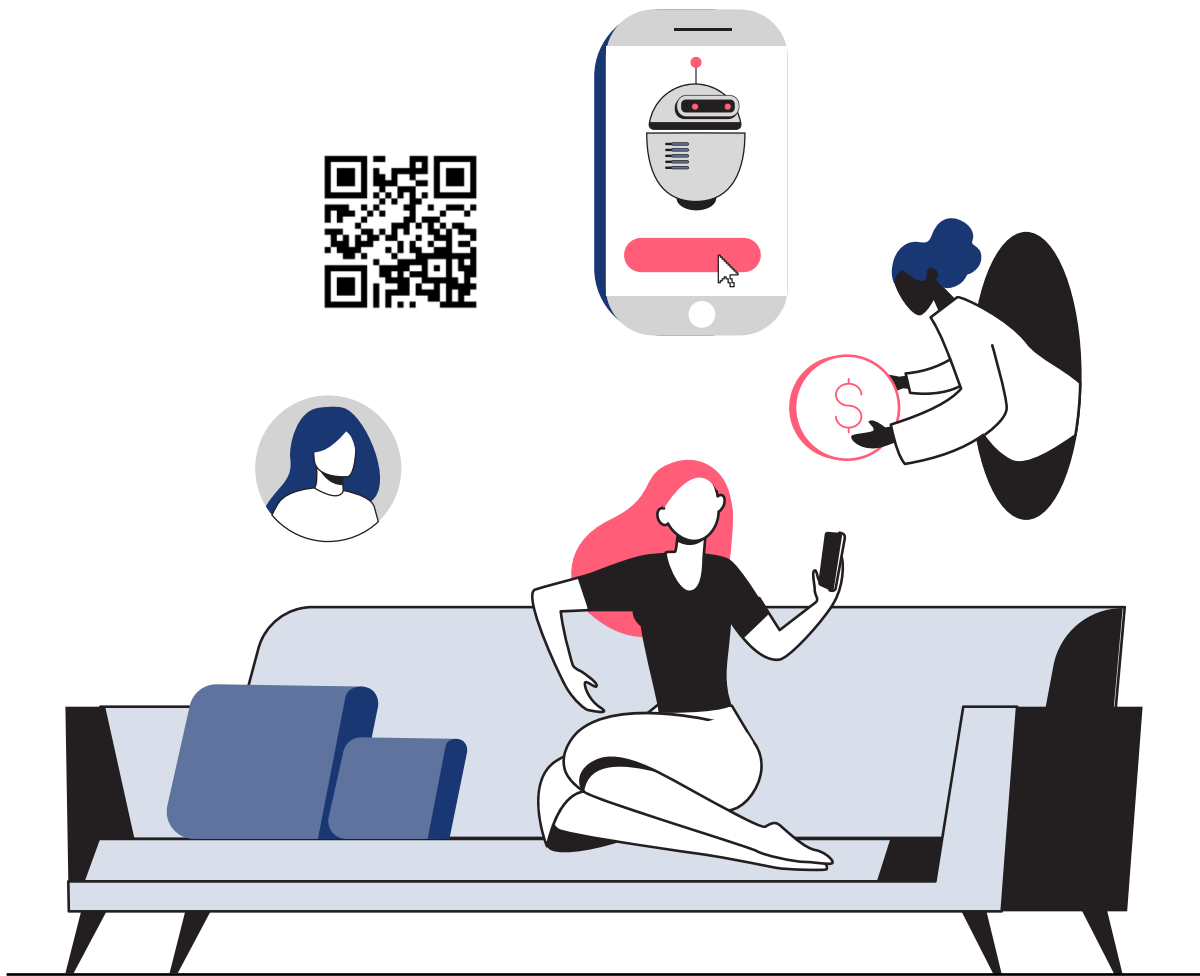# Best Practice
for Bot Building

Bots are transforming the way businesses interact with their customers and employees. At Gupshup, we're committed to helping you build the best possible bot for your requirements. Our substantial experience and expertise in building hundreds of bots ourselves, and watching thousands of bots built on our platform helps us describe the best practices, tips and tricks that will make the bot building process efficient.

*We strongly recommend reviewing this document carefully and adhering to it as closely as possible. Doing so, will help build a bot with great user experience, while reducing the time and cost required to build it.

01 Decide on the objective of the bot
State down all the functions, including but not limited to objectives, vision and use-cases, that you expect your bot to perform so that you can design your flow accordingly.

02 Design a clear flow
Before you start building your bot, you should design an extensive and concise user flow so that you have a clear idea of the elements you'll need when building your bot. Keep your flow as simple as possible so as to avoid confusions during the development.

03   Give your bot a personality

The personality you give your bot will define the tone of your bot's replies to the users. Since you are making a conversational bot, the first thing to keep in mind is that the bot should have an engaging personality so as to keep the user hooked during the conversation. Use your logo and even a relevant chat background.

## 04   Structured vs Unstructured conversations

Structured conversations are ideal when the content is naturally organized, or there are limited choices. Unstructured conversations are better when there are too many options to choose from. You can also use a selective combination of both. While the unstructured conversation will be more flexible, it requires NLP which will take more effort to build and give a lower accuracy.

05   Identify what can be automated

Identify all the use-cases for the bot that could come up and can be automated.

06   Explore bot builder

Spend time testing and familiarising with the various features of the bot builder platform. Being comfortable with the platform beforehand will allow you to use different features to make your bot more engaging and conversational.
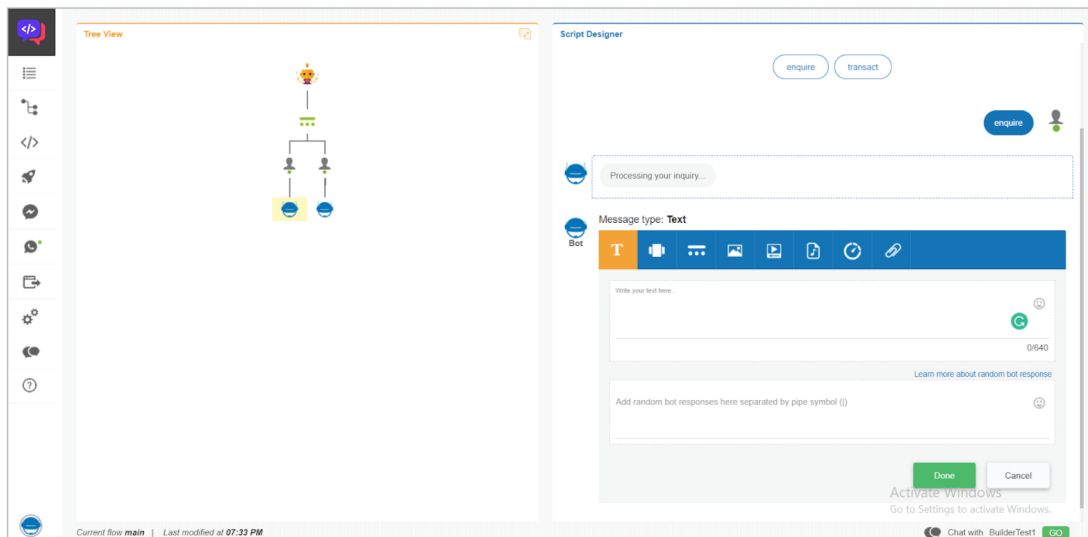

(Left)The chat flow; (Right) Different elements that can be used for a bot response

07   Welcome message

Your welcome message should be designed to inform the users that they will be talking to a chatbot. Since it is the starting point of your conversation, the welcome message should be followed by options for the user where they identify their purpose of using the bot (list what your bot can do). Another good personalisation technique is to customize your message for a returning user. This could simply be a greeting or it could be a promotional offer based on past user activities.

08 Using rich media

The use of rich media in your replies keeps the user engaged in the conversation. Eg: Screenshots of the service/guide or images of the products you are providing can be useful in converting a lead into a sale, or using rich media you can guide your customer better in case of a query.
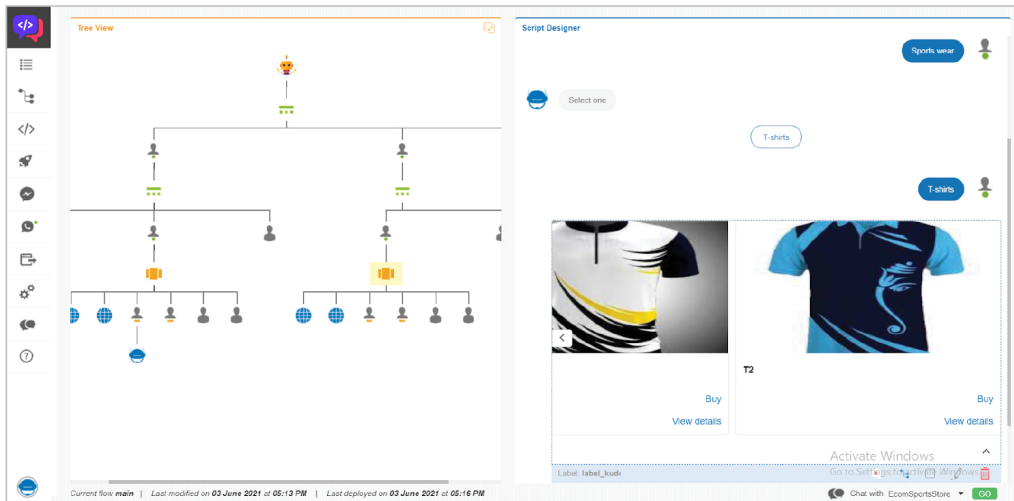
09 Edge cases

Take into account all the edge cases that could come up due to user inputs and incorporate solutions to them in your flow.ities.

10 Fallback/Error messages

In case your bot is unable to understand a particular user input, you should have a fallback message ready, which should firstly let the user know that the bot failed to understand the query, and then should check with the user if they want to reframe their query or go back to a previous step. If the user input is complicated to understand by the bot, give the user an option to transfer the chat to a human agent. Another option is for the bot to recognise some keywords like home/exit/back/restart, etc, so as to take the user back to a prior point in the conversation.

11 Conveying bot's understanding

In case you are using NLU (Natural Language Understanding) or NLP (Natural Language Processing) techniques to interact with the user, it is a good practice to convey to the user what your bot has understood from the input to make sure that you are on the same page as the user.

12   Use of NLP

Define the scope of the NLP capabilities of the bot. Leaving the scope undefined or poorly defined is the biggest risk to an NLP project. Gupshup's 'Flow Bot Builder' provides the most basic form of NLP in-built: keyword recognition. To build a more advanced bot, the following things will have to be kept in mind:

A. Intents and entities

> Building the NLP model involves defining intents and entities.
> Intents are the actions a user can take, the things they can do.
Think of them as the verbs in the sentences (see examples below).
> Entities are the objects on which the action is to be taken.
Think of them as the nouns in the sentences (see examples below).
1. "I want to buy a shirt": "buy" is the intent, "shirt" is the entity
2. "What is the balance in my savings account": "balance" is the intent, "savings account" is the entity

B. Model building

> Specify the intents related to your bot scope
> Specify the entities related to your bot scope

C. Context management

> A user might put in additional requests in the middle of the transaction. In that case, Context Management helps the bot keep track of the previous user demand and also apply the new
filter to help the customer better. Below is an example:
User query 1 - "I want to see Nike t-shirts"
User query 2 - "I want to see red t-shirts"
Now, with Context Management, the bot will recognise that the user wants to see "Red Nike t-shirts"

13   Casual conversations

Incorporate replies to some common casual chat questions so as to give your bot a more authentic human-like feeling. Make sure that the bot can redirect the conversation back to the issue at hand.

14   Testing

Test your bot, before deploying it, for all use cases as well as edge cases. Identify errors/gaps, if any, and correct them. Check for the bots' error responses.

In-built chat test enables you to test the elements of the bot alongside the development
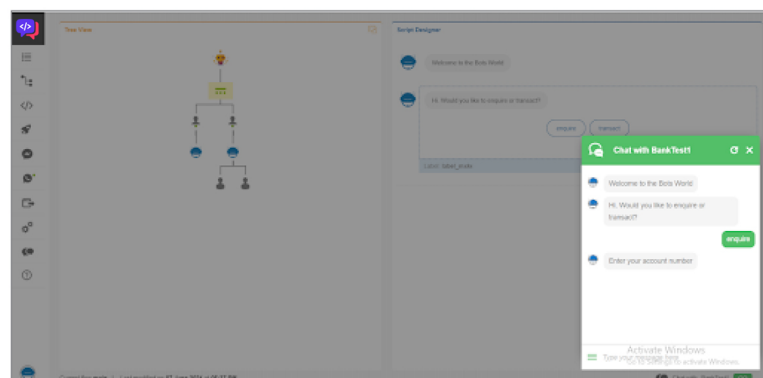
15 Training

Share examples of potential user queries. The more queries and variations you can provide, the better the model will be. This will be used to train the bot. Also ensure that your bot is trained continuously as more the number of training inputs, better will be the bot's accuracy and its capacity to understand user queries.
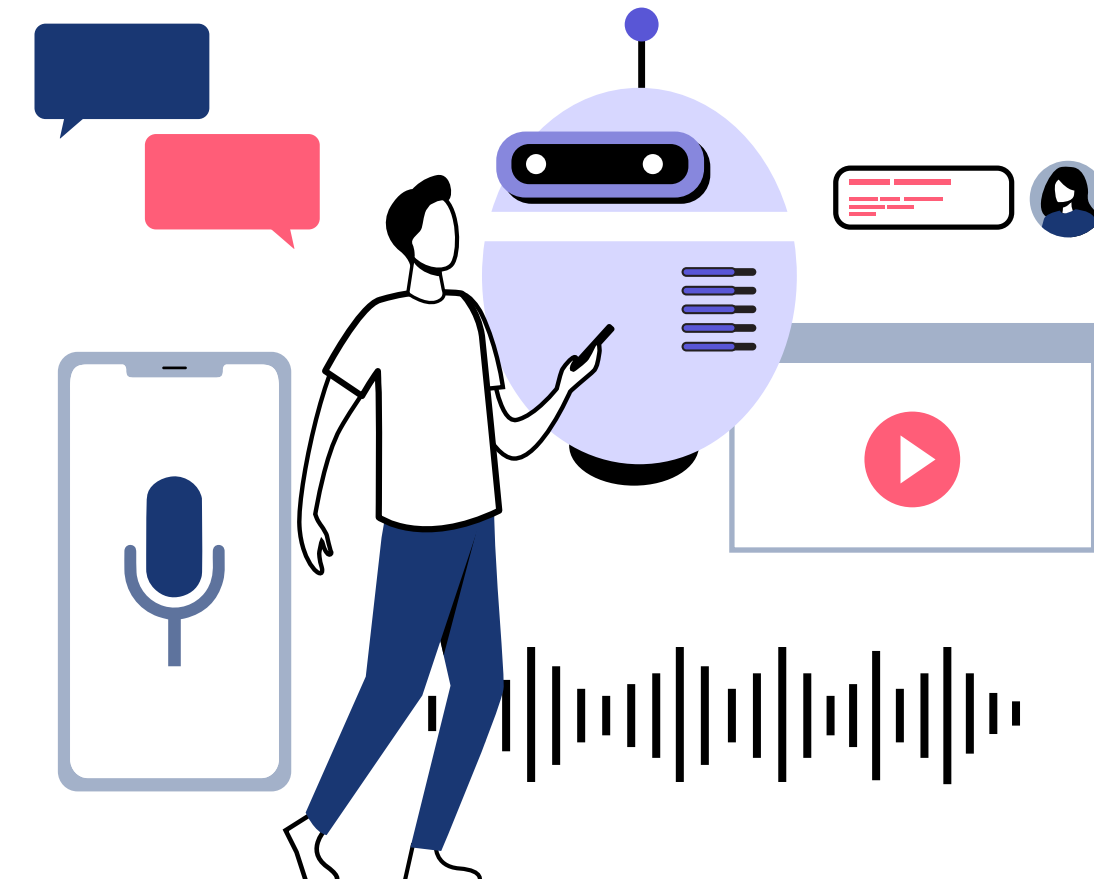
16 Training

There are a few things you should check when integrating an API with your bot:
> Is your API being used in production?
> Is your API available publicly so the bot can integrate with it?
> Is the API documented?
> Is your API setup to handle the anticipated bot traffic?

The easier you can make it to learn and understand your API, the less time and effort it will take. While adding APIs you should also provide sample code that shows a working sample of the API. This can be either in cURL format, as a Postman collection or a sample code snippet in any language.
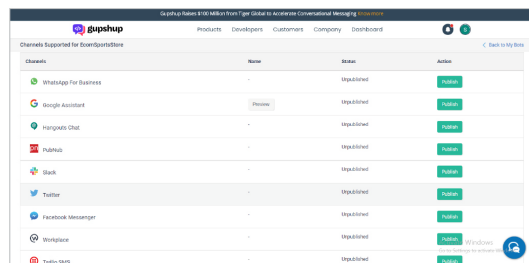
17 Custom Backend

Usually, the chat bot is responsible for handling user interactions while the data is stored in backend systems like ERP, CRM or HR tools. You can also build a custom backend to support the unique requirements of the chat bot. Custom backend systems require additional development separately from the bot.

18 Channels

› **Text:** Gupshup supports a wide variety of text messaging channels including WhatsApp, FB Messenger, Slack, Skype, Gupshup IP and more. (see gupshup.io for the updated list)

› **Voice:** Gupshup supports voice channels like Google Home and more. (see gupshup.io for the updated list)

› **Web:** Gupshup supports web widget as a channel. This enables you to set up a chat widget on your website using which users can chat with your bot.

› **App:** Gupshup supports in-app SDK. This enables you to embed a chat screen in your app using which users can chat with your bot.

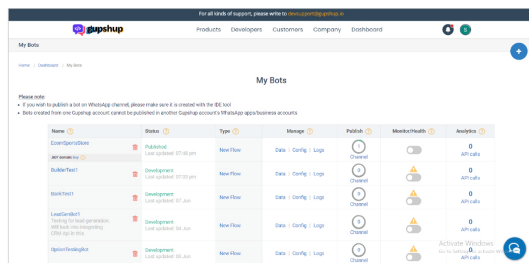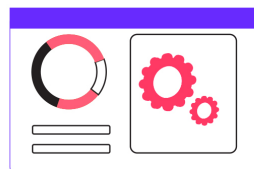With Gupshup's Flow Bot Builder you can publish your bot on 20+ channels

19 Analytics

Once your bot is live, continuously analyse the data generated on the "My Bots" dashboard and identify points which can be improved to increase your value addition with the bot. Custom reports, if any, can be handled in two ways:
1. by exporting bots' events to an external analytics system
2. by building a custom reporting dashboard tied to the bot

The dashboard keeps a track of all your bots and also provides links to the data stored

20 Updates

Research for new features and timely update the capabilities of your bot in pace with the market so as to derive the most value from your bot.

Visit http://store.gupshup.io to view some bots built following the above guidelines.
Head over to https://www.gupshup.io/webinars/ for tutorials and webinars related to bot building.
Read more about bot builder services: https://www.gupshup.io/developer/bot-platform
Find the Flow Bot Builder here:
https://www.gupshup.io/developer/docs/bot-platform/guide/whatsapp-api-documentaton
For a detailed discussion you can also reach out at devsupport@gupshup.io