizes to compete instantly, and adaptable design makes a movement to next-generation innovation simple. [10]

Hypertag Solutions Ltd gives the control of social media speaks to a nearly boundless opportunity to raise mindfulness of your commerce and increment visits to your site. And all for a division of the taken a toll of conventional showcasing media channels. In later a long time, the rise of locales such as Facebook, Twitter, and YouTube has changed the relationship between commerce and the customer. Nowadays, it's not what you say around yourself that things, but what thousands of potential clients are saying approximately you online. By making and overseeing that all-important 'buzz', our social media pros will guarantee your brand is at the center of the discussion among your target audience. [10]

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Email: info@hypertagsolutions.com