MIRACLE
SOFTWARE SYSTEMS

Building a Ticket Booking Bot using Google's Dialogflow

Open Lab | Digital Summit 2019

Build a ticket booking Bot using Google's Dialogflow

Introduction

This document contains the step-by-step process of creating a chat bot with Google's Dialogflow (previously it was called as api.ai) NLP and will teach you how to create a bot and integrate the Chatbot with Facebook Messenger using one click integration in Dialogflow.

This guide was prepared by **Miracle's Innovation Labs**

Pre-Requisites

All attendees must have their workstation (with Internet) to participate in the lab (both PC and Mac are compatible). The following pre-requisites will help you to make the Hands-on Lab experience easier.

- A Google account is required for Dialogflow
- Access for Facebook and Facebook for Developers
- Facebook account to create a page for Chatbot integration
- Download and install Node JS and ngrok
- Text Editor such as Visual Studio (or) Notepad++

Technology Involved

- NLP - Google's Dialogflow
- Server Side - Node JS

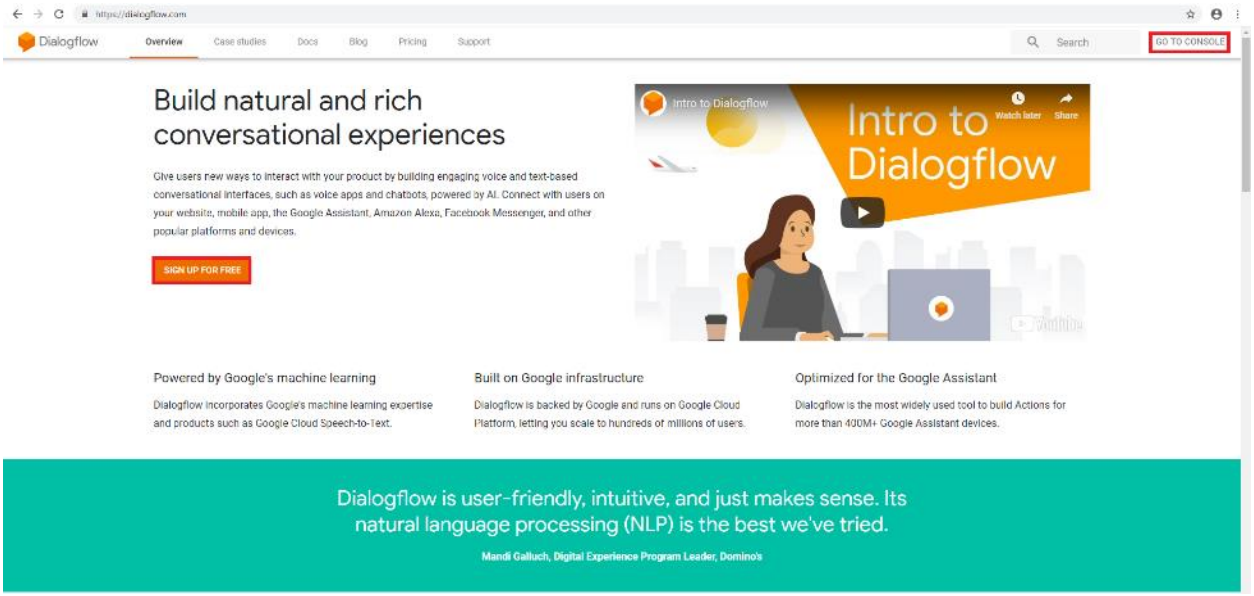
Labs Steps

So, let us get started with the bot!

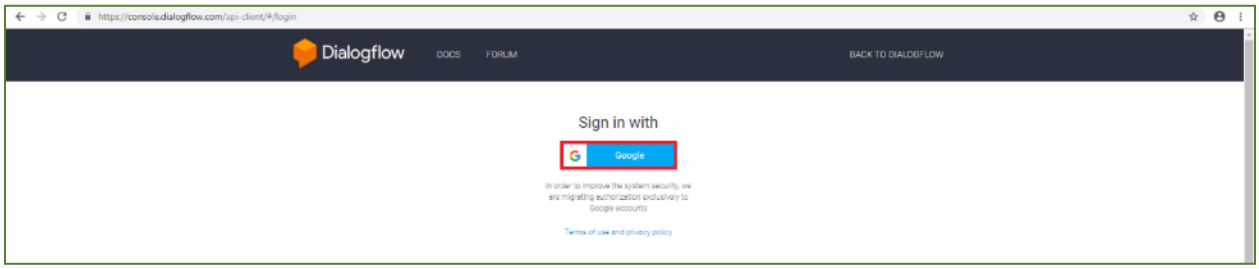
The following steps will outline how you can create a Ticket Booking Bot using Google's Dialogflow and integrate it with Facebook Messenger. Users will be able to directly message your bot through Facebook Messenger to book your flight ticket.

Step #1 | Create Dialog Model in Dialogflow

Create an account for Dialogflow. Go to **https://dialogflow.com/** and click on **GO TO CONSOLE** or **SIGN UP FOR FREE.**

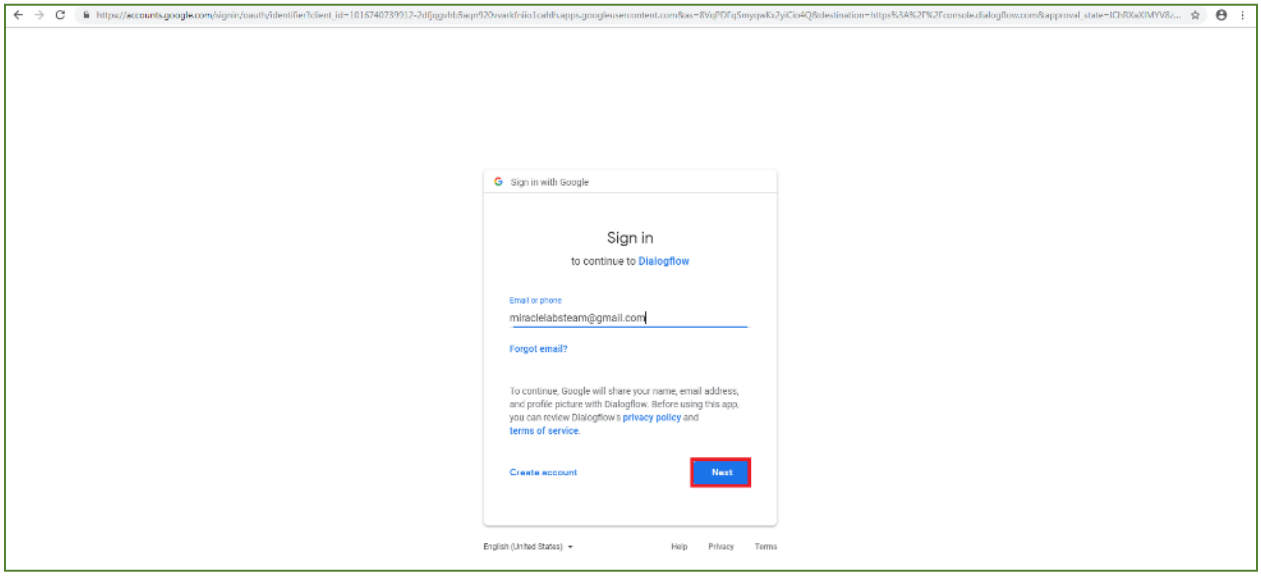


After clicking on any one of the button as shown above, it will be redirected to the console of Dialogflow for login. Now, click on **Google** button.

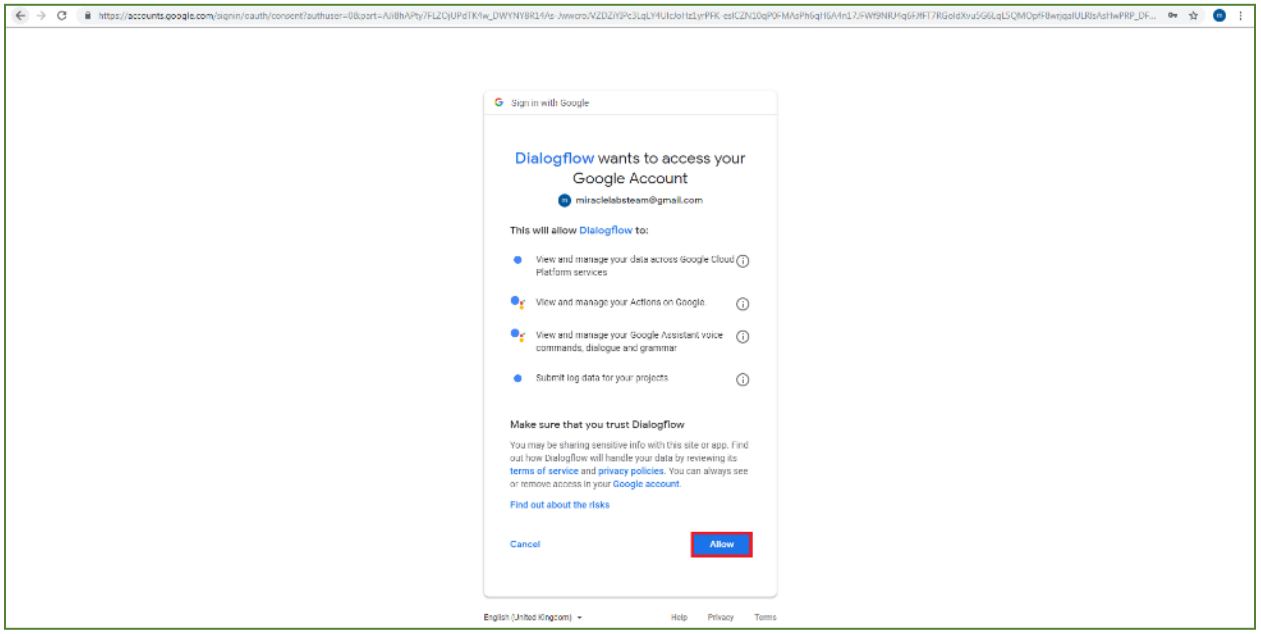


Dialogflow account can be created with Google account credentials. If you have a Google account, use those credentials and authorize yourself.

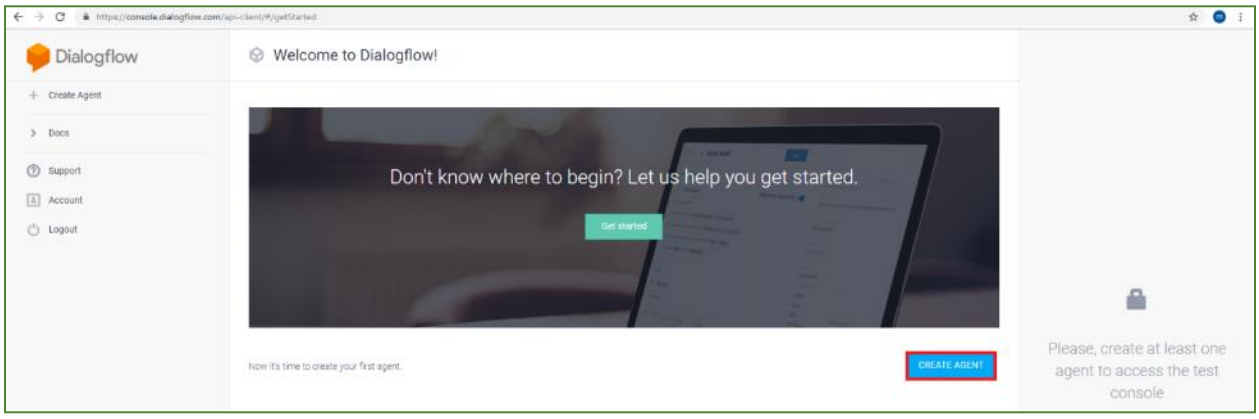
If you don't have a Google account, create it using the below link,
https://accounts.google.com/SignUpWithoutGmail?hl=en/



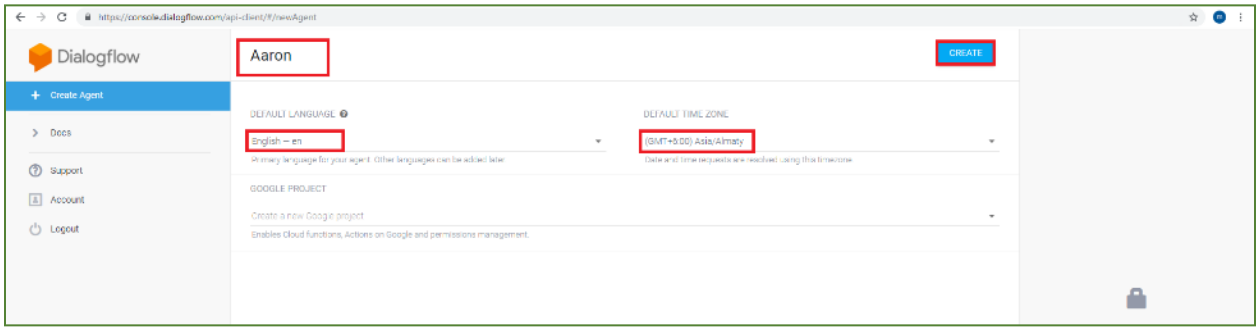
Once you get signed in with your credentials, you will be asked to provide permissions for accessing Dialogflow with your Google Account. To provide access click on **Allow** as shown in the below image.



The Dialogflow home page is opened, where you have to create an Agent/Bot. Click on **CREATE AGENT** (if a pop up opens stating don't have correct permissions just Authorize).



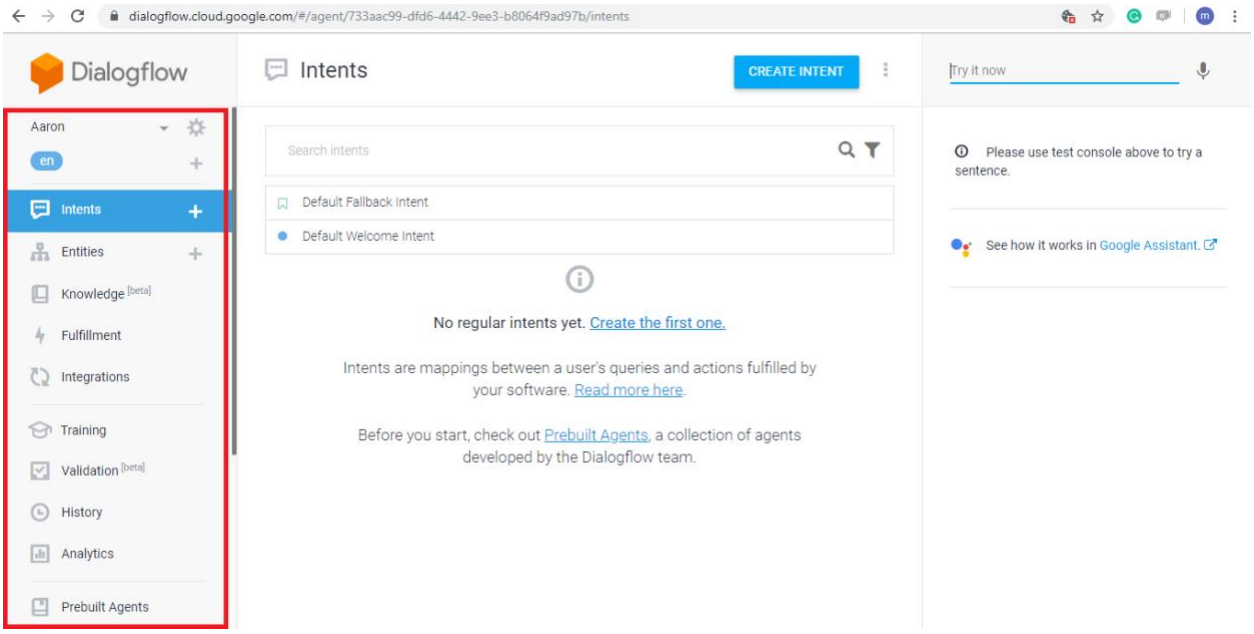
Once you click on CREATE AGENT, you will be requested to provide an Agent name. In our case it is **Aaron**, choose the language, and time zone from the drop down respectively and click on **CREATE** button.



Once you are done with the creation of your agent you will get the dashboard with lot of different options on the left hand side which are used for bot creation.

You will also have two Default Intents initially,

- **Default Welcome Intent** - This intent will initially respond to the users, when users engage to the service
- **Default Fallback Intent -** This intent responds back to the user, when input is not recognized

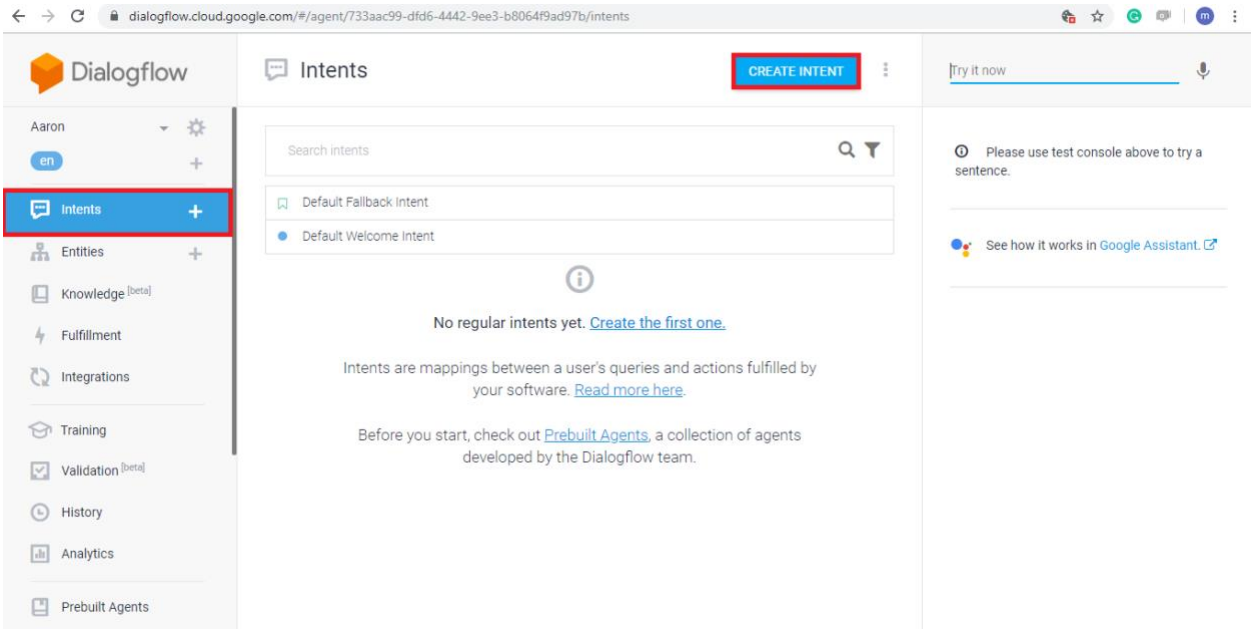


You can read about these in detail through Dialogflow **docs**.

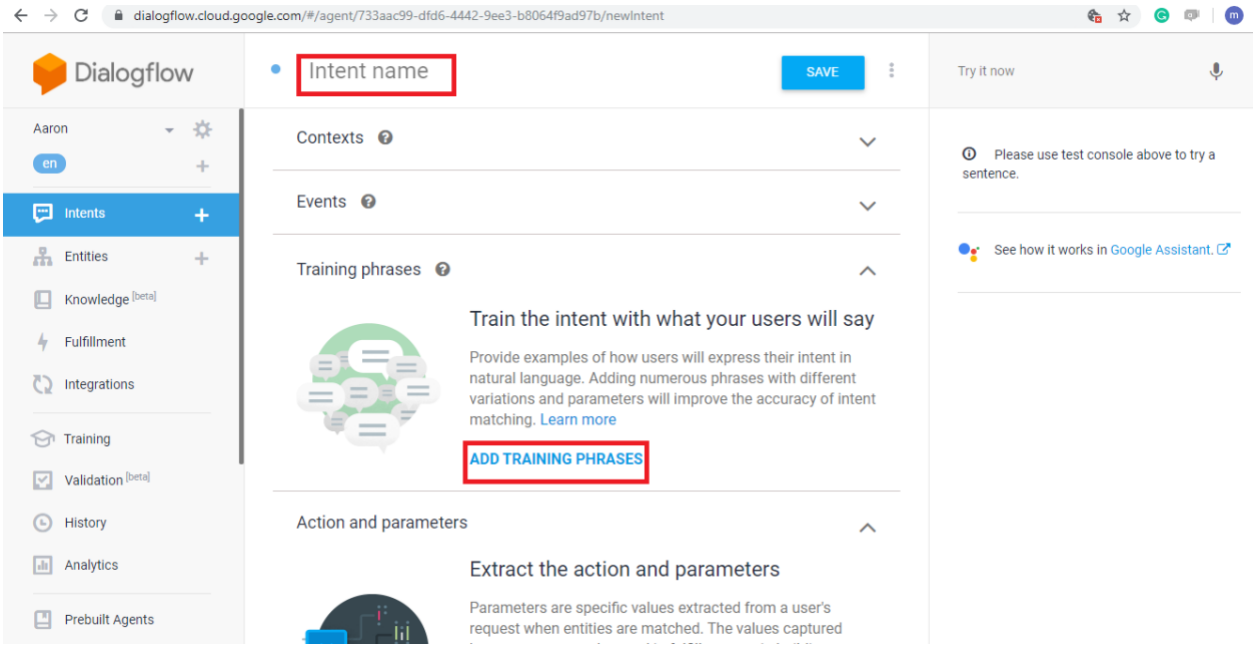
By now, we have a basic setup of Dialogflow. Now you have to Create Intent, Entities and Text Response for bot. Let's see one by one.

Step #2 | Creation of Intent

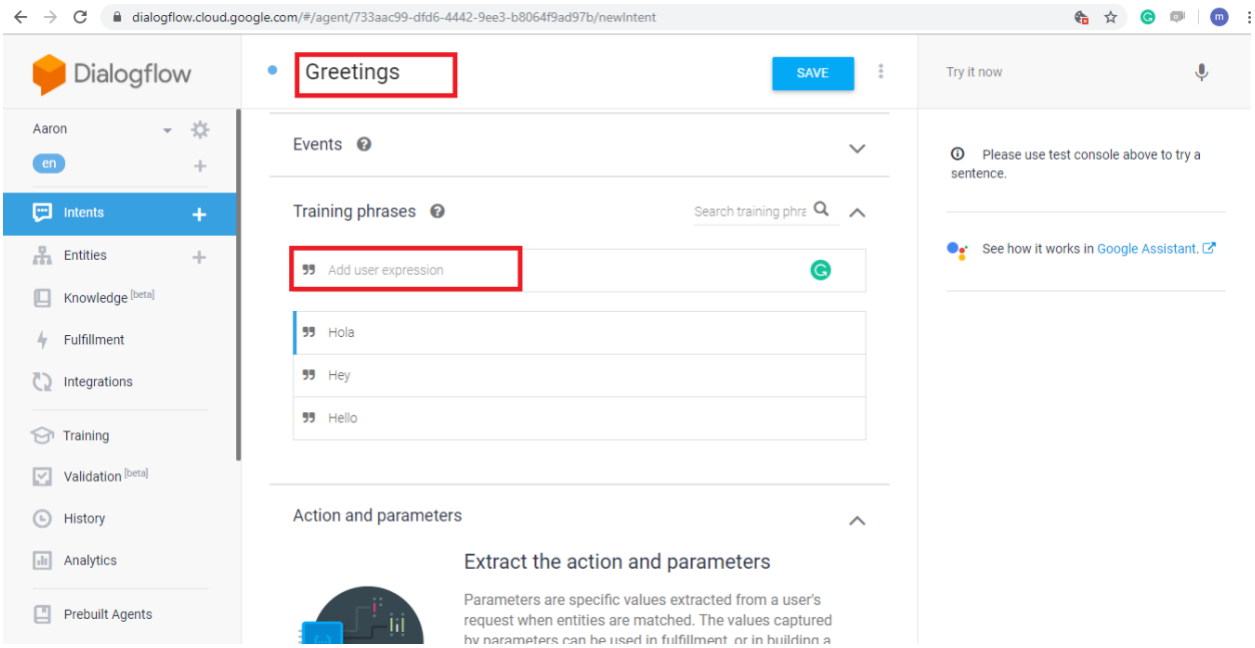
Click on **+** sign on **Intents** tab on left hand side or click on **CREATE INTENT** button for creating new Intent.



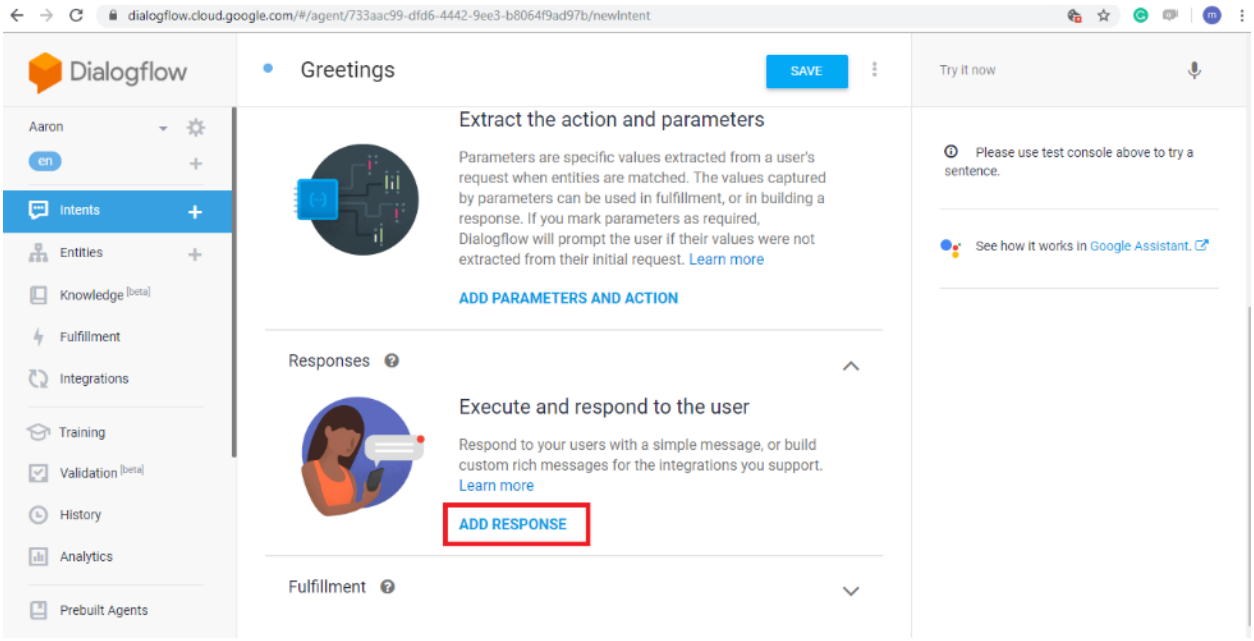
Now you need to provide the **Intent name** and click on **Add Training Phrases** which is located in the **Training Phrases** section for creating the Intent.



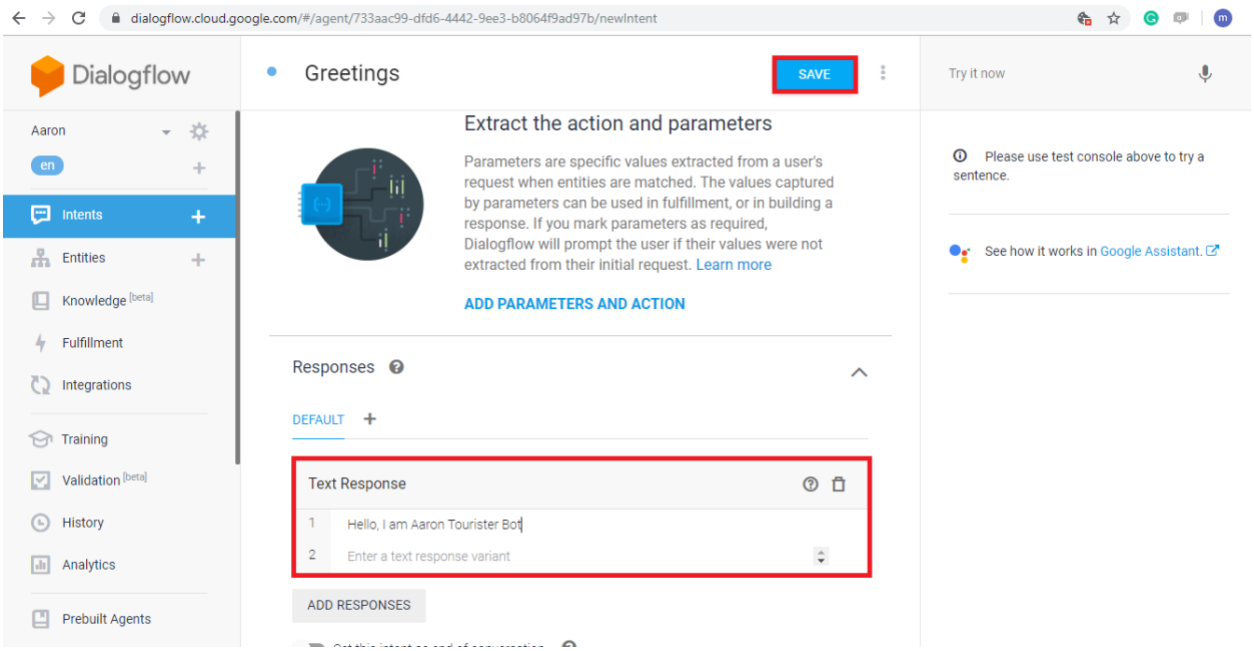
Note - Under **User Expressions**, as many expressions you provide the Agent will become that matured.



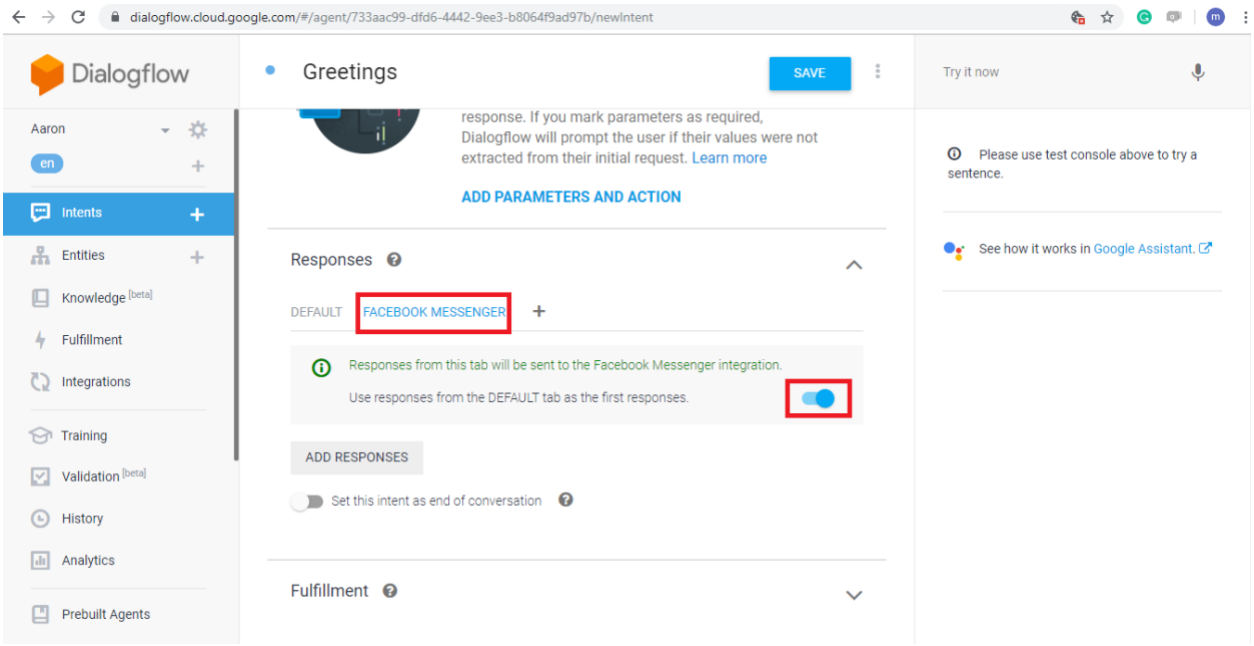
Now, provide the response in the **Responses** section which is used to respond back to the intent when it detects same kind of user examples. For providing response for an intent, click on **Add Response.**



Now you can provide multiple responses for the same Intent. Once it is done, click on **SAVE** for saving the created intent.

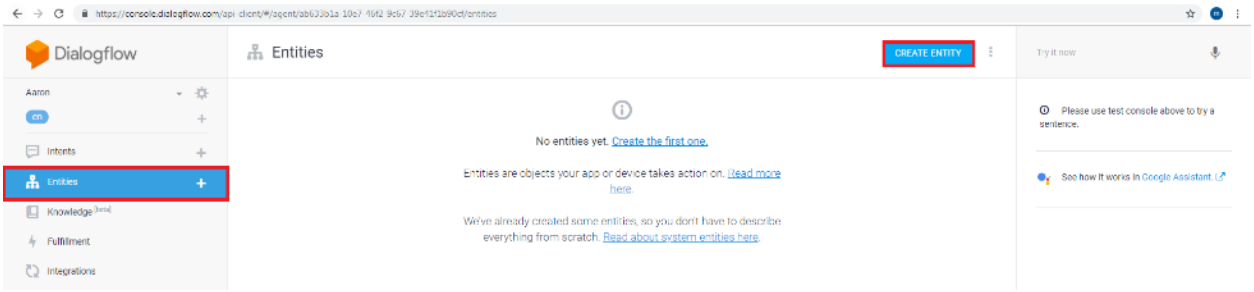


Once you provide the response in the Text response section, if your responses from all the intents need to send to the Facebook channel, go to every intent and click on **FACEBOOK MESSENGER** and enable the button to use your text responses as default responses as shown below.

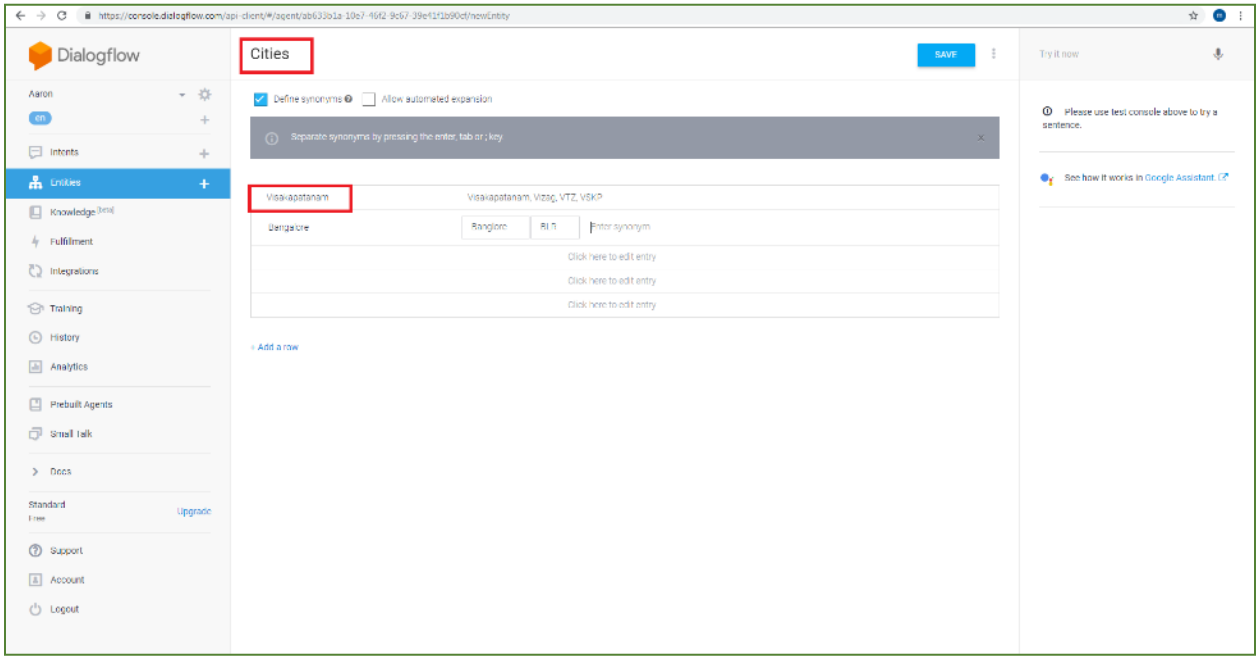


Step #3 | Creation of Entities

Click on **+** sign on **Entities** tab on left hand side (or) click on **CREATE ENTITY** button, which is at top right corner for creating the Entity.

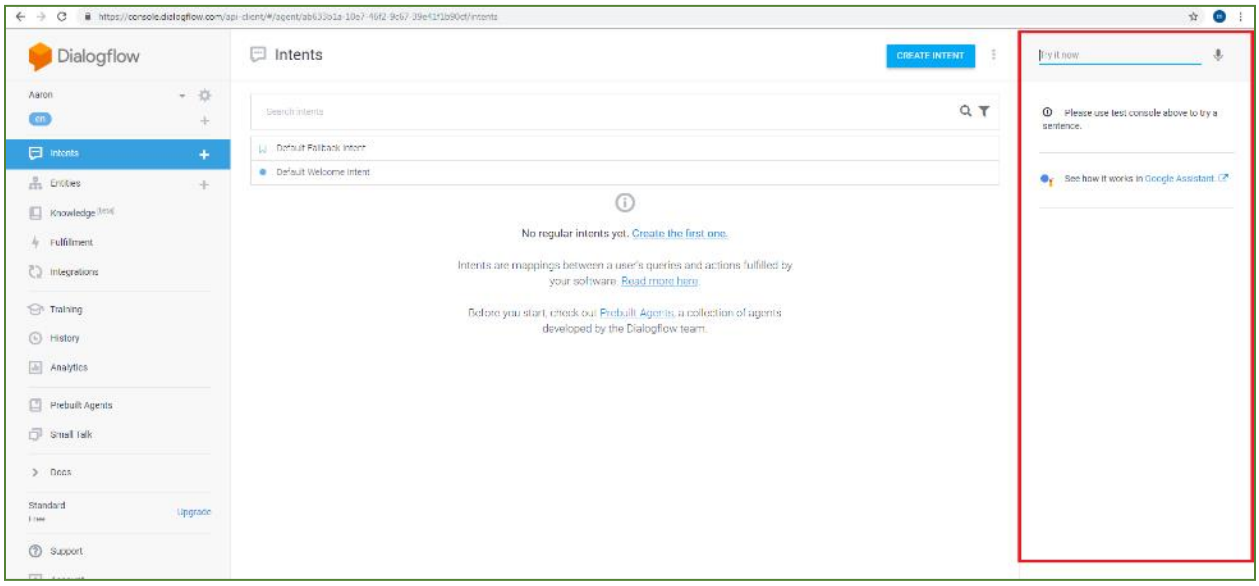


You need to give the entity name and also you have to provide the reference value and synonyms for it while creating the Intent as following,



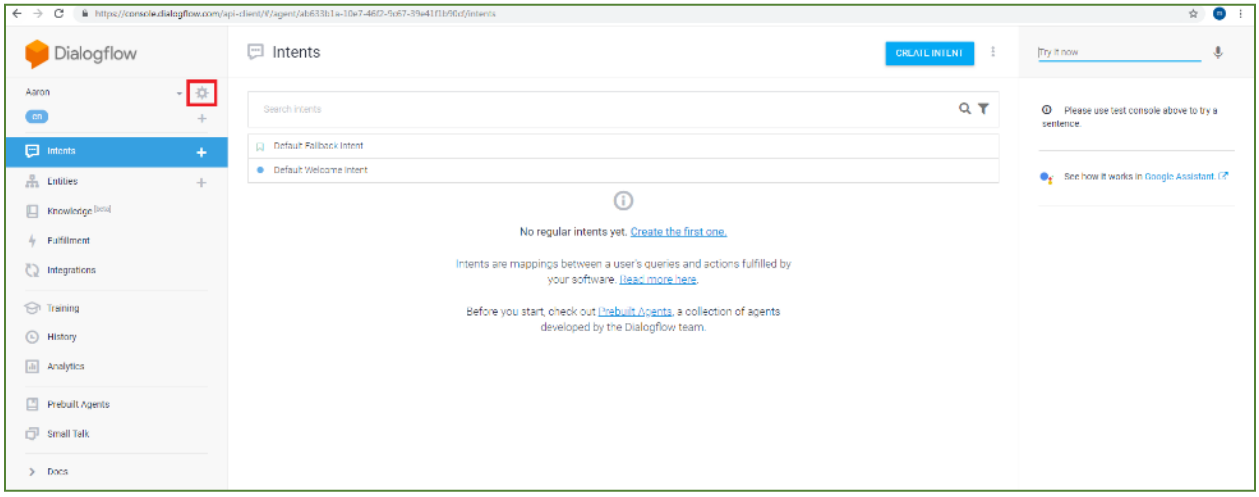
Then click on **SAVE** button on the top right to save the created entity.

You can test your Bot in the right-side test console provided by Dialogflow.

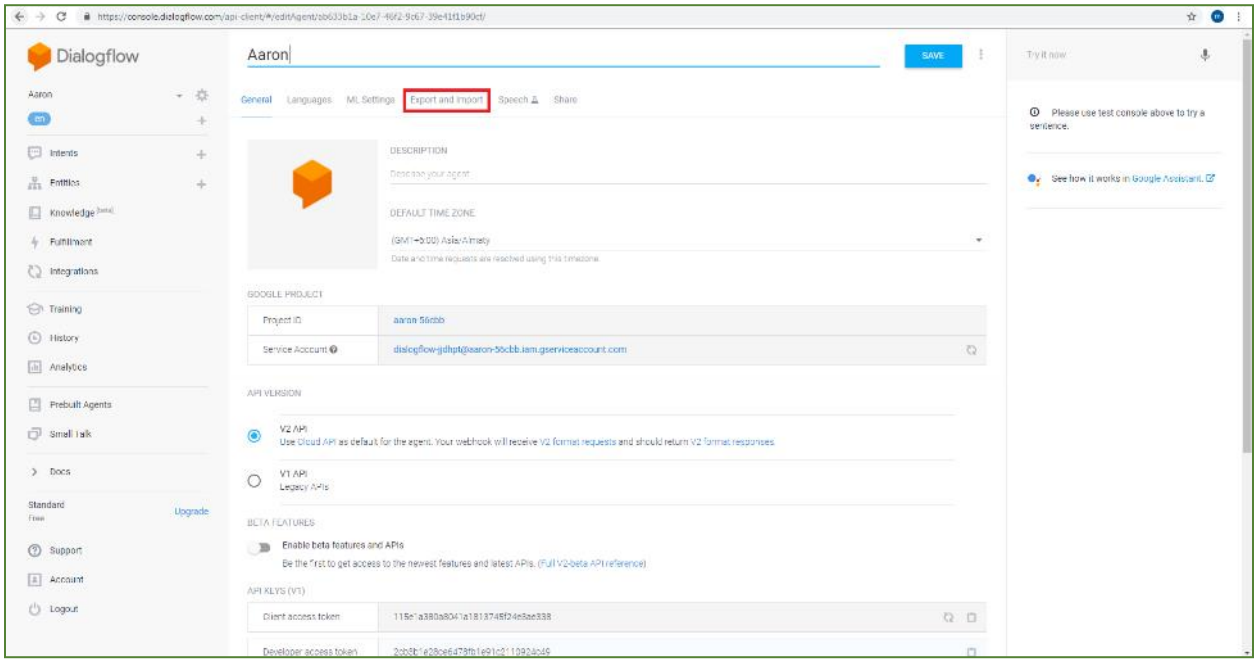


From our GitHub repository, download the zip file in your system. You can find the sample Agent which is created with the name **dialog_model.zip**

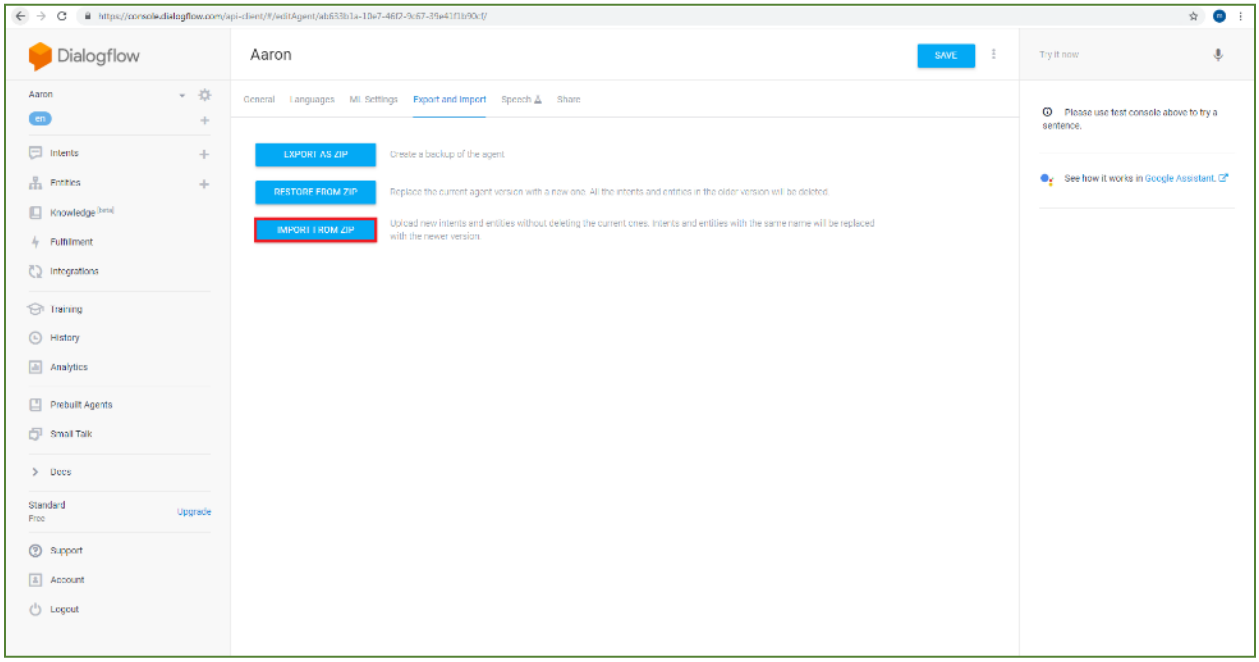
Now go to Dialogflow console and click on gear icon as shown below to import Intents and Entities.



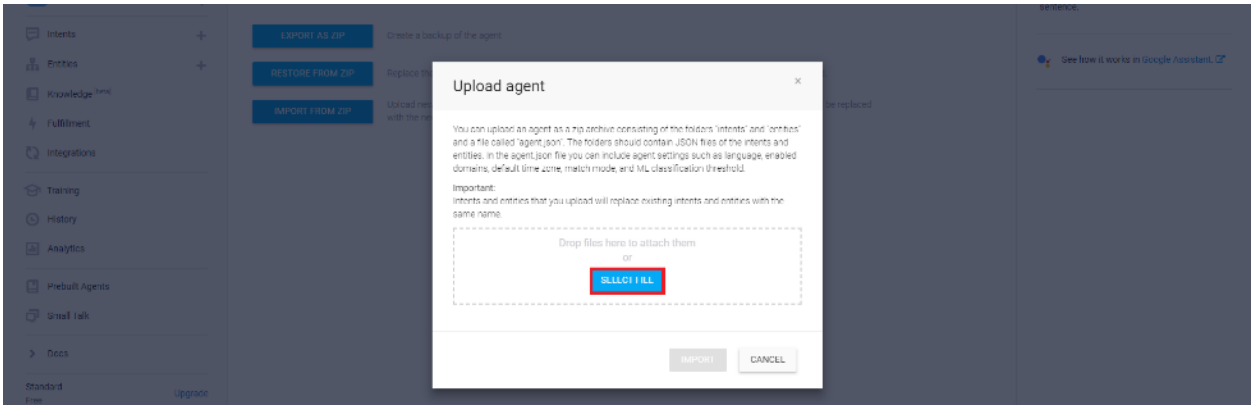
By default, you will be landed on General session page. Select **Export and Import** tab.



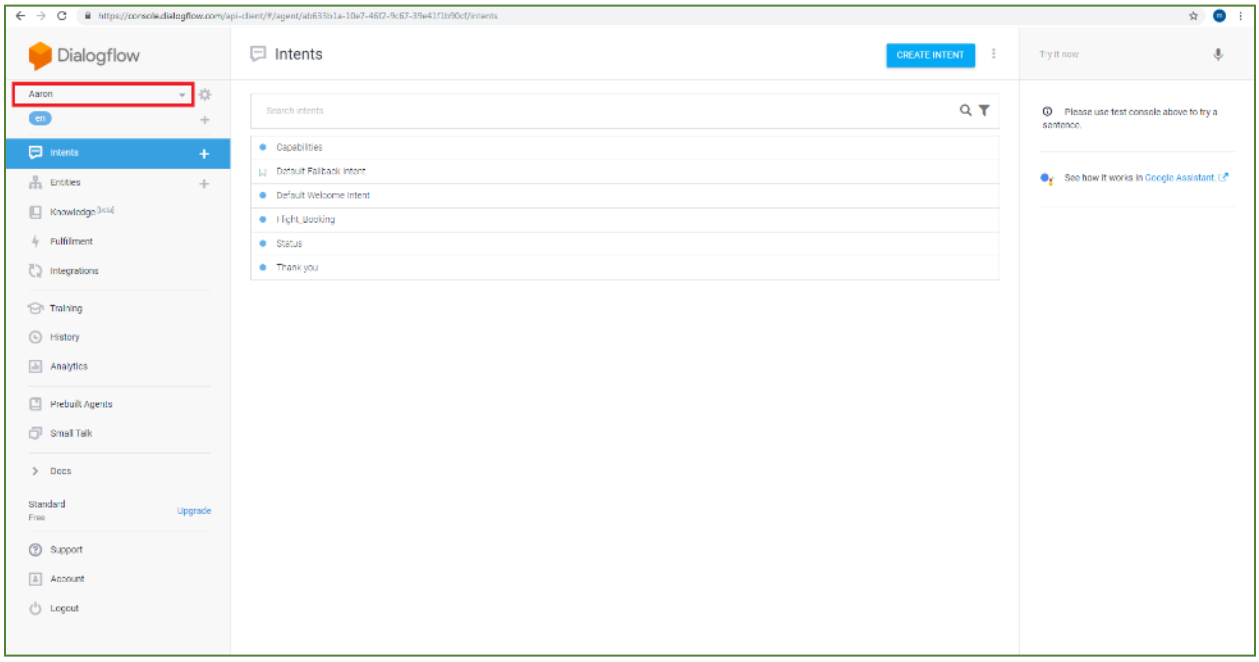
Click on **IMPORT FROM ZIP** tile, which will prompt you to select the zip file from your system.



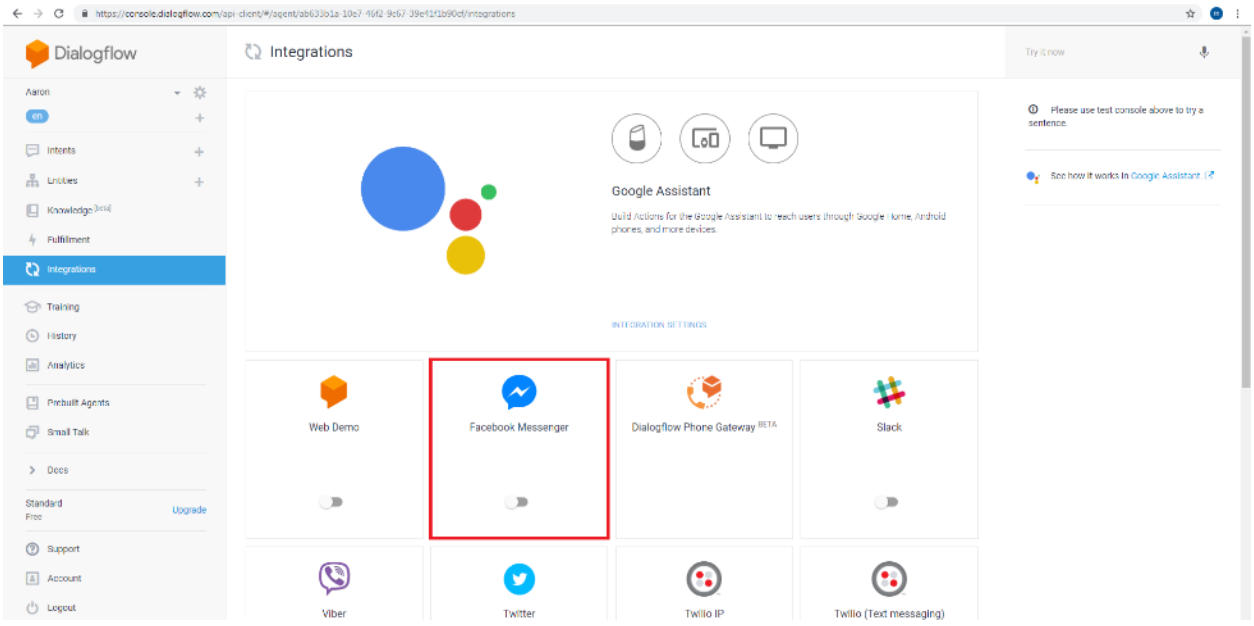
A pop-up is displayed asking you to **SELECT FILE**, you have to upload the zip file which you downloaded previously from GitHub repository. Once the upload is done click on **IMPORT** button.



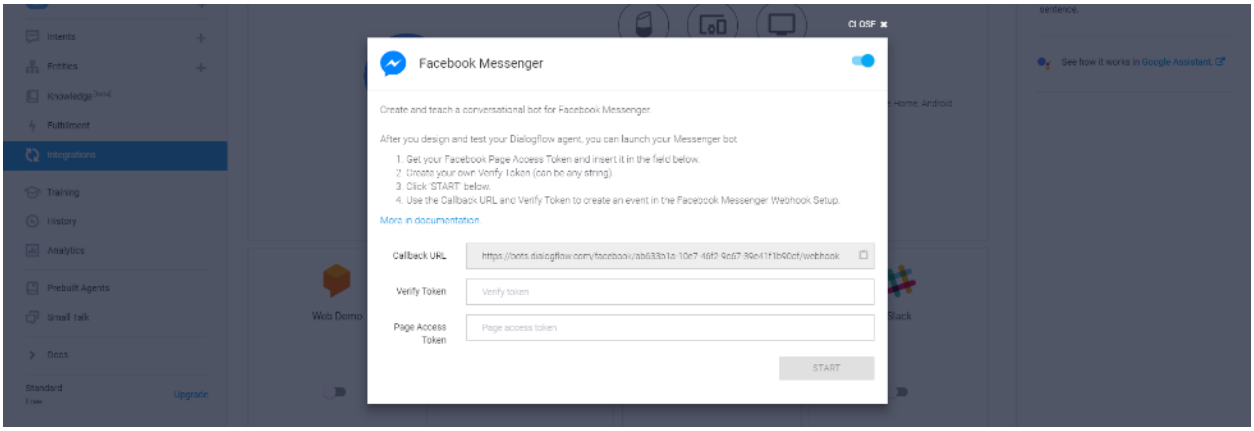
Now, you will find the agent of **Aaron Bot** which you imported.



In your agent, go to **Integrations** tab on the left side menu in Dialogflow and you will see a bunch of one click integrations. In that, go ahead and enable the Facebook Messenger integration.

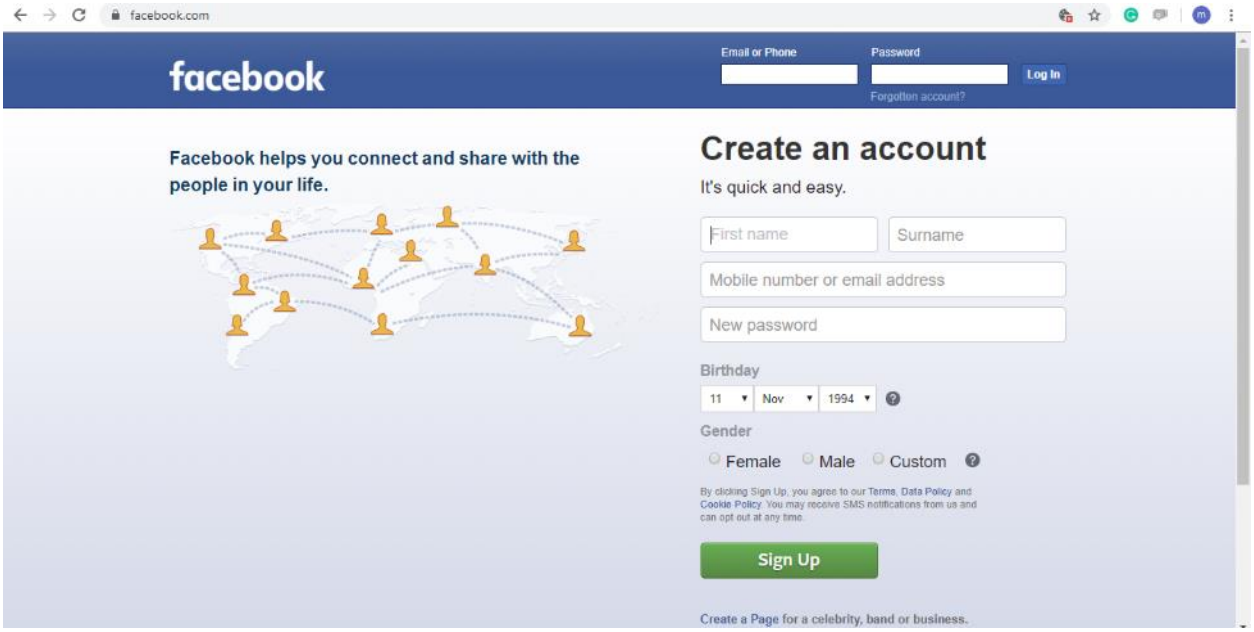


Once you click on Facebook Messenger integration, you will get a default Callback URL in a pop-up. Copy that Callback URL.

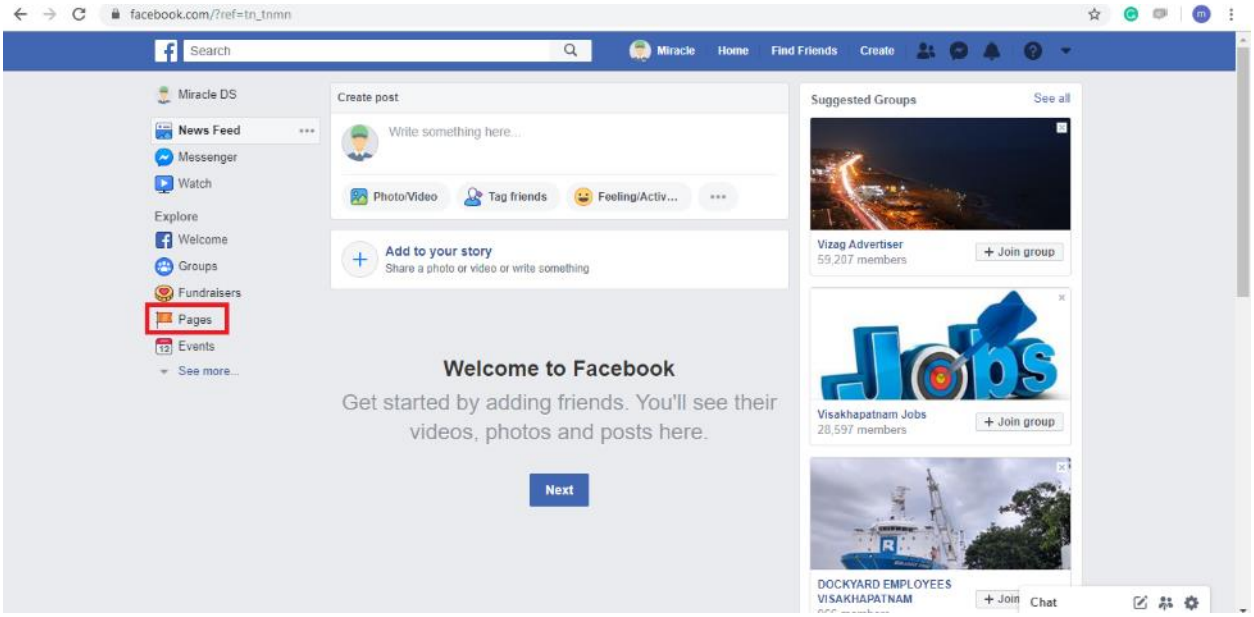


Step #4 | Create Facebook Page to Access Chatbot

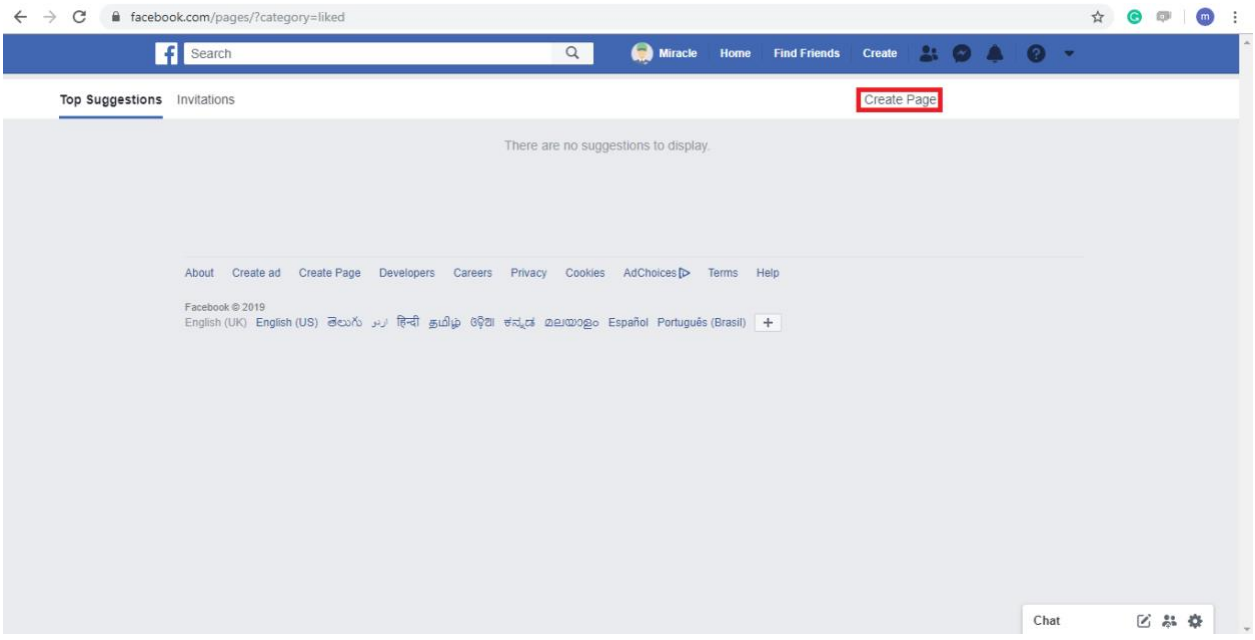
The first step will be to create a Facebook account and **Log In** by providing Email or Phone and Password at, https://www.facebook.com/



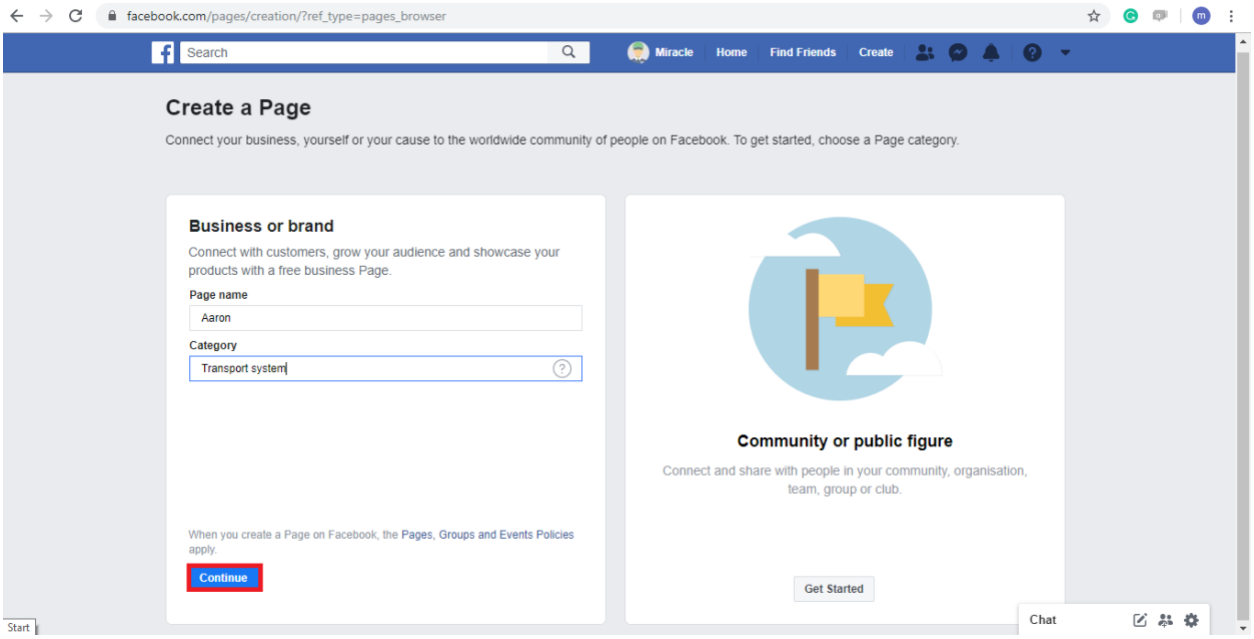
Once you login into Facebook, you need to create a new page by opening the below link in a new tab, https://www.facebook.com/pages/create/ or else click on **Pages** as shown below.



If you are creating a page for very first time, you will not find any existing pages. Then click on **Create Page** button as shown below,



Now, provide a **Page name** and select **Category** of that page and click on **Continue** button. Note that page name should be unique.

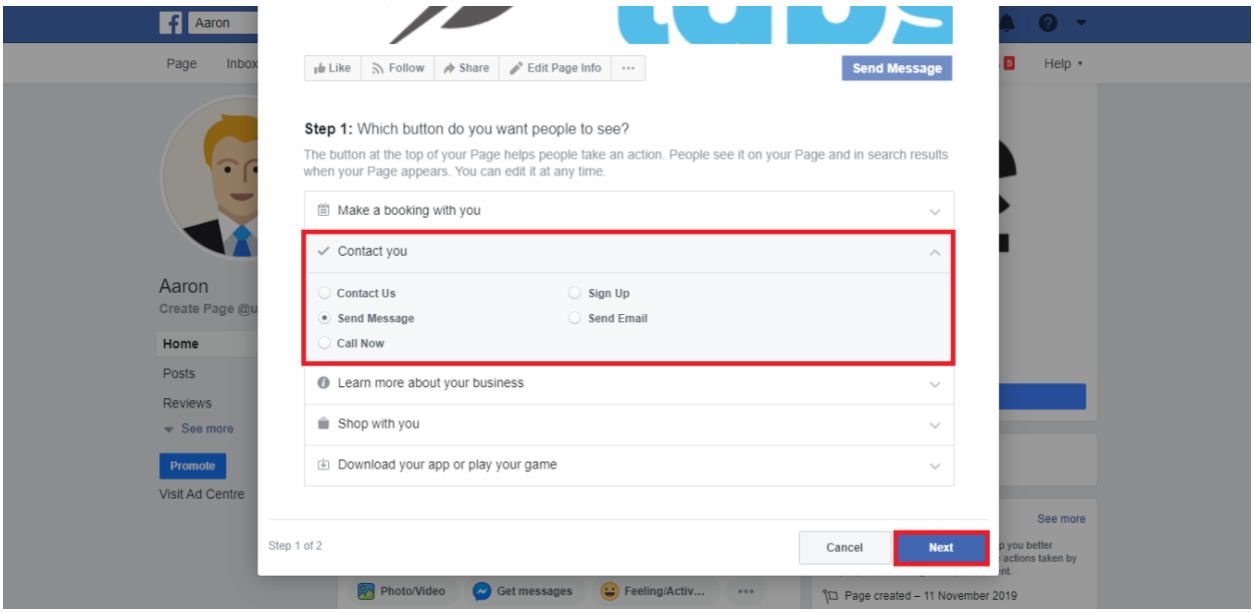


After clicking on Continue button, your page will be created and looks like below,

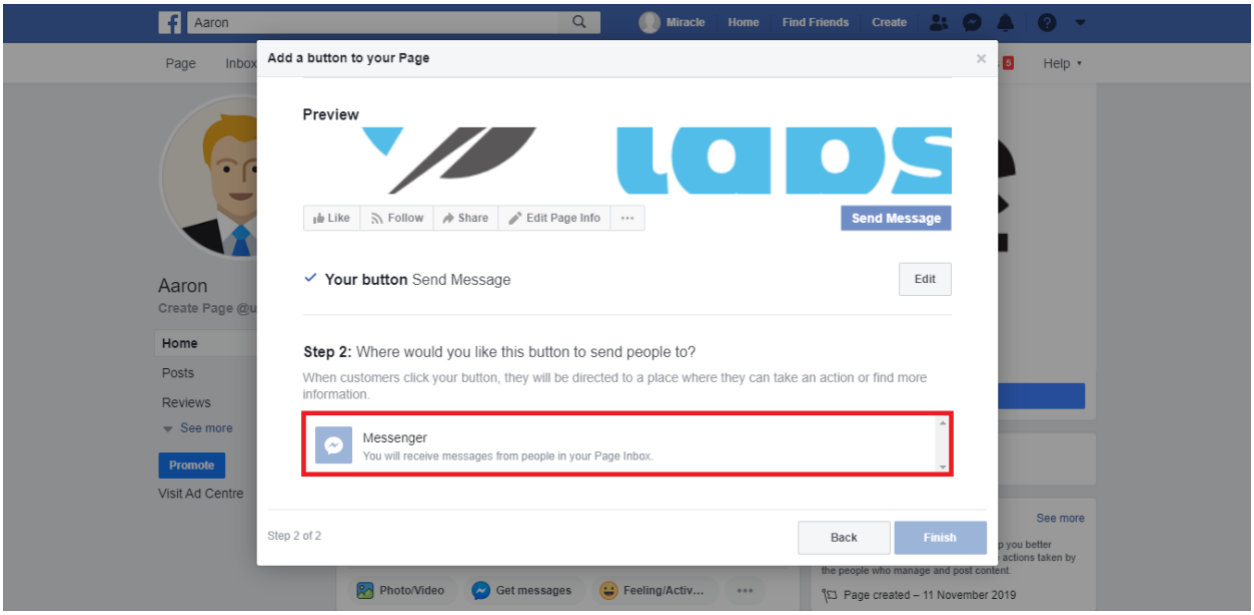
Once you are done with the page creation, click on **+ Add a Button**.

We need to get a **Send Message** button to start the conversation with bot.

To get that, click on **+ Add a Button**. You will get the options to select the button category. Please select the **Contact you** option and choose **Send Message** radio button as below and click on **Next**.

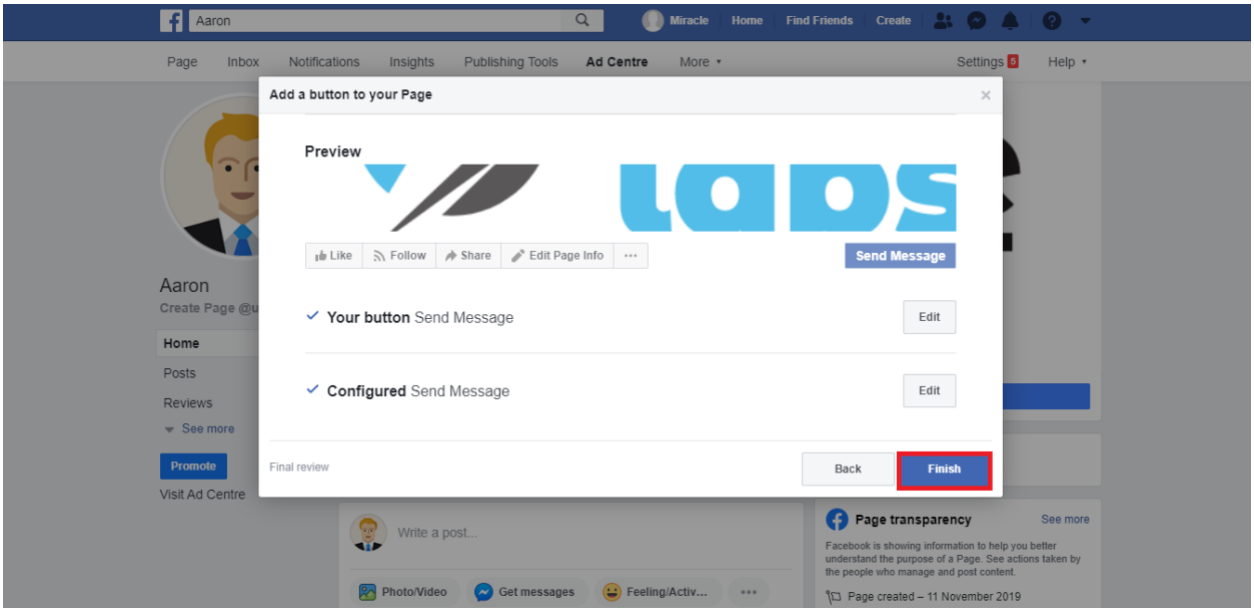


After clicking on **Next** button, it will ask for another option - **Where would you like this button to send people to?** Place your cursor over **Messenger** and click on it.



Once you complete the above steps, **Finish** button will be enabled and click on that button.

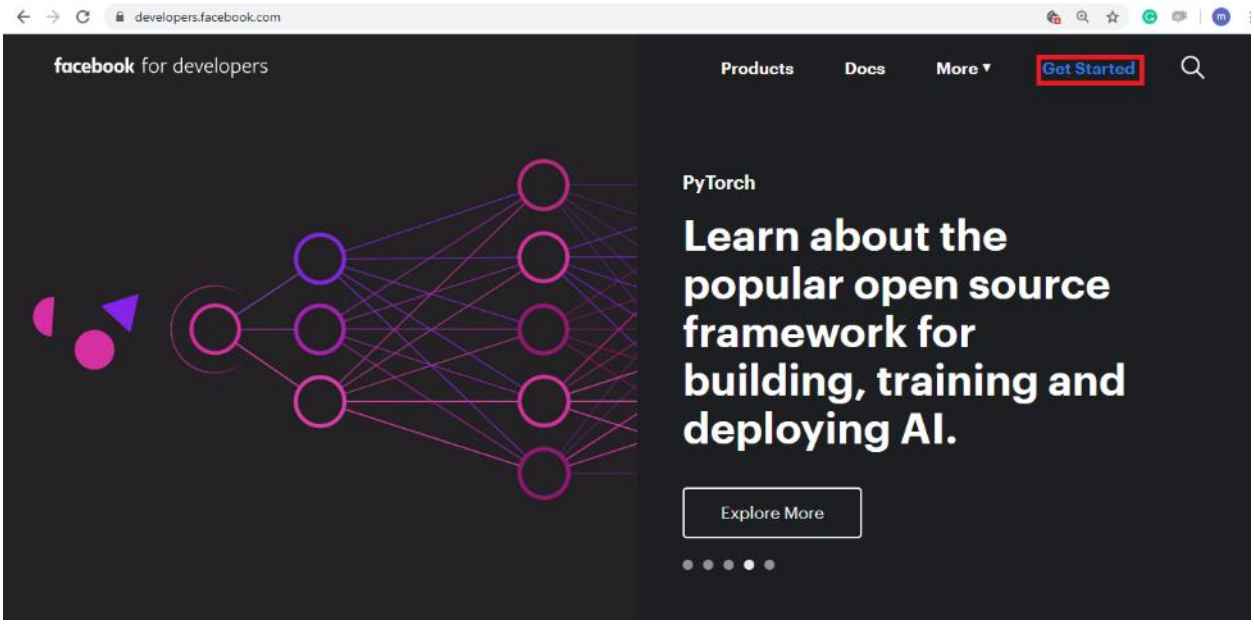
Note - If you want to edit any option that you selected previously, click on **Edit** button which is available above the **Finish** button.



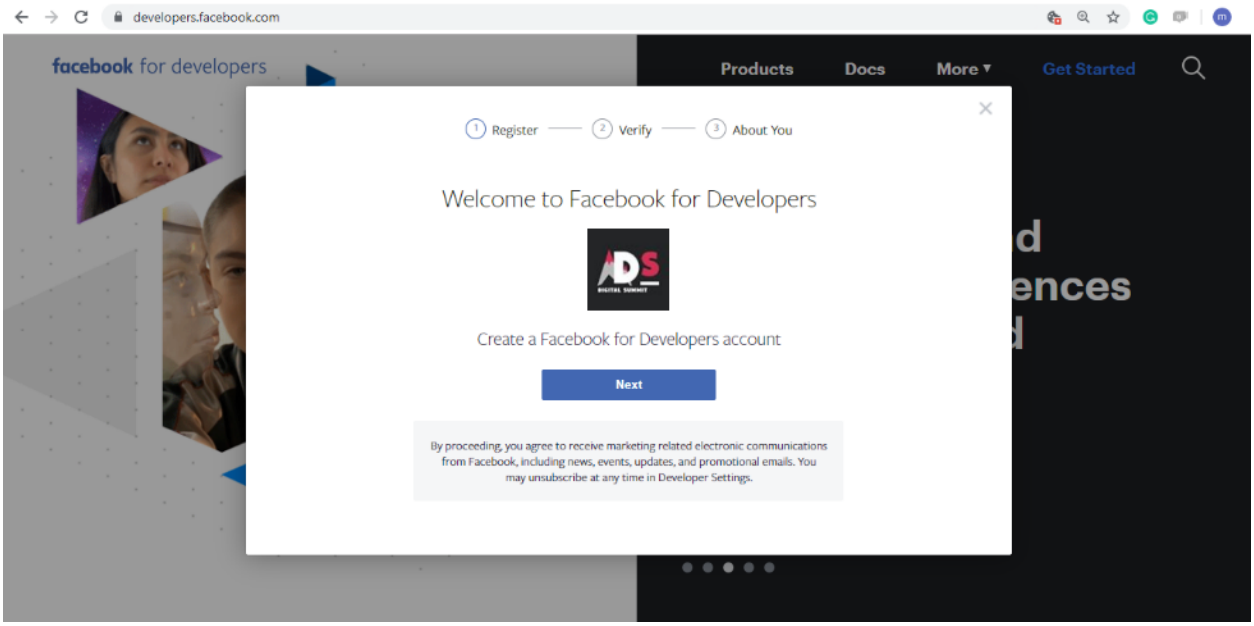
Now, you can see that the option **+ Add a Button** on your page is replaced with **Send Message.**

Step #5 | Accessing Facebook for Developers

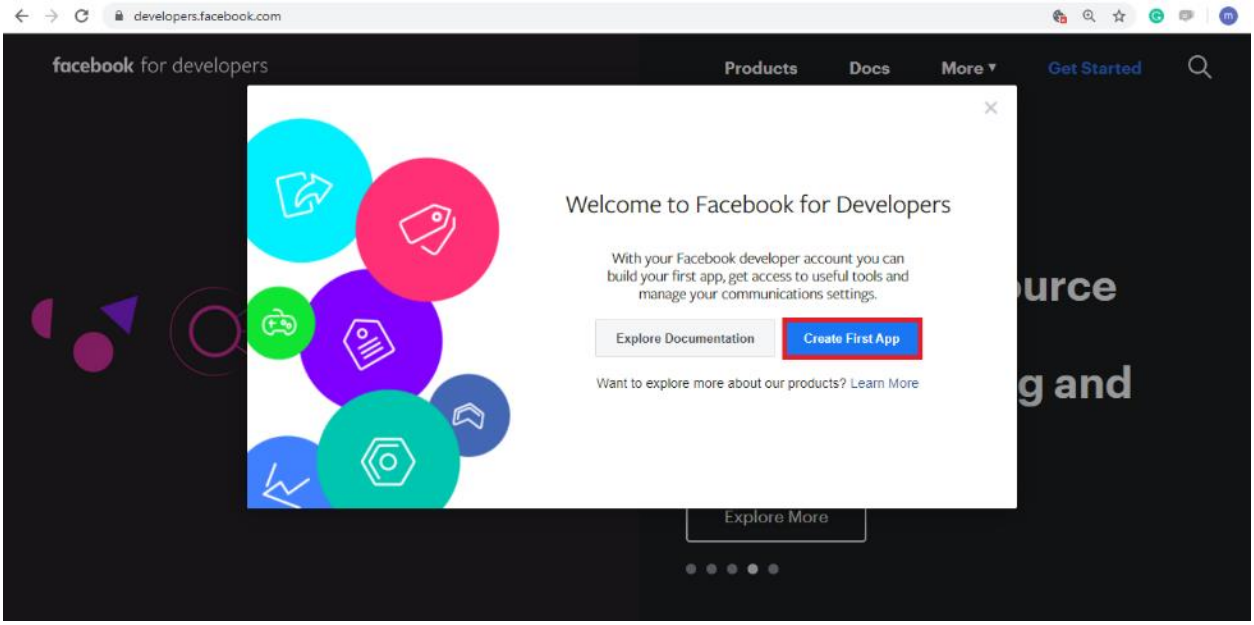
Login into Facebook for Developers http://developers.facebook.com/ for creating apps in order to generate page access token. If you had already logged in, click on **Get Started** as shown in the image.



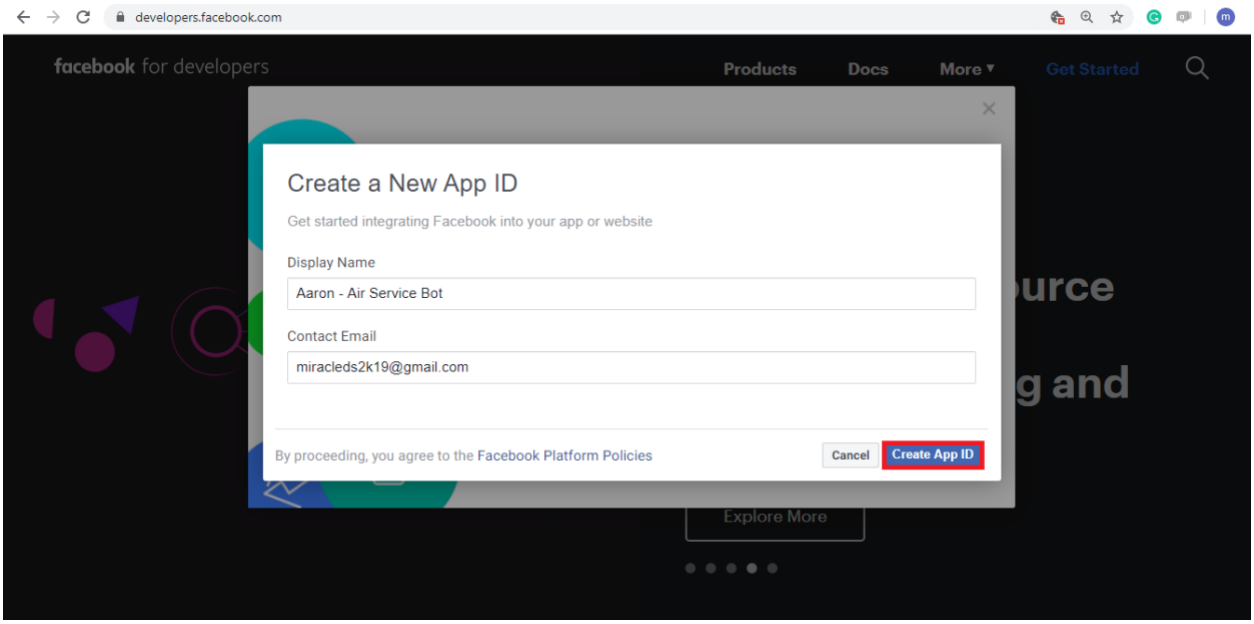
By clicking on Get Started button, it will ask for verification process to create a developers account in Facebook. Let's complete all 3 steps - **Register, Verify** and **About You**. To complete the above steps click on next for creating developers account and authenticate yourself by providing Phone number to get verified and select your role in the next step.



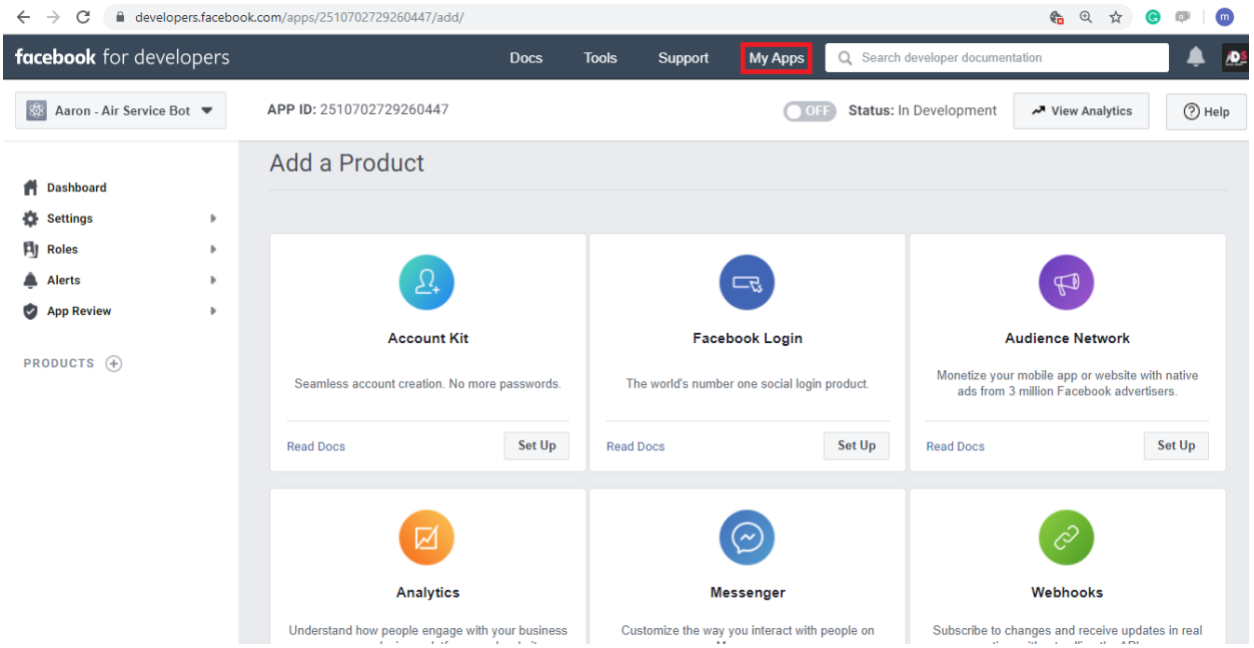
After completion of the above verification process, we need to create a First App in developers account as shown below.



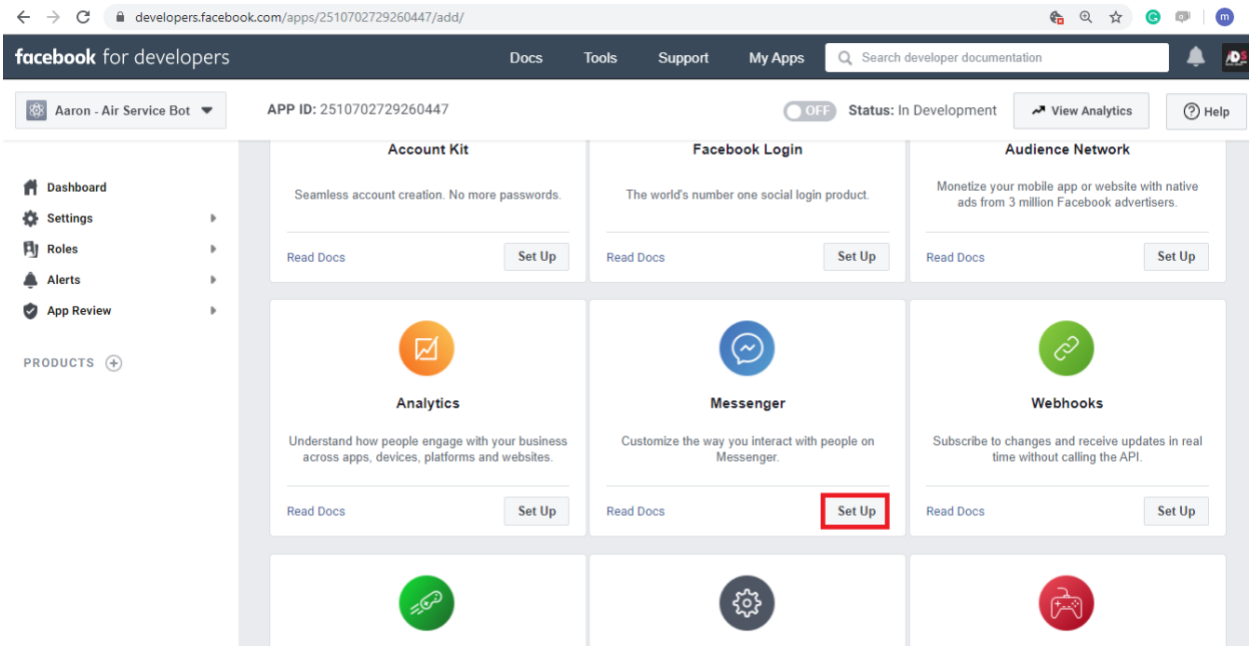
Now it will ask you to provide the Display name and contact details for the App. Please provide all the necessary details for your respective page and click on **Create App ID** button.



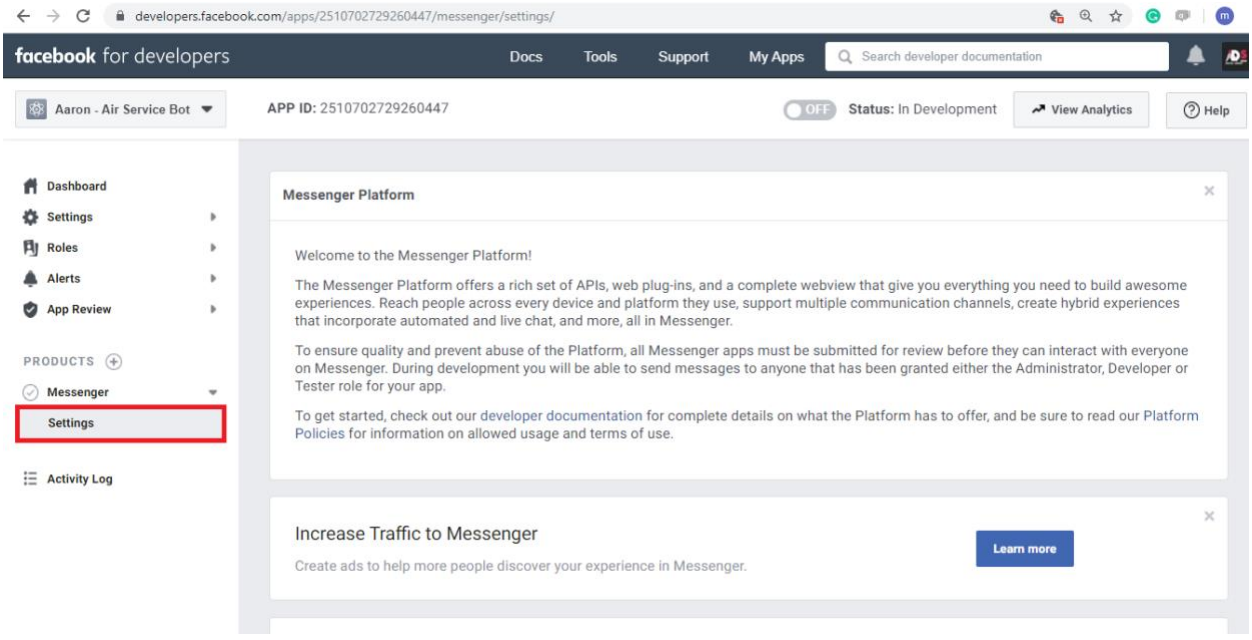
Note - If you have already created the app and you want to use it, select it from the **My Apps** menu.



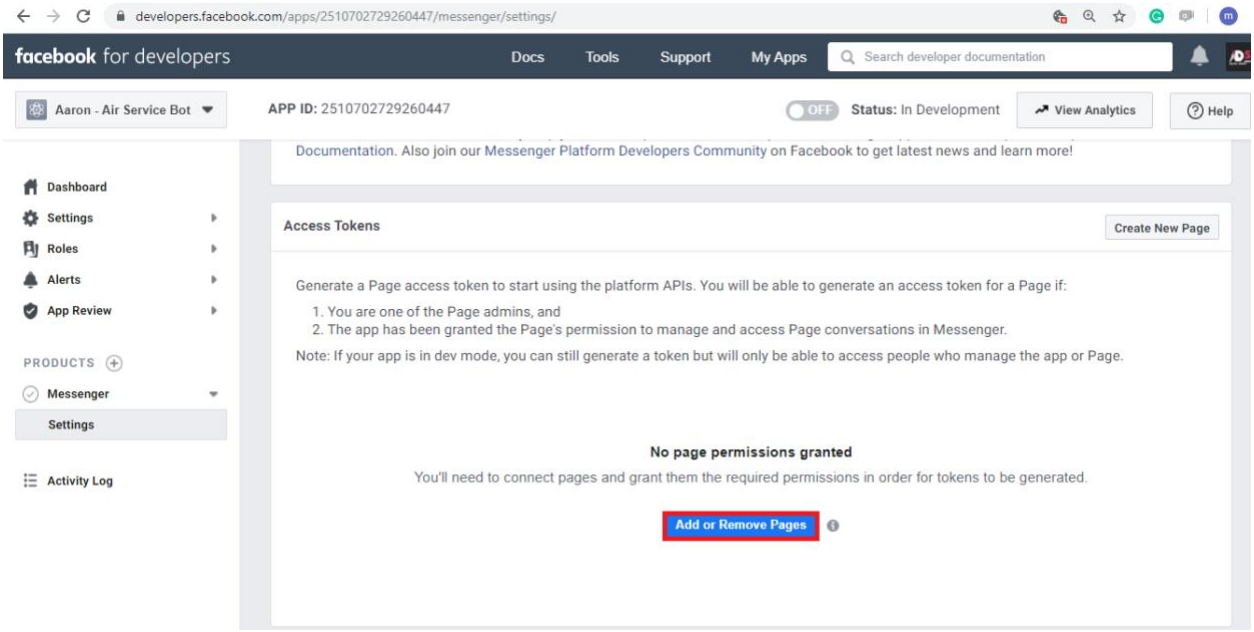
Select **Messenger** option and click on **Set Up** to customize the way, to interact with people on Messenger through your app.



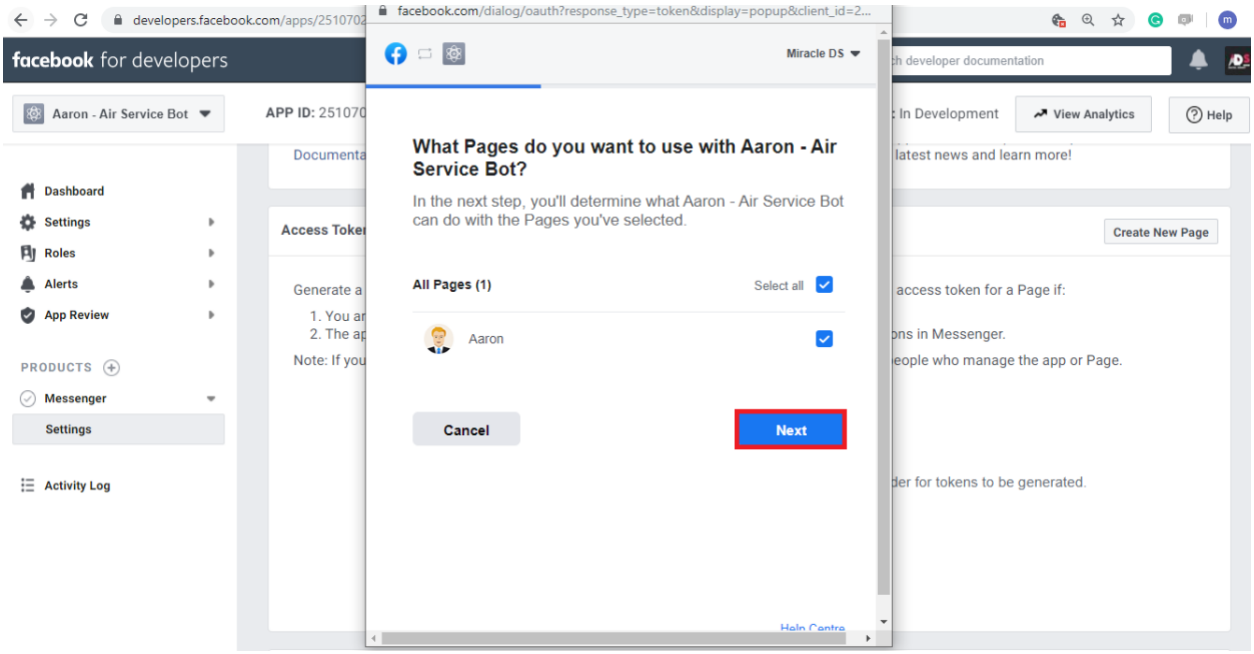
Once you click on the Set Up option, you will get the Messenger settings. In left side panel under the Product, go to Messenger tile and select **Settings.**



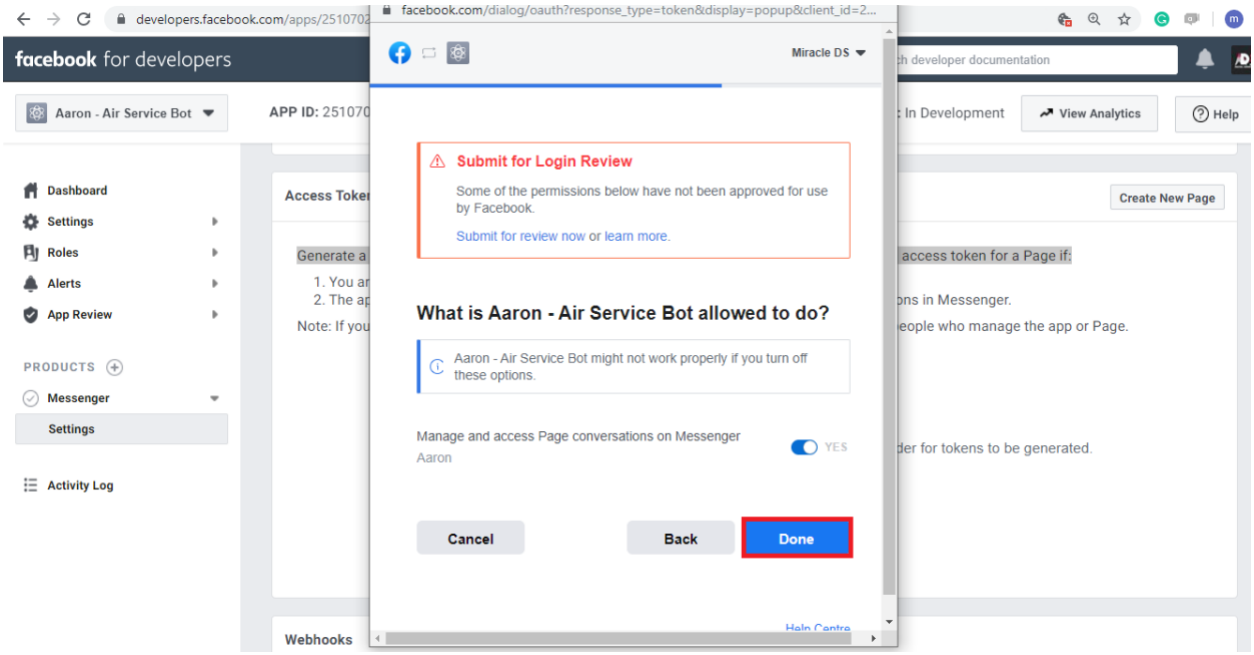
Scroll down to **Access Tokens** and click on **Add or Remove Pages** to generate token for your pages.

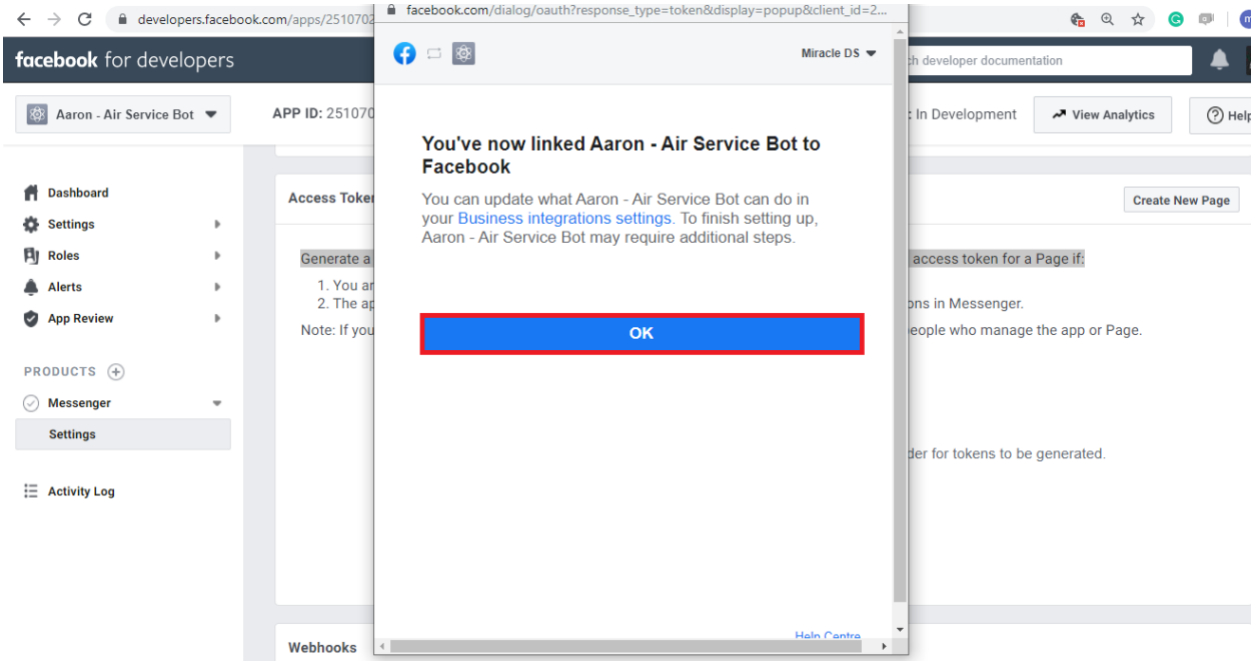


Now, you will get all the pages that you are created in a new window. Select the page that you want to submit for review and click on **Next**.

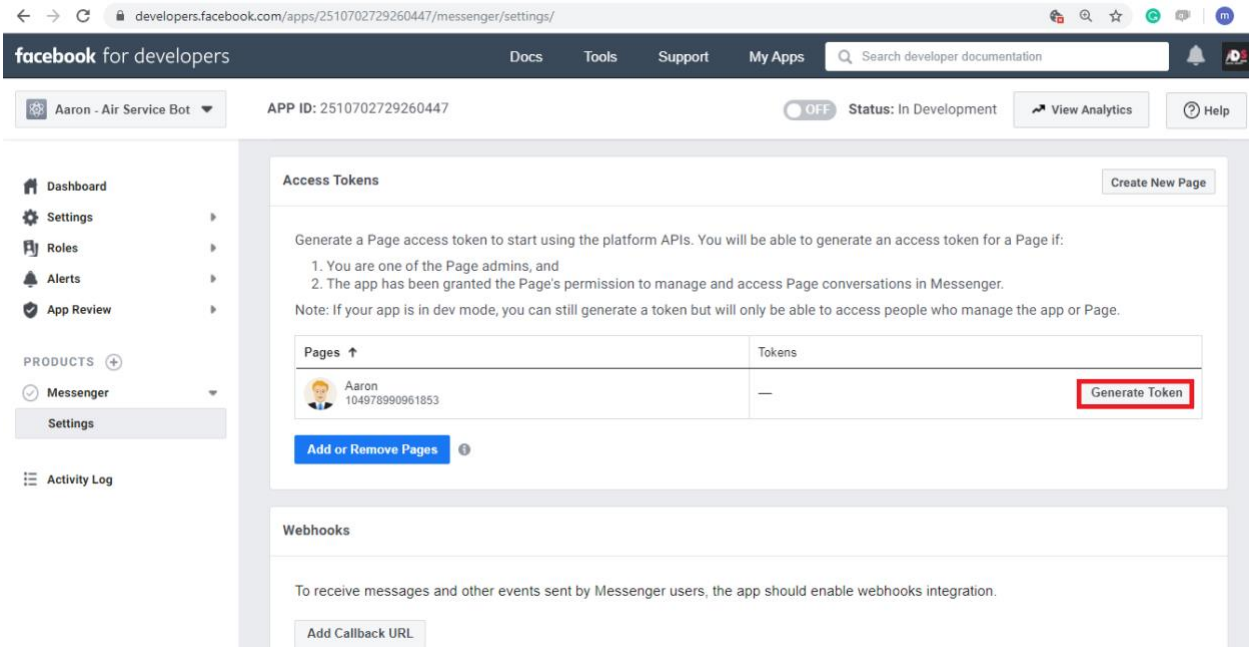


Once you click on **Next,** you need to submit your page for review by clicking on done button. Complete the review process for getting all permissions to your page as shown below.

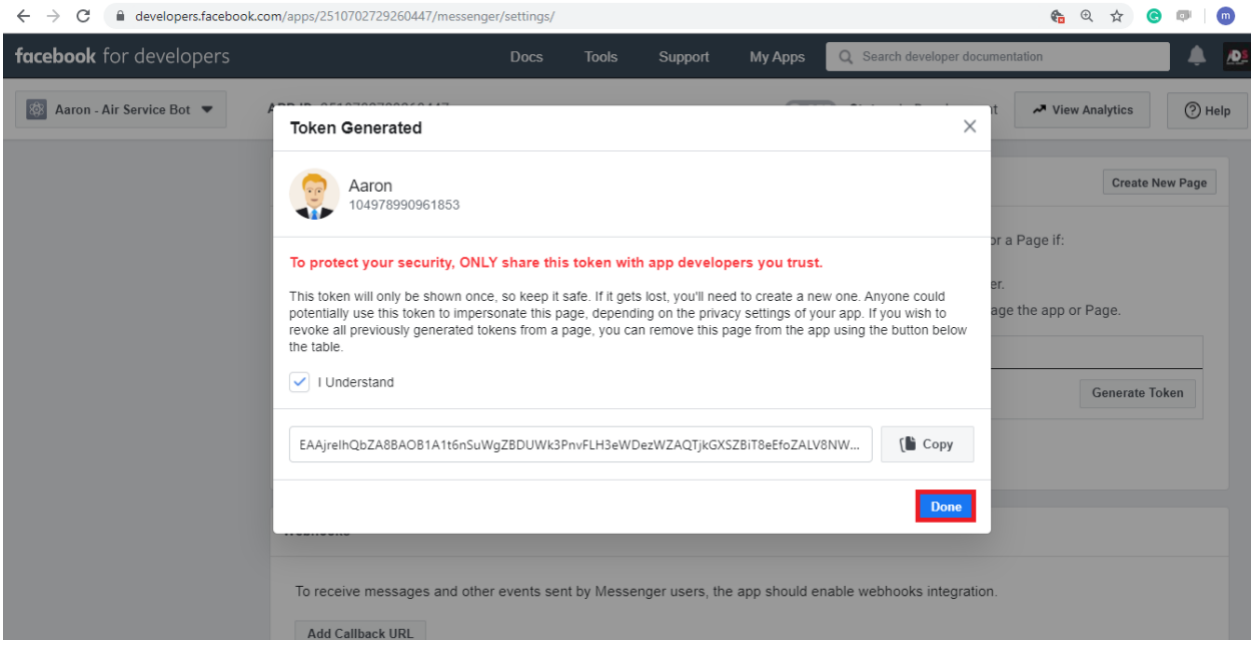




Once you are done with the above process you will get the list of pages that have been submitted for the review. Now click on the **Generate Token** button to get the access token for the respective page.

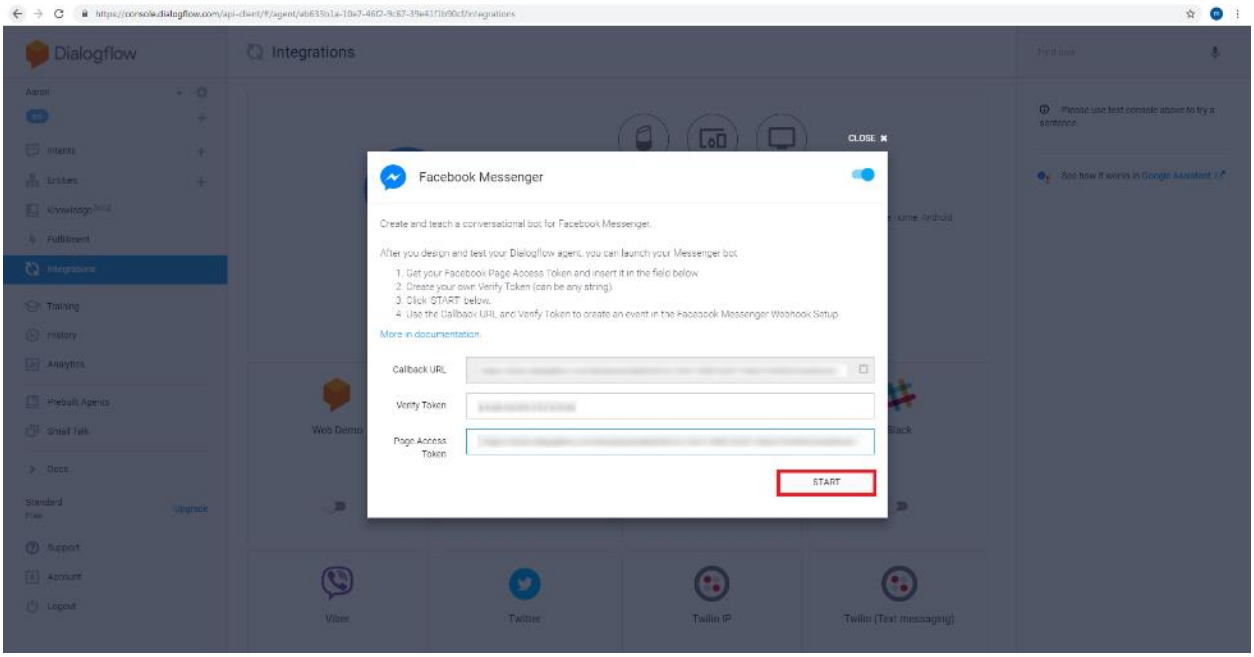


Now click on the checkbox '*I understand',* copy the access token and click on done.

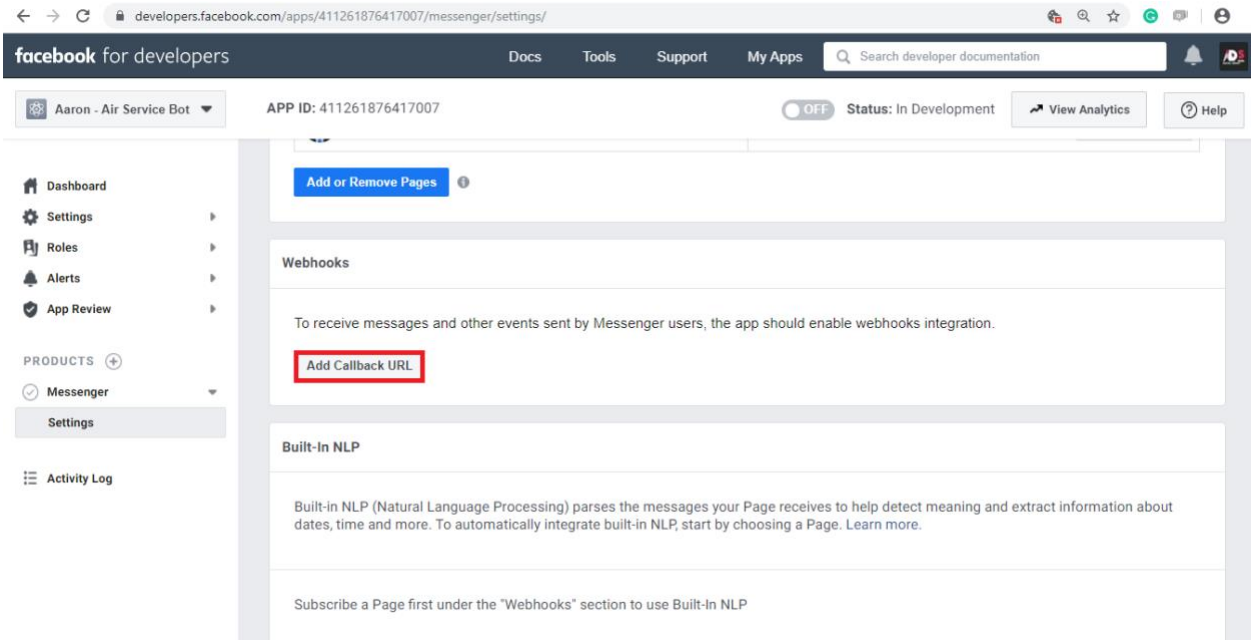


Step #6 | Integration with Facebook Messenger and Dialogflow

Navigate to Dialogflow Facebook Integrations and paste it over the **Page Access Token** section. Provide your own **Verify Token** and click on **Start** button.

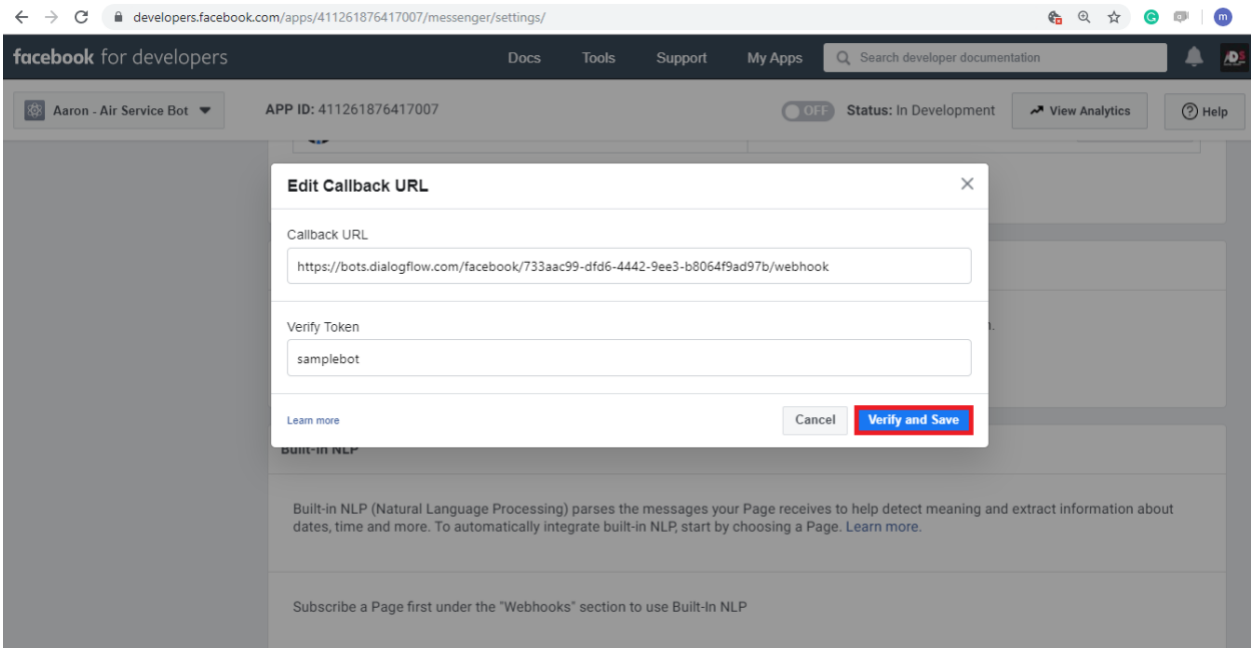


After clicking on start button in Dialogflow Facebook Integration, navigate to the app that you created in your Facebook Developer Page. Go to the Messenger settings and scroll down to the Webhooks section. Click on **Add Callback URL.**

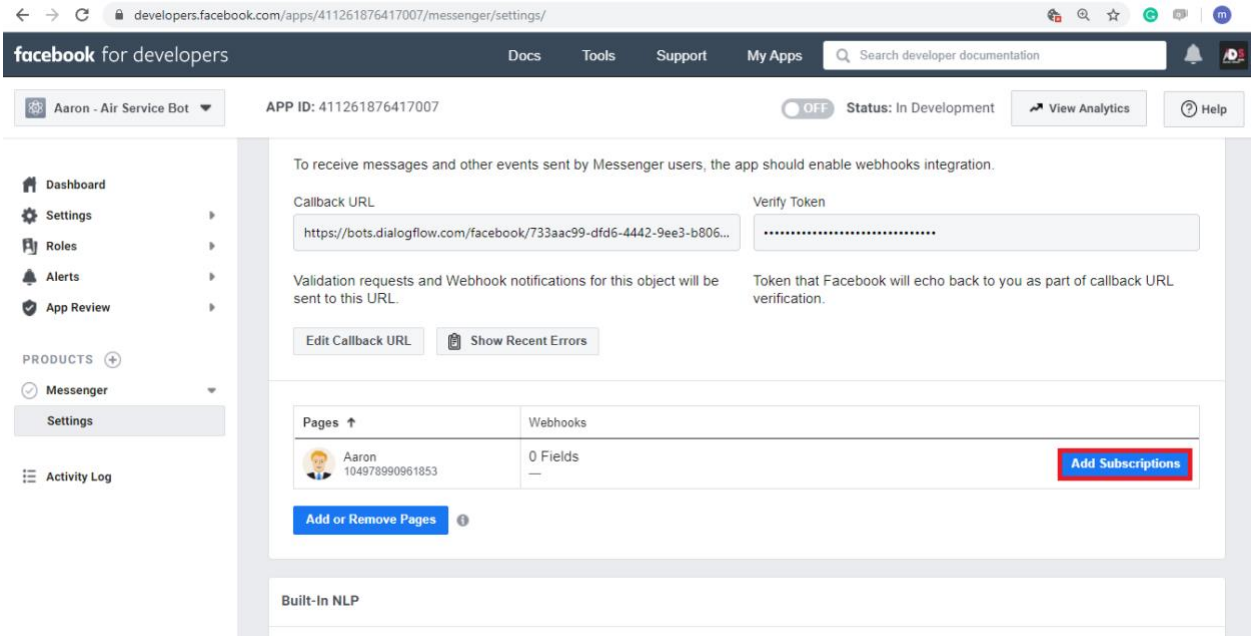


You will be navigated to **Edit Callback URL** window, paste the callback URL that was copied previously in the specified field. In the **Verify Token** field, specify the same

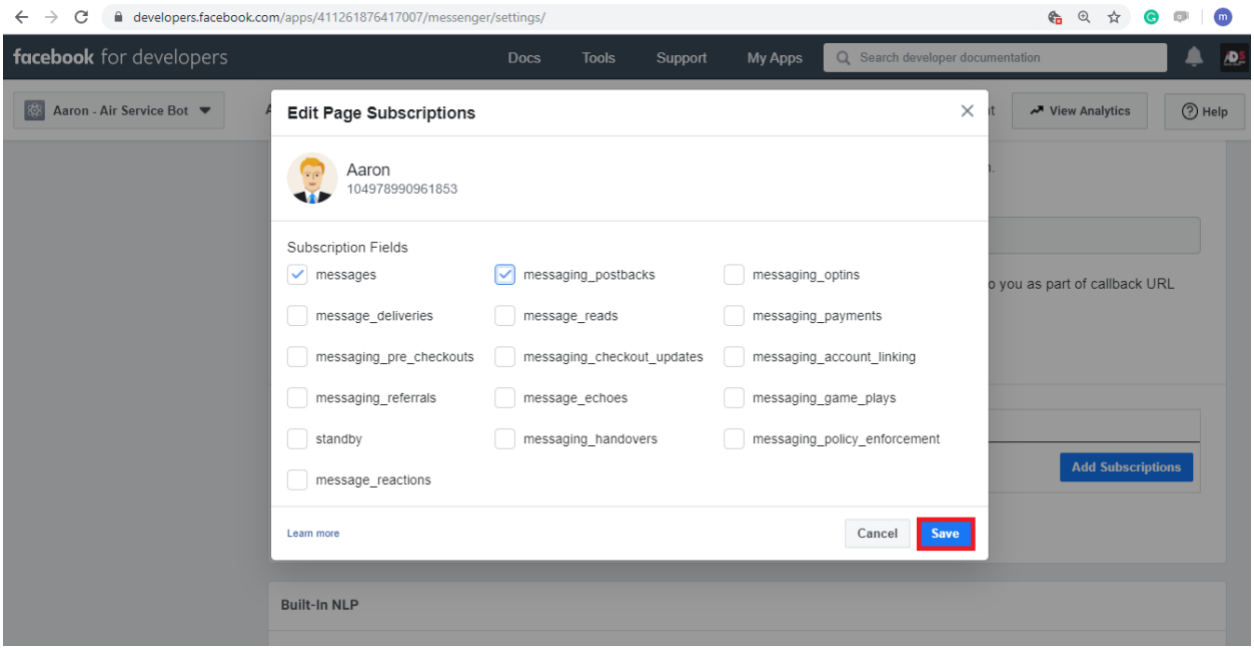
Facebook verify token that you provided in Dialogflow as below and click on **Verify and Save.**



Under the Webhook section you, will find **Add Subscription** button besides the page that you had selected during token generation, and click on **Add Subscription**.



Once you click on the **Add Subscription** then you will navigate to **Edit Page Subscriptions** Window. In this window, you need to select the subscription fields like **messages** and **messaging_postbacks.** Now, click on **Save.**



Once you are done with the Webhook and Page Subscriptions setup, you can integrate the Node JS code with the chatbot you have created.

Step #7 | Integration with Node JS and Google's Dialogflow

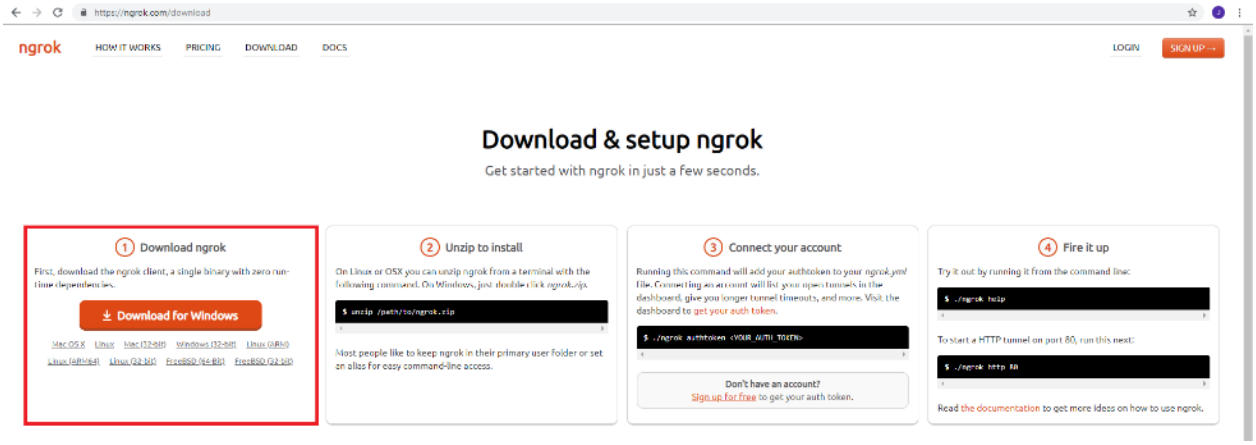
Once you are done with the integration of Dialogflow with Facebook Messenger, navigate to the workspace folder where the code exists, and open command prompt.

Run **node app.js** to run your application.

Application is ***running on 8000*** port. Remember this for later use.

Open the browser and download ngrok by using the below link, https://ngrok.com/download (ngrok helps your app to get secure URL to your localhost server).

You need to install the ngrok based on the system requirement as provided below,



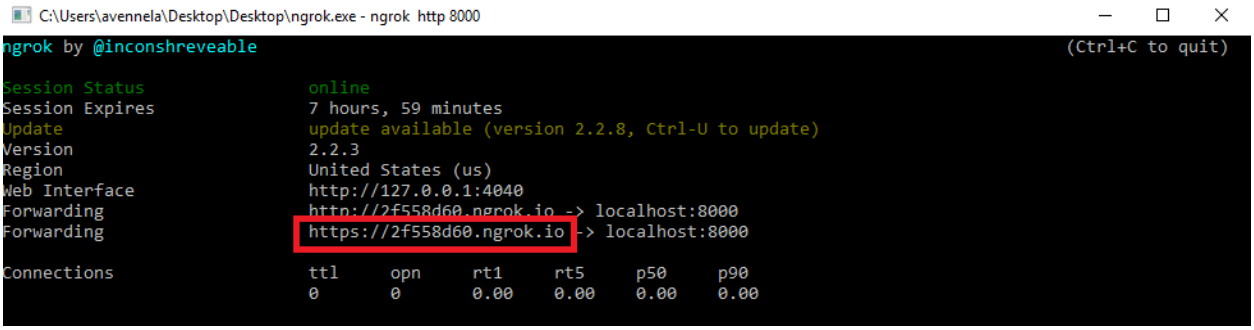
After downloading the ngrok, extract the downloaded folder and run the **ngrok.exe** file. Now, give the following command and click on the Enter button.

ngrok http <Your-Application-Port>

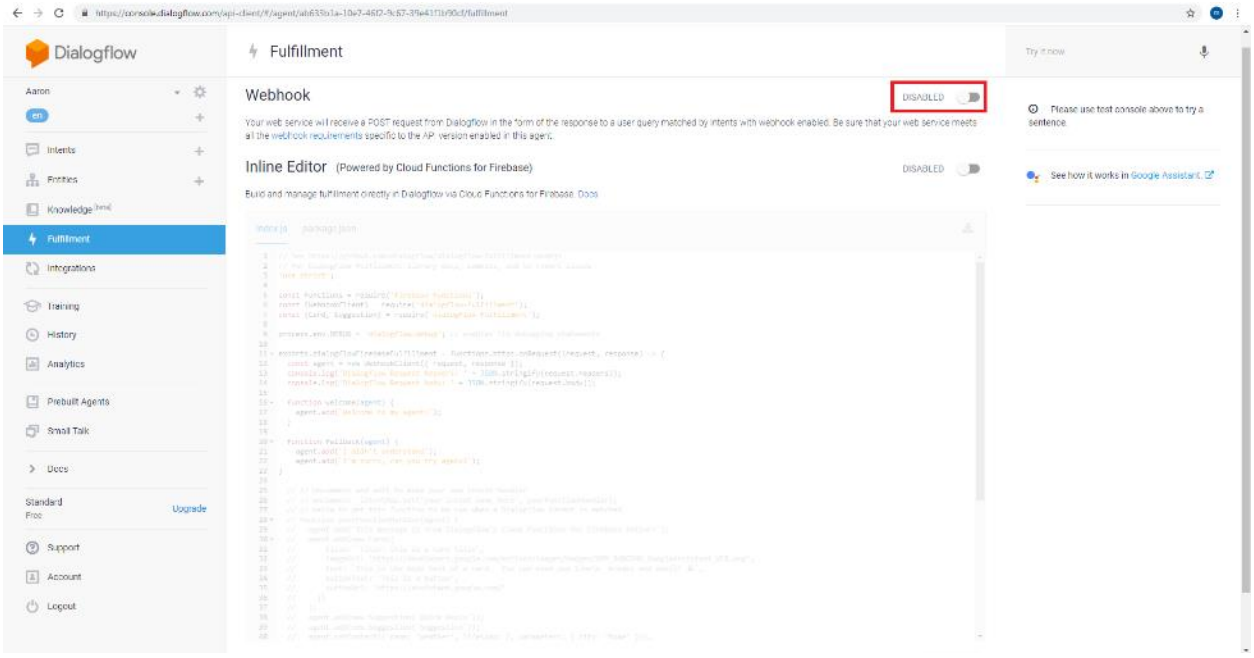
Example : ngrok http 8000

Once you run the application successfully with the above command, you will get the URL as, ***https://<random_code>.ngrok.io***. Copy this for later use.

Note - You should not close this window until you stop running your Node JS application

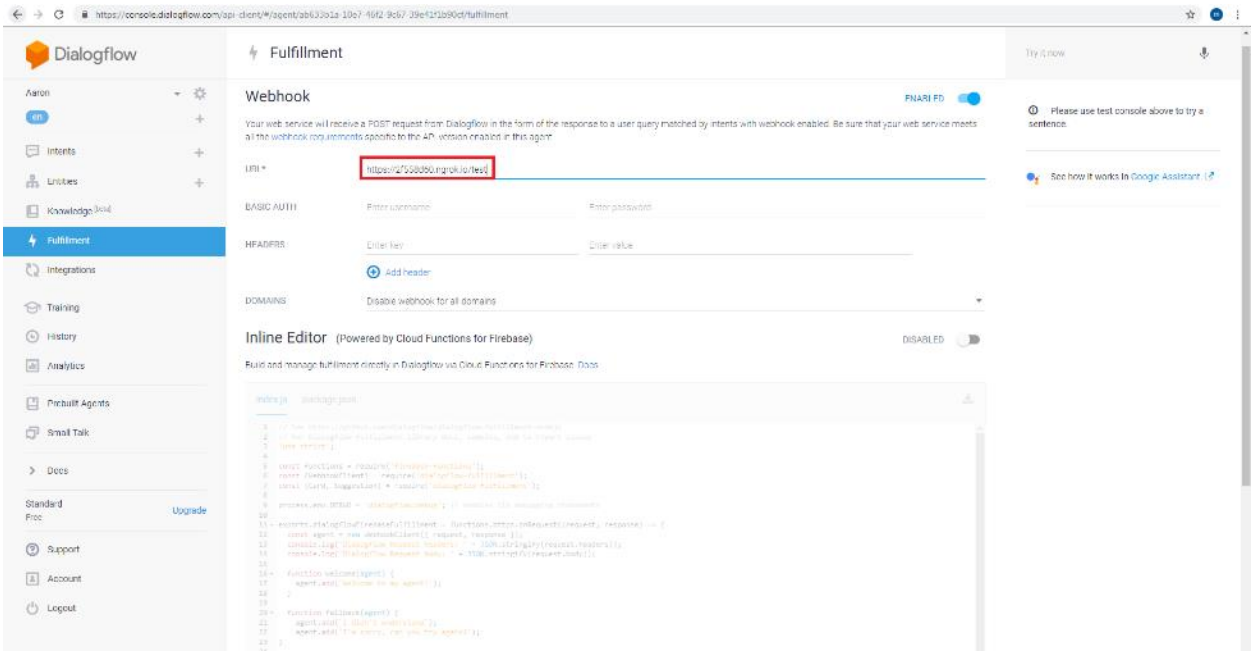


Now, navigate to the Dialogflow Fulfillment section and enable the button which is showing as **DISABLED** initially as shown below,

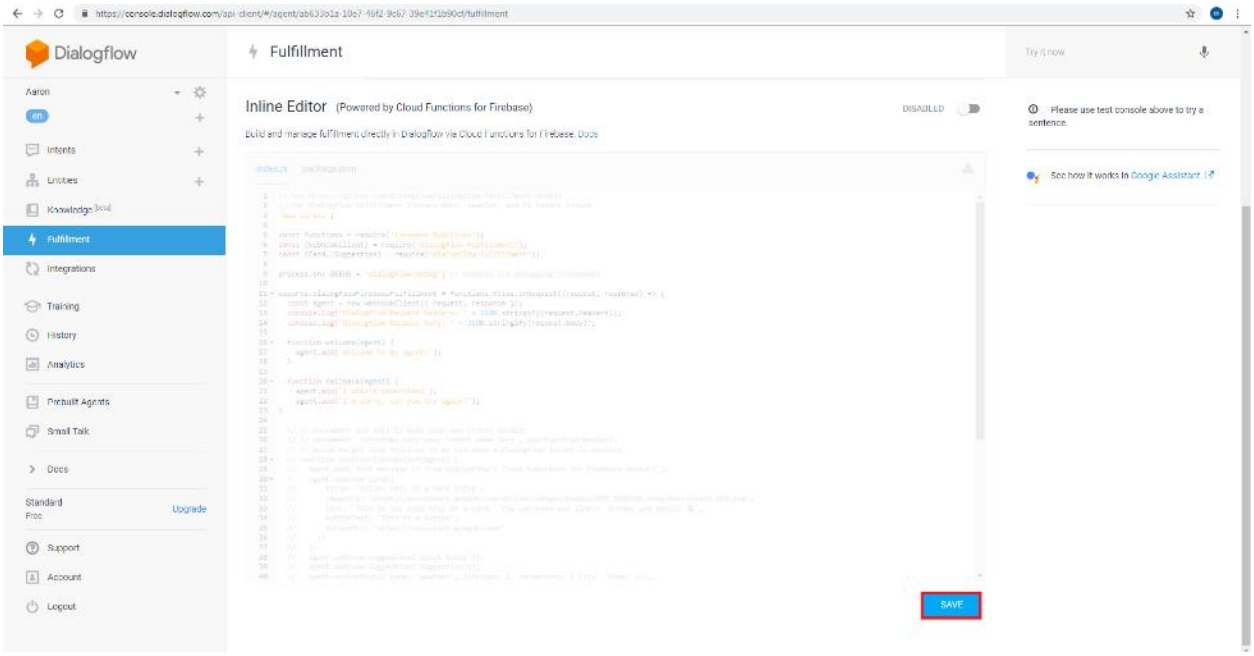


Once the Fulfilment section is enabled, you will need to provide the ngrok URL and it acts as a webhook which is an endpoint to your Node JS application.

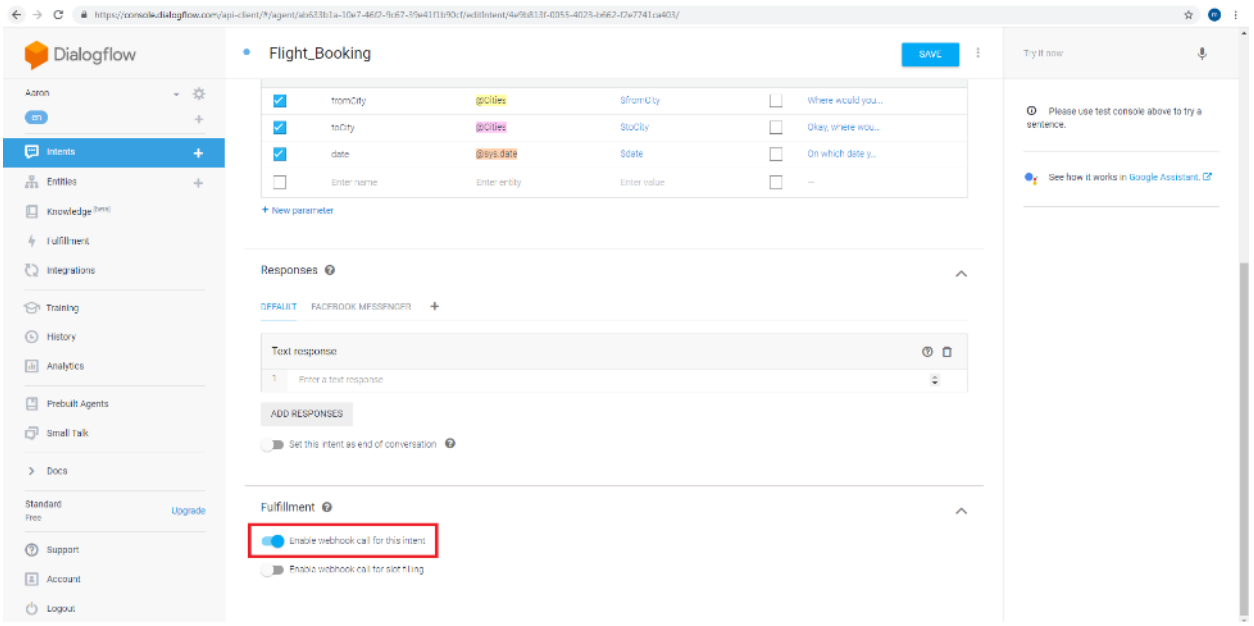
Now, click on **Save** button.



Now, click on the **SAVE** button.



To get responses from your Node JS application to Dialogflow enable the fullfilment in all the required intents as shown below,



Step #8 | Testing Aaron Chat bot in Facebook Messenger

If you want to test the bot that you created, place your cursor over the **Send Message** button.

To start the conversation with chatbot that you created, click on **Test button** from the options.

Now, a chat window will be popped up to start the conversation with your bot. For starting the conversation with the chatbot click on **Get Started**.

Hurrah! With this lab you were able to create your first chat bot with Google's Dialogflow using Facebook Messenger.

For any questions regarding the lab please feel free to reach out to innovation@miraclesoft.com. **We hope you enjoyed creating bots with us!**