



Admin Console Guide

Last updated September 2023



Contents

1. Introduction to VICA
2. Setting up your Knowledge Base
3. Training your chatbot
4. Setting up your VICA account
5. Best practices to maintain & optimise your chatbot
6. Glossary



Introduction to VICA

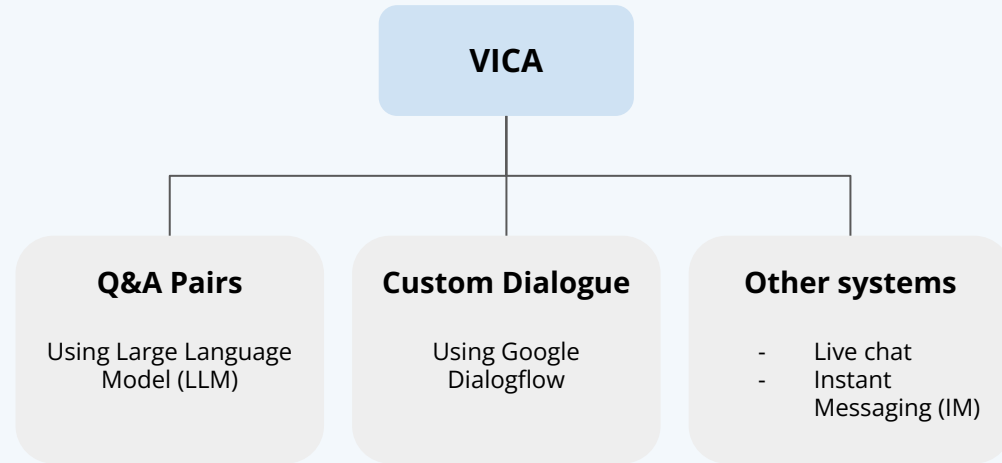
VICA is GovTech's next-generation citizen assistant platform that leverages Artificial Intelligence (AI) to develop chatbots that are efficient for government agencies to operate, and useful for end users seeking assistance.

The VICA team works on providing agencies with easier chatbot training processes in order to provide members of public quicker and more direct answers to their queries, leading to greater overall satisfaction with government services and increased trust in government agencies.

VICA engine

VICA platform will now leverage two powerful engines to enhance your chatbot experience. This dual-engine approach ensures that VICA can handle a wide range of conversational scenarios, from complex interactions to specific queries, delivering a seamless and comprehensive experience for users.

The Custom Dialogue engine, powered by Dialogflow, provides a robust framework for creating dynamic and guided conversational experiences. Additionally, the Q&A engine, powered by the OpenAI Embedding Model, utilizes advanced techniques such as natural language understanding to better match highly relevant and accurate responses to user queries.





Why did we introduce Q&A Pairs?

By introducing Q&As powered by the powerful OpenAI Embedding Model, the system's capability to comprehend the context and nuances of a wide range of queries has been significantly improved. This integration marks a major enhancement in the ability to deliver accurate and relevant responses to members of the public.

With Q&A, the system is capable of recognising:

- "I want to book an appointment for a health screening"
- "How to book a health screening?"
- "Medical check up appointment booking"
- "Health check up appointment. how to book?"

That all the variations mean the same thing as:

"I want to book an appointment for a health screening"

With the transition away from the Dialogflow engine, agencies can now eliminate the need for including training phrases solely for the purpose of training the system. This shift has streamlined and optimized the system's ability to grasp the meaning and context of user queries without relying on explicit training phrases to train the bot to comprehend.

When should I use Q&As?

Recommended where users are likely to ask specific queries and expect direct responses.

When you build your chatbot knowledge base using the Q&As, the engine is designed to understand the user query and match it to the appropriate Q&A pair.

It is important to note that all matching systems cannot guarantee 100% accuracy, as a vague or ambiguous query can still lead to an unexpected best match.

While the text “100 days” may not be an exact match to “less than 183 days”, the engine is still capable of identifying the relevant information and providing accurate responses.

User Query

I'm in Singapore for 100 days, am I a tax resident?

Query is matched to Q&A pair of:

Q: “What happens if a foreigner stays in Singapore for less than 183 days?”

A: If a foreigner stays in Singapore for less than 183 days, they will be regarded as a non-resident.

Tax residency status will be reviewed at the point of tax clearance when they cease employment based on the tax residency rules.

Example of Q&As

I forgot my Singpass password. How do I reset it?

04:29PM

If you have set up your Singpass 2FA, you can reset your password instantly online:

1. Visit [Singpass Portal](#)
2. Select 'Services' on the top scroll bar
3. Select 'Reset password' and enter your NRIC or FIN details, followed by Singpass Face Verification or SMS One-Time Password
4. Create your new Singpass password

Alternatively, you may request for a PIN mailer to be sent to your registered address. You will receive your PIN mailer in 3 working days.

04:29PM



When should I use custom dialogue?

Complex dialogues: Recommended for agencies that require handling transactional flows or have dialogues with multiple levels of intents beyond the basic L1 intent.

Custom dialogue allows you to handle multi-turn/transactional conversations and provide personalized responses based on user inputs.

User Query

I want to check my own income tax status.

In order for me to retrieve your filing status, I will need you to login with your Singpass.

Login with Singpass

I do not have Singpass

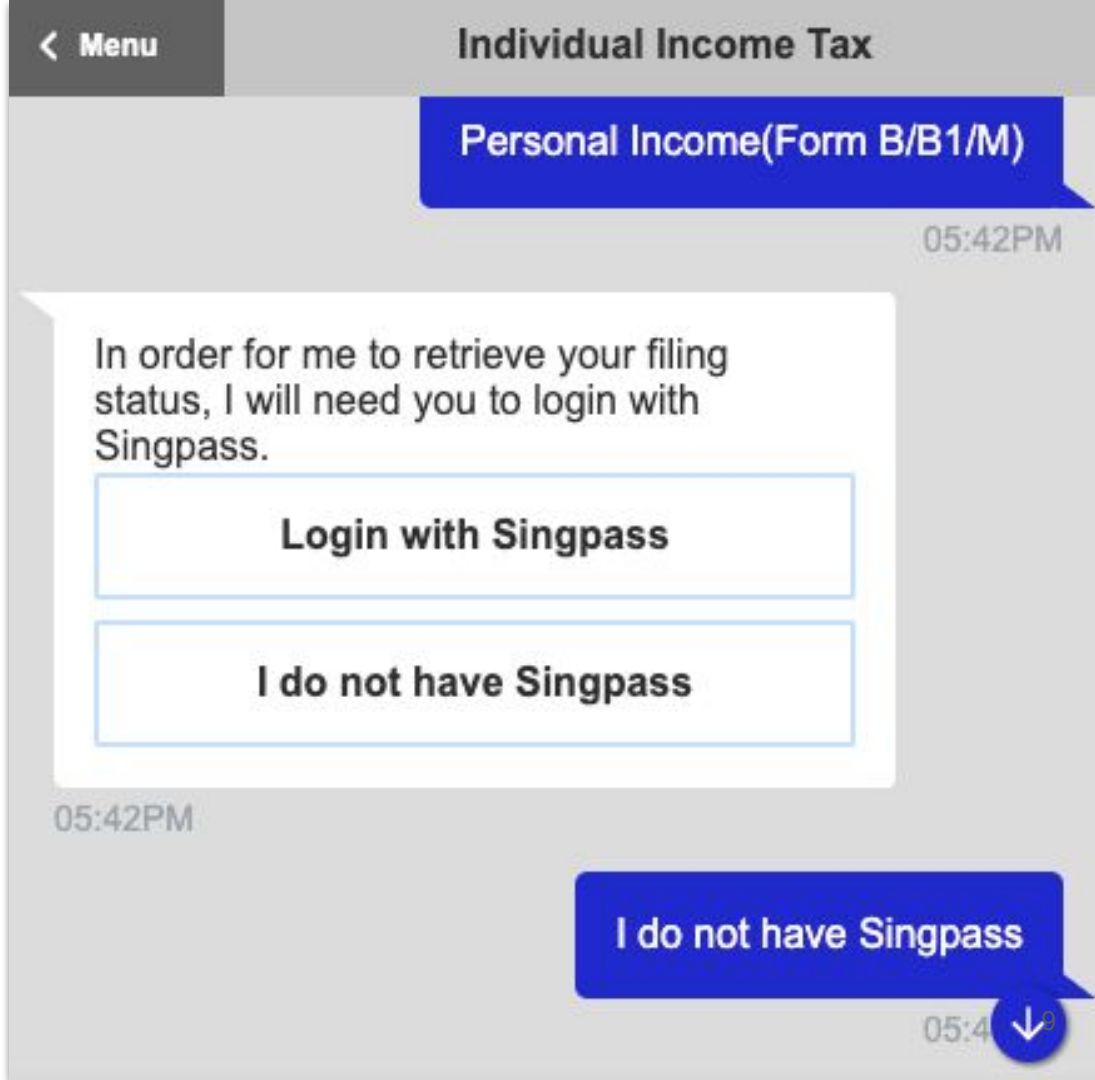
Here is your income tax status. [Show results here]

You may register and activate your Singpass 2FA at www.singpass.gov.sg.

For individuals who are not eligible for Singpass, you may apply for a Singpass Foreign Account (SFA) by clicking the button below

Apply for SFA

Example of Custom Dialogue





Q&A or Custom Dialogue?

When considering whether to use the Q&A or custom dialogue in creating your chatbot knowledge base, it's important to understand the specific scenarios where each option excels.

It is worth noting that eventually, all chatbots will need to incorporate Q&As for knowledge base creation. By utilizing the Q&As, your chatbot will benefit from improved performance in understanding user queries, as it leverages advanced techniques like natural language understanding.

Custom Dialogue

Recommended for integration with external systems

1. Fulfilling transactions
2. Information from APIs/other databases
3. Answers based on entities
4. Singpass authentication
5. Live chat

Require training phrases to guide bot

Q&A Pairs

(Primary way of creating your knowledge base)

Recommended for:

1. Specific query direct responses (Like FAQs)

No training phrases required



Custom Dialogue vs Q&A Pairs

Which dialogue design works best for the query, “**What is the LTV of a condo?**”

Custom Dialogue

Master question (L1)
What is the loan-to-value (LTV) of a property in Singapore?

Follow-up question (L2)

- HDB
- Condominium

HDB

Response:
The loan-to-value (LTV) of a HDB flat is 80% of the purchase value.

Condominium

Response:
The loan-to-value (LTV) of a condominium is 75% of the purchase value.

Q&A Pairs

(Primary way of creating your knowledge base)

Master question:
What is the loan-to-value (LTV) of a HDB?

Response:
The loan-to-value (LTV) of a HDB flat is 80% of the purchase value.

Master question:
What is the loan-to-value (LTV) of a condominium?

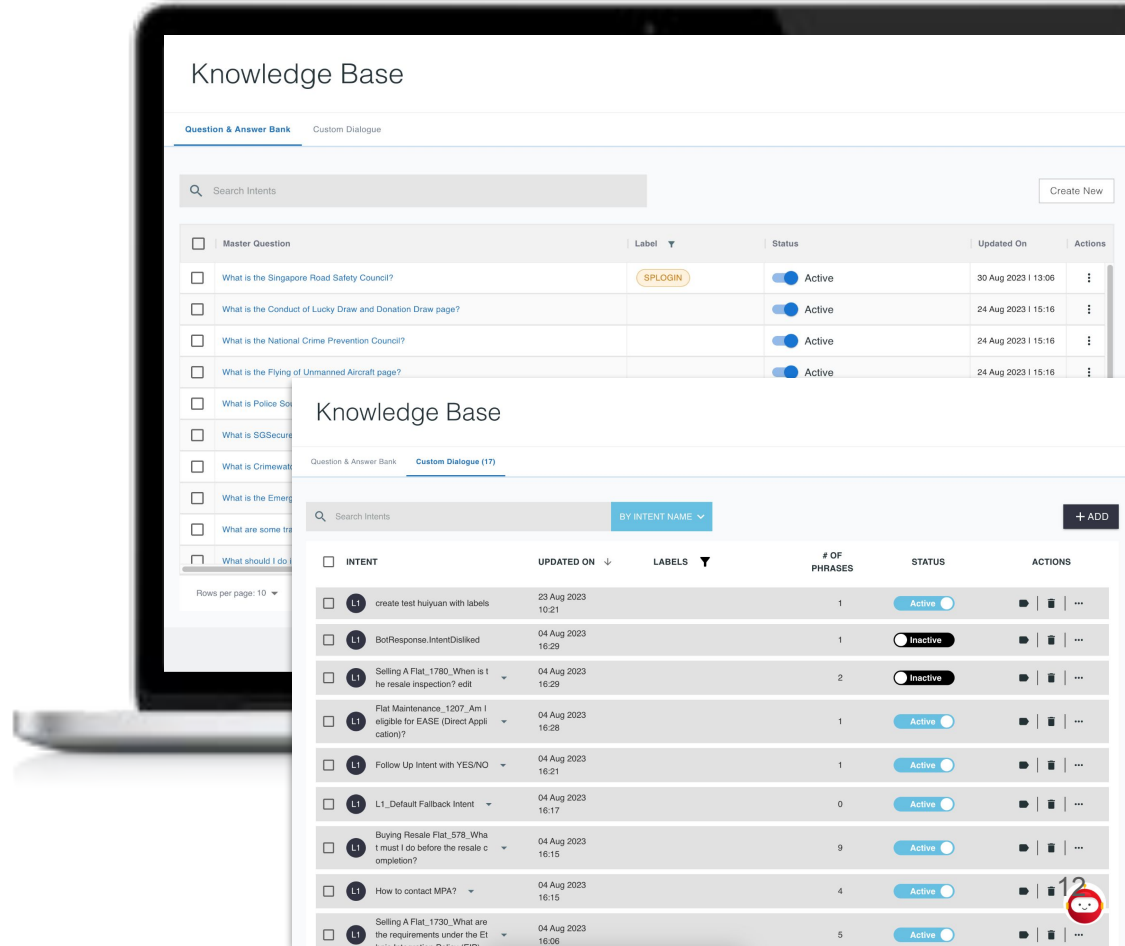
Response:
The loan-to-value (LTV) of a condominium is 75% of the purchase value.



Where can I create my knowledge base in VICA admin console?

To access all your knowledge base content, including Q&As and custom dialogue, simply navigate to the "Knowledge Base" section within the VICA platform. Here, you'll find two sections:

- Question & Answer Bank
- Custom Dialogue





Setting up your Knowledge Base



Creating Q&A Pairs

General Info

- Select whether you're creating a master question for (1) chatbot only or (2) chatbot & browse page
- Choose whether you want your master question to be featured on 'Hot Topics'

Master Question

- Type in your master question

Bot Response

- Create bot response for master question
- Choose the response type you want your bot to produce when the master question is asked

Create New Q&A SAVE

General Info
Set up general information to create an intent.

Available in: ? Chatbot only To be featured on "Hot Topics" ? No

Status ? Active

Master Question ?
Create a master question that corresponds to the bot responses on the right, and ensure that it is well-crafted as it may be presented to users as part of the "Relevant Questions" section.

Master Question *

Bot Responses ?
Bot responses allows to create multiple dynamic response variations that can be triggered in response to user input. These variations can also be tailored to specific platforms to ensure that your responses are optimized for each channel.

DEFAULT +

+ Add Response

Choose Response Type

- Text Response
- HTML
- Image
- Image Gallery
- Card
- Quick Replies
- Table Card
- Carousel
- Mini Carousel
- Video
- File
- Custom Payload

© MOL VA VICA ADMIN. 2020
Created with chat app admin.
Build Version 1.0.0.2385

14



Creating Custom Dialogue

Contexts

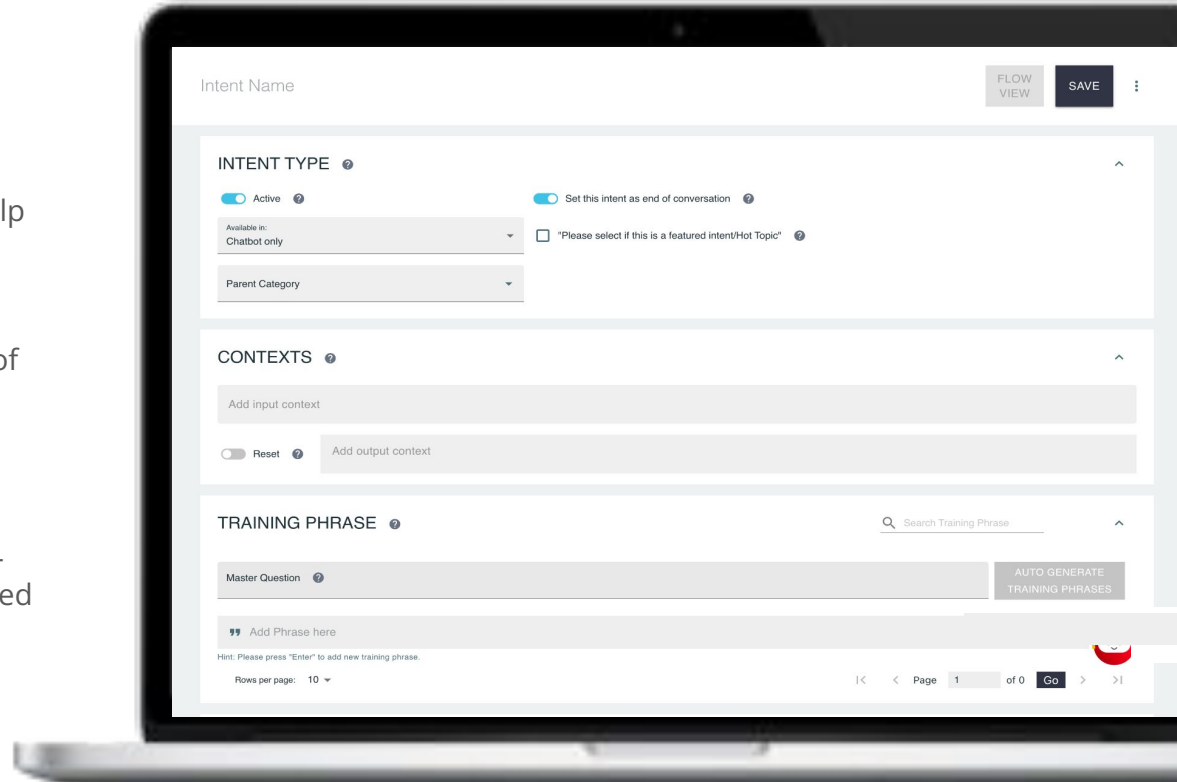
- Similar to natural language context to help the bot better understand intent

Training Phrase

- Train bot on the different permutations of intent

Responses

- Create response for intent
- Choose the response type you want your bot to produce when the intent is triggered

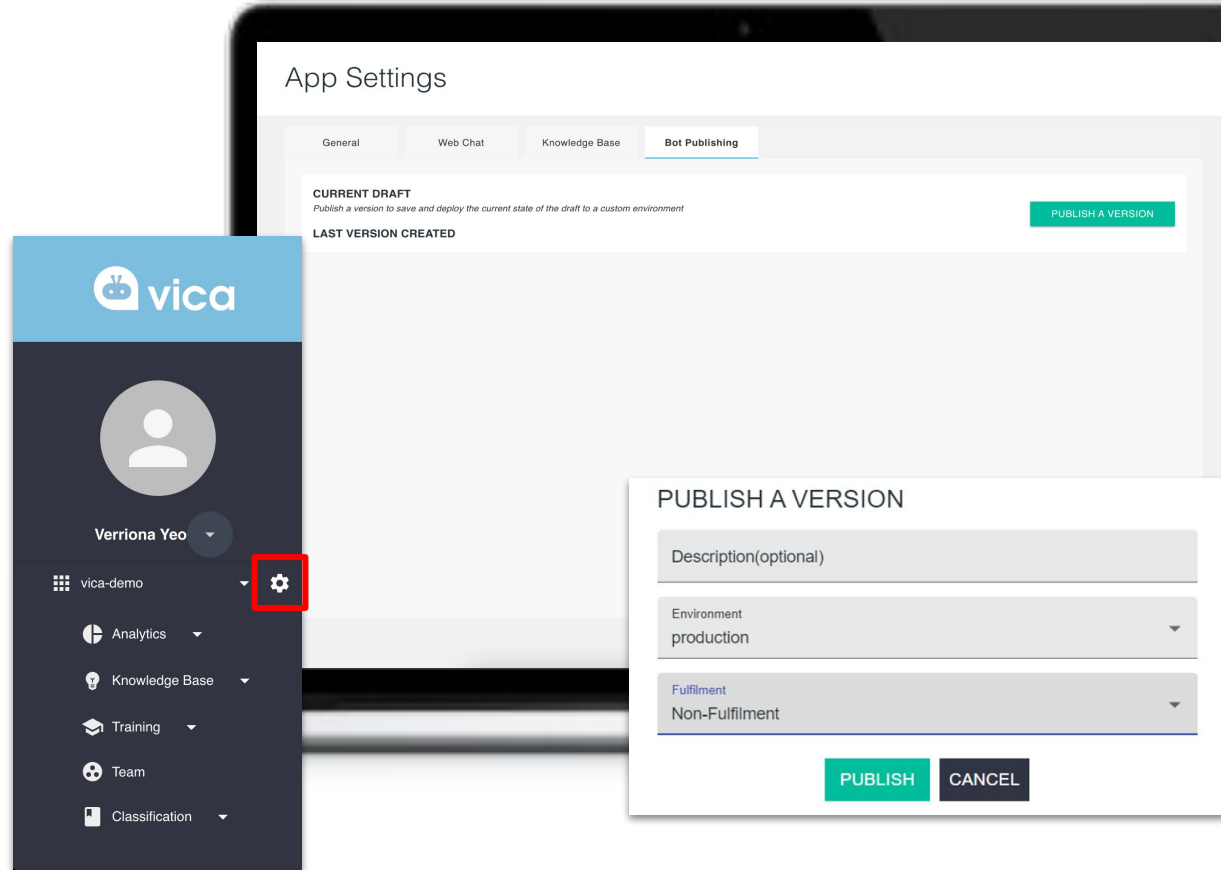




Bot Publishing

By default, any changes made in VICA Admin Console is always in “Draft” environment. You will need to publish your content in “Production” environment to see the live changes on your webpage.

1. In VICA Admin Console, click Gear icon
2. Click on “Bot Publishing” tab
3. Click “Publish a version”
4. Select “production” as environment
3. Non-Fulfilment as default for chatbots.





To take note

Existing agencies - Should I move my existing intents into Q&As?

Yes, it is advised to review your knowledge base and move any intents that only have L1 (no follow-up intents) over to the Q&As unless it is absolutely necessary to keep them in custom dialogue. This would ensure a more streamlined and efficient knowledge base management.

Not needed



Training your chatbot



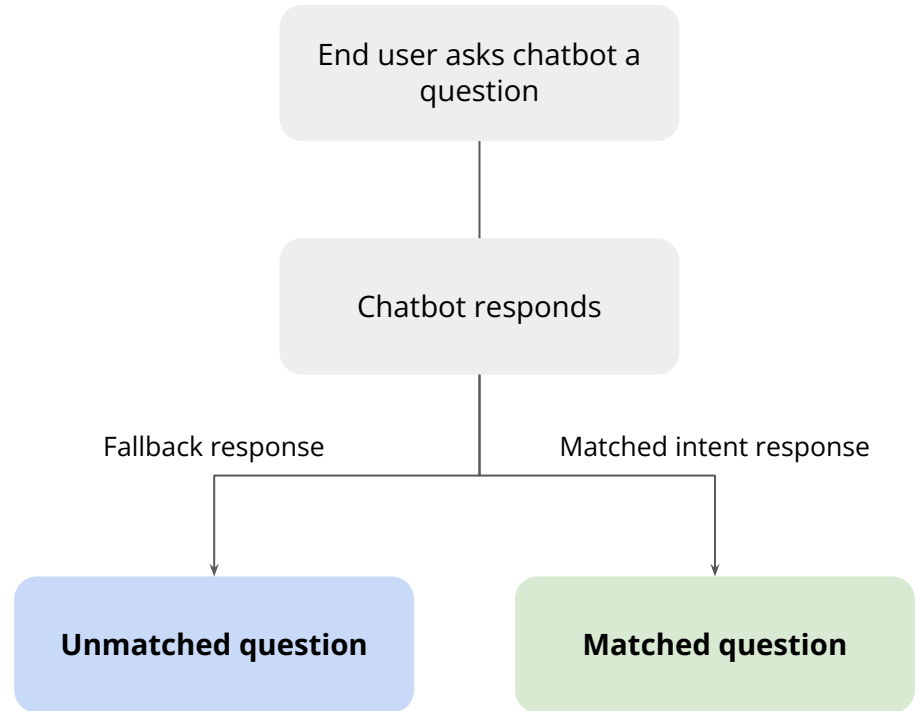
Training

Training your chatbot is essential to ensure that your chatbot improves and gets better at managing queries from your end users.

There are 2 types of questions you can train:

Unmatched questions = Chatbot did not understand the user's query and hence, responded with a fallback response.

Matched questions = User's query matched an intent in your knowledge base. However, it could be a mismatch, which means that user's query was not answered accurately.

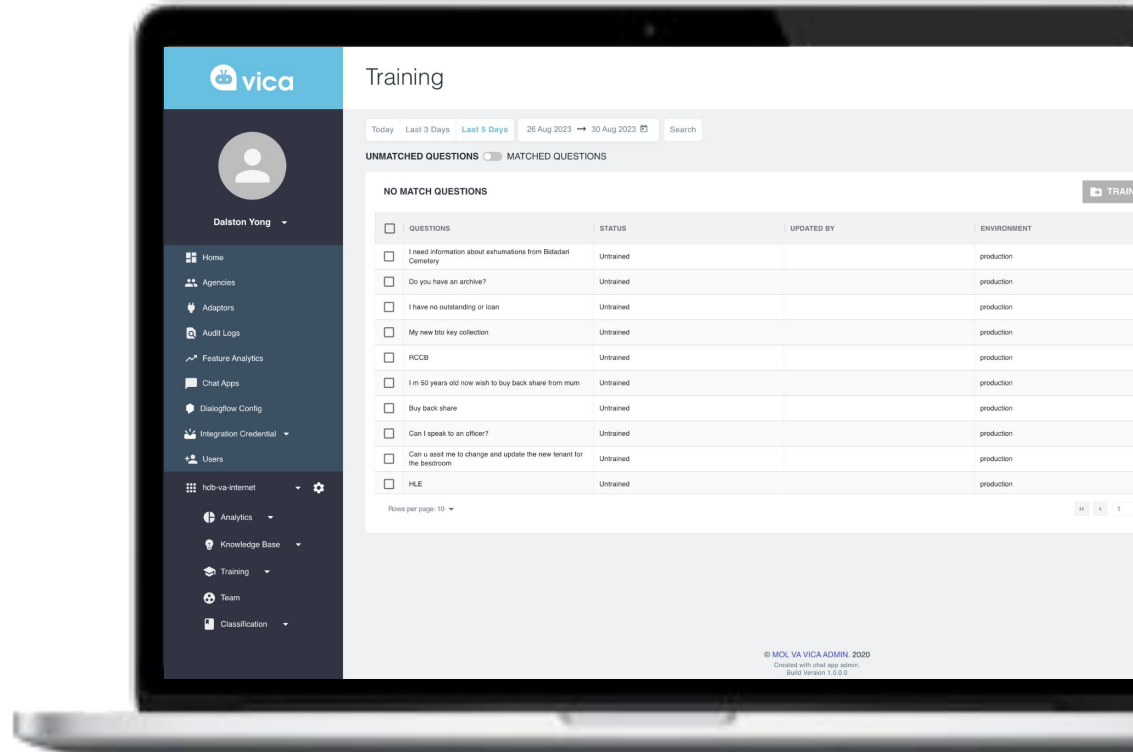




Training **unmatched** user queries

Unmatched user queries often indicate a knowledge gap in your chatbot knowledge base.

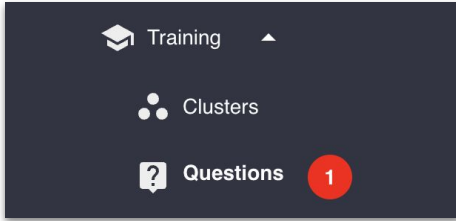
This means that there may be questions or topics that your chatbot is not equipped to handle.



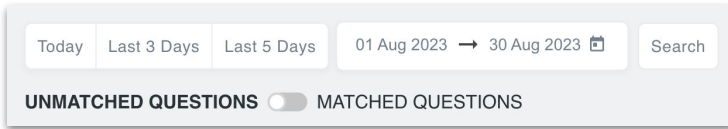


Training **unmatched** user queries

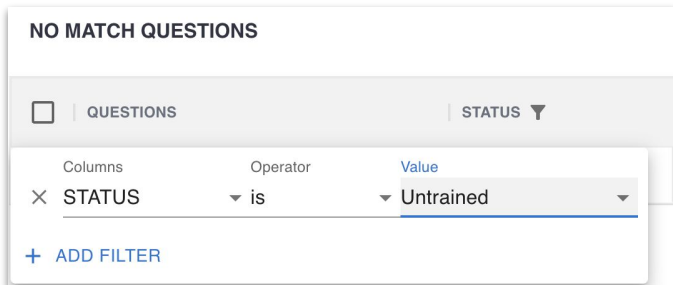
1. On the menu panel, go to Training > Questions



2. Select time frame and toggle to **'Unmatched Questions'**



3. Filter for **'Untrained'** questions to see all unmatched user queries that have not been trained



4. Go through unmatched user queries and click on the query to view chat transcript to understand the context of the conversation

SESSION ID - 09cce4af-b1e2-45d2-9de1-2ad8e72169ff			Train	Back
POSTED	SOURCE	MESSAGE		
29 Aug 2023 10:00	User	{\"event\":{\"name\":\"welcome\",\"from\":\"user\"}}		
29 Aug 2023 10:00	Chatbot	Intent - Default Welcome Intent		
29 Aug 2023 10:00	Chatbot	Intent - Default Welcome Intent		
29 Aug 2023 10:00	User	Buying a Flat		
29 Aug 2023 10:00	Chatbot	Intent - Buying New Flat_341_What are the fees involved in buying a new flat?		
29 Aug 2023 10:00	Chatbot	Intent - Buying New Flat_341_What are the fees involved in buying a new flat?		
29 Aug 2023 10:00	User	hahah		
29 Aug 2023 10:00	Chatbot	Intent - Default fallback intent		



Training **unmatched** user queries

5. Select an unmatched user query (or multiple similar user queries) to train
6. Train chatbot by
 - Creating a new Q&A Pair, **OR**
 - Adding selected user query as a training phrase for Custom Dialogue

Train unmatched queries ✕

By creating new Q&A Pair, or adding training phrases to Custom Dialogue will enable the bot to answer similar questions in future.

Create New Q&A Pair

Add Selected to Custom Dialogue

If you choose to create a new Q&A Pair, you'll be brought to the Q&A creation page:

The screenshot shows the Q&A creation page for a chatbot. At the top, the user input "hahah" is shown in a text box with a "SAVE" button to its right. Below this is the "General Info" section, which includes a "Set up general information to create an intent." instruction. It features two dropdown menus: "Available in:" set to "Chatbot only" and "To be featured on 'Hot Topics'" set to "No". There is also a "Status" section with a toggle switch labeled "Active". The "Master Question" section contains a text input field with "hahah" entered. The "Bot Responses" section has a "DEFAULT" label and a plus sign icon to add more responses. The page is styled with a light blue and white color scheme.

Training **unmatched** user queries



If you choose to add selected query to Custom Dialogue, you can either

- Select an existing intent to add training phrase to, **OR**
- Create a new intent

Select/Create an intent to add the previously selected questions as training phrases.

🔍 Search Intent

Intents	Most recent training phrases
<ul style="list-style-type: none">How to contact MPA? - noDefault Fallback intent-DummyFlat Maintenance_1207_Am I eligible for EASE (Direct Application)? - noFlat Maintenance_1207_Am I eligible for EASE (Direct Application)?Selling A Flat_1780_When is the resale inspection? editBotResponse.IntentDislikedFlat Maintenance_1208_How much do I have to pay for the EASE improvement items? - 1-room	<p><i>Please select an intent on the left panel to see the most recent training phrases tied to the selected intent.</i></p>

✓ CONFIRM ✕ CANCEL

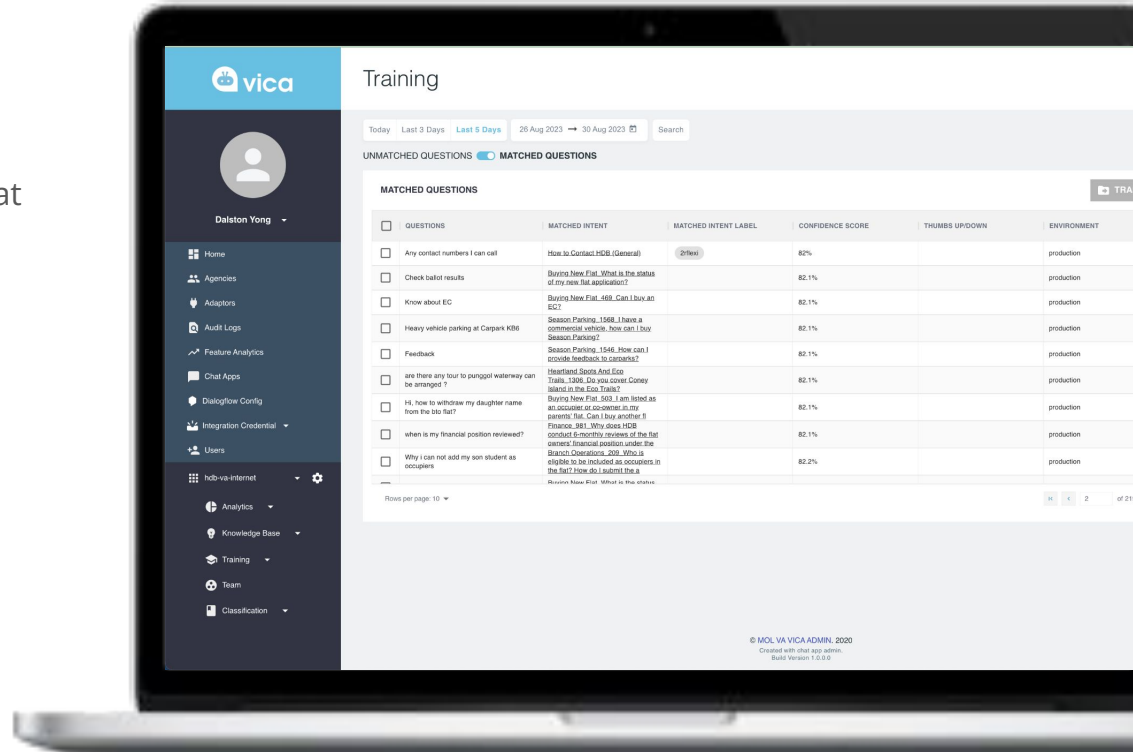
OR

💡 CREATE NEW



Training **matched** user queries

Matched user queries may not always mean that a user's questions have been answered accurately. It is possible for the user's query to be matched to a wrong question/intent and hence, produce a wrong response to the user.

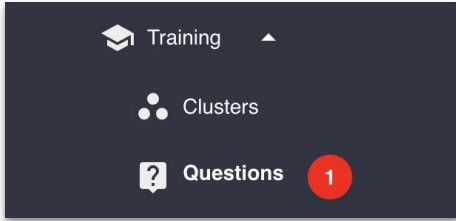


© MOL VA VICA ADMIN. 2020
Created with Intel App Admin
Build Version 1.0.0.0

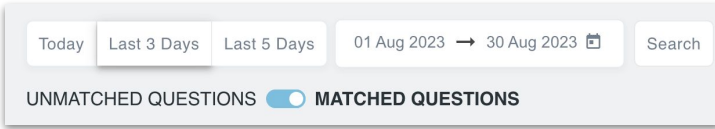
Training **matched** user queries



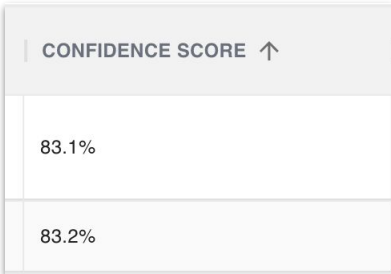
1. On the menu panel, go to Training > Questions



2. Select time frame and toggle to 'Matched Questions'



3. Sort confidence score in ascending order, to work from lowest confidence score (highest chance of mismatch)



4. Go through matched user queries and click on the query to view chat transcript to understand the context of the conversation. You may find mismatched question and answers.

POSTED	SOURCE	MESSAGE
26 Aug 2023 15:08	System	Intent - Default Welcome Intent
26 Aug 2023 15:08	Chatbot	Intent - Default Welcome Intent
26 Aug 2023 15:08	Chatbot	Intent - Default Welcome Intent
26 Aug 2023 15:08	User	Buying a Flat
26 Aug 2023 15:08	Chatbot	Intent - Buying New Flat_341_What are the fees involved in buying a new flat?
26 Aug 2023 15:08	Chatbot	Intent - Buying New Flat_341_What are the fees involved in buying a new flat?
26 Aug 2023 15:09	User	may i know if my application for sbf is successful?
26 Aug 2023 15:09	Chatbot	Intent - (IFAQ)Renovation & Repair Contractors_94_How will I be notified regarding the outcome of my applicat
26 Aug 2023 15:09	Chatbot	Intent - (IFAQ)Renovation & Repair Contractors_94_How will I be notified regarding the outcome of my applicat
26 Aug 2023 15:09	User	where do i check?
26 Aug 2023 15:09	Chatbot	Intent - Default fallback intent
26 Aug 2023 15:09	Chatbot	Intent - Default fallback intent

Training **matched** user queries



5. Select a matched user query (or multiple similar user queries) to train

6. Train chatbot by

- Creating a new Q&A Pair, **OR**
- Adding selected user query as a training phrase for Custom Dialogue

Train matched queries ✕

By creating new Q&A Pair, or adding training phrases to Custom Dialogue will enable the bot to answer similar questions in future.

Create New Q&A Pair

Add Selected to Custom Dialogue

If you choose to create a new Q&A Pair, you'll be brought to the Q&A creation page:

hahah SAVE

General Info
Set up general information to create an intent.

Available in: ? To be featured on "Hot Topics" ?

Chatbot only ▼ No ▼

Status ?
 Active

Master Question ?
Create a master question that corresponds to the bot responses on the right, and ensure that it is well-crafted as it may be presented to users as part of the "Relevant Questions" section.

Master Question *
hahah

Bot Responses ?
Bot responses allows to create multiple dynamic response variations that can be triggered in response to user input. These variations can also be tailored to specific platforms to ensure that your responses are optimized for each channel.

DEFAULT +

Training **matched** user queries



If you choose to add selected query to Custom Dialogue, you can either

- Select an existing intent to add training phrase to, **OR**
- Create a new intent

Select/Create an intent to add the previously selected questions as training phrases.

🔍 Search Intent

Intents	Most recent training phrases
<ul style="list-style-type: none">How to contact MPA? - noDefault Fallback intent-DummyFlat Maintenance_1207_Am I eligible for EASE (Direct Application)? - noFlat Maintenance_1207_Am I eligible for EASE (Direct Application)?Selling A Flat_1780_When is the resale inspection? editBotResponse.IntentDislikedFlat Maintenance_1208_How much do I have to pay for the EASE improvement items? - 1-room	<p><i>Please select an intent on the left panel to see the most recent training phrases tied to the selected intent.</i></p>

✓ CONFIRM ✕ CANCEL

OR

💡 CREATE NEW



Setting up your VICA account



User Management

A user is a collaborator of VICA.

Create a VICA account for your agency staff on this page, then add them to manage an app on the Team Management page. Users can be in multiple teams.



Change user properties

Revoke user access

Reset password; affected user will get an email with a password reset link

Search anything in this table

Add collaborator

User Management

Q Search + ADD

NAME	EMAIL	AGENCY	WOG ADMIN	ACTIONS
Adelle Lim Rui Jia	rui_jia_lim_from.tp@tech.gov.sg	GOVTECH	Yes	
Agency Admin	aa@tech.gov.sg	GOVTECH	No	
Agency Editor	ae@tech.gov.sg	GOVTECH	No	
Agency Viewer	av@tech.gov.sg	GOVTECH	No	
Ana Ng	ana_ng@psd.gov.sg	PSD	No	
Angela Goh	angela_goh_from.optimum@tech.gov.sg	GOVTECH	Yes	
Ankita Gupta	ankita_gupta@tech.gov.sg	GOVTECH	Yes	
Baskar	baskar_singh_from.optimum@tech.gov.sg	GOVTECH	Yes	
Dalston Yong	dalston.yong@theoptimum.net	GOVTECH	Yes	
Daniel Chong	daniel_chong@tech.gov.sg	GOVTECH	Yes	

Rows per page: 10 < > Page 1 of 7 Go >

© MCL VA VICA ADMIN, 2020
Created with chel app admin.
Build Version 1.0.0.2385



Team Management

A user is a collaborator of VICAs.

Create a VICAs account for your agency staff on this page, then add them to manage an app on the Team Management page. Users can be in multiple teams.

Change role of team member

Admin: can manage team and intents

Editor: can only manage intents

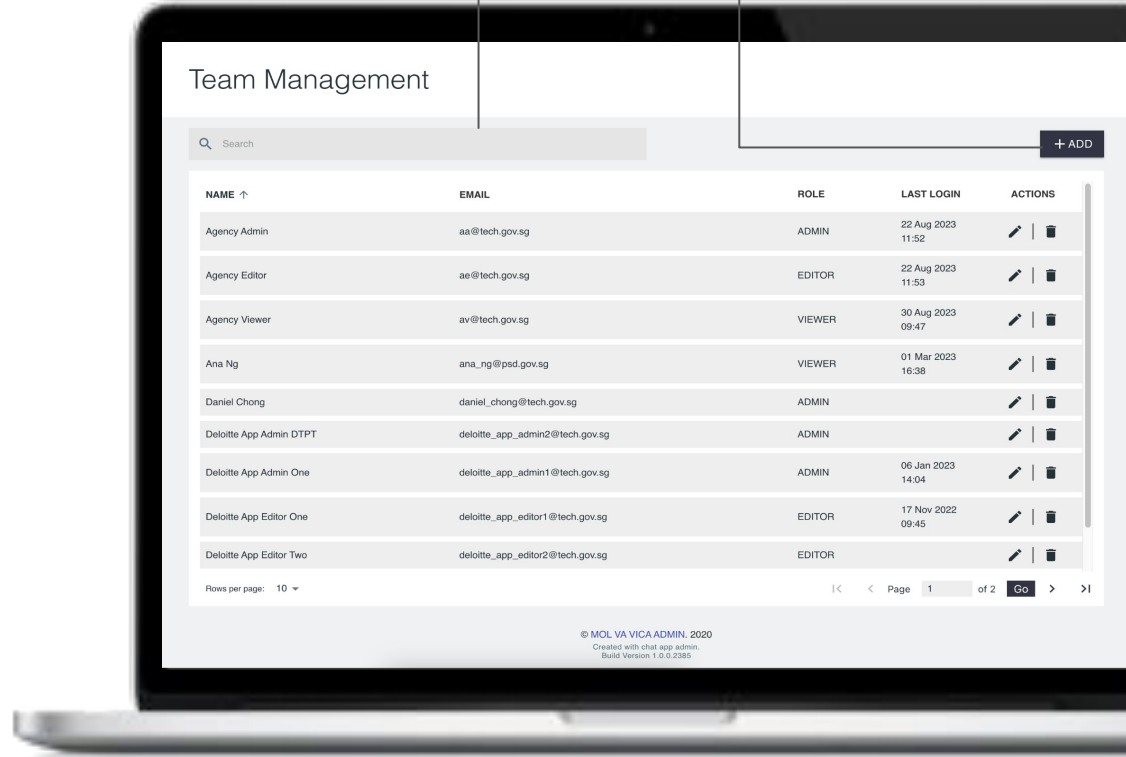
Viewer: can only view intents



Remove member from this team

Search anything in this table

Add any staff who has a VICAs account created from the User Management page





Best practices to maintain & optimise your chatbot



Best practices

General

- Always update your Knowledge Base regularly so that your chatbot responses are accurate and helpful
- Train your chatbot often by reviewing matched and unmatched questions

For Q&A Pairs

- Keep the questions and answers concise and avoid copying irrelevant answers from website.
- If the questions or answers are very similar (question-answer pair), they are most likely the same. Consider merging them together.

For Custom Dialogue

- In each intent, you'll need to provide a set of training phrases, which are example utterances for an intent just like the above. A minimum of 10 training phrases per intent is recommended to train a good natural language understanding (NLU) model.



Applying the 4 Maxims of Conversations in Q&A Design

1

Quality

- Answers to the questions must be true and up-to-date



“Where there’s smoke, there’s a liar...”



Applying the 4 Maxims of Conversations in Q&A Design

2

Quantity

- Make your answer to the question as informative as needed
- Do not withhold necessary information
- Do not overload them with too much information too

E.g. If users want to make an appointment to discuss about housing loan, let them know the contact number and/or address directly.





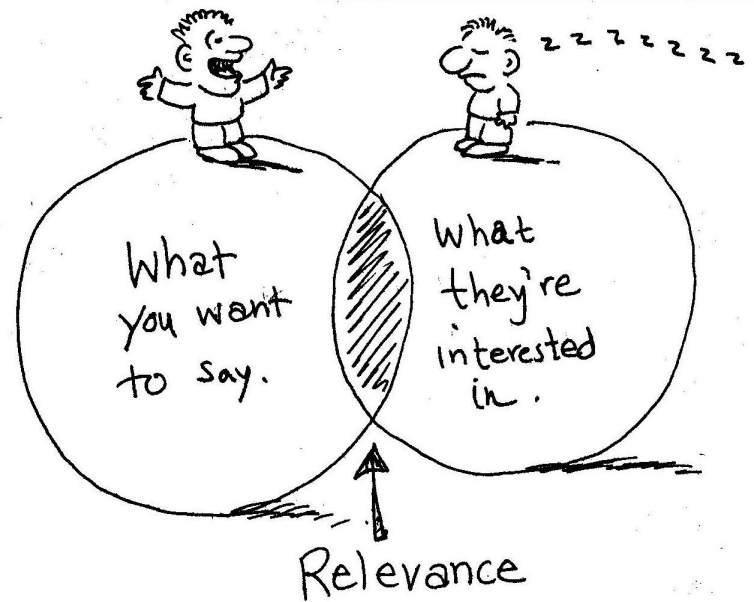
Applying the 4 Maxims of Conversations in Q&A Design

3

Relevance

- Words in the answers that are relevant to the question
- Do not overload them with irrelevant information or verbosity

E.g. If users want to apply for something, tell them how or where to apply. Have another question to handle the eligibility of the application.





Applying the 4 Maxims of Conversations in Q&A Design

4

Manner

- Words in the answer must be clear and concise
- Do not use complex words if your user persona would not understand, unless they are absolutely needed or well understood by the population





Glossary

Glossary

Term	Definition
Intent	A user's intention when asking a question to your chatbot, or the topic of your master question. E.g. Intent: Season parking, Master question: How do I apply for season parking at my block's nearest carpark?
Master question	A question that a user may ask your chatbot. It should be well-crafted as it may be presented as a question under the 'Relevant questions' section.
Response + Response types	Each response is tied to a master question. A response is triggered when a question asked by the user matches a master question.
Fallback response	A chatbot's default response when it does not understand what the user said.
Training phrases	[Only used in Custom Dialogue] Phrases to help the chatbot understand users' query, or variations of your master question.
Entities	

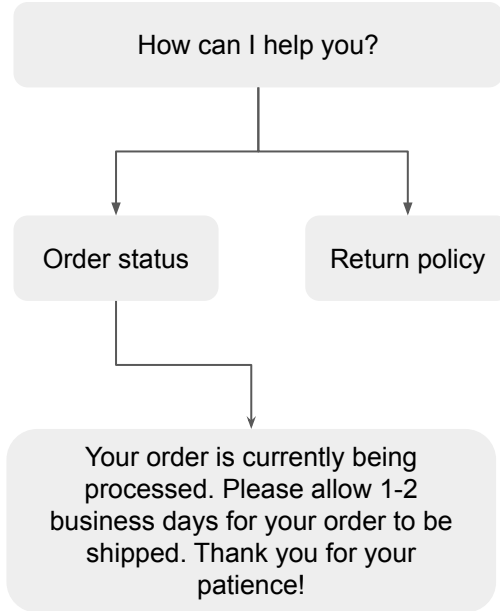




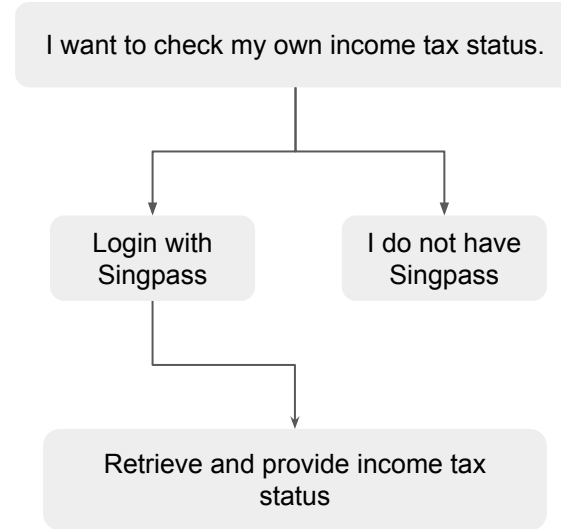
ARCHIVE



Custom Dialogue



Custom Dialogue





MOP's Questions

How much is the downpayment for resale HDB flat?

Can you tell me how much do I need to pay for a resale HDB flat downpayment?

What are the downpayment fees if I purchase a resale HDB flat?



Chatbot Response

The downpayment fee required for resale HDB flats is 20% of the purchase price.