

Making a mobile chatbot app

With mobile architecture in mind

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What is a chatbot?

A program that behaves as if it's another user in a chat / social messaging platform.

So what can you do with it?

- Get customer support at any time of the day
- Get weather forecast
- Shop online
- Check bus arrivals
- Check your bank account / credit card spending
- Help you learn foreign languages
- Intelligent personal assistants like Siri(Apple) and Bixby(Samsung) are also chatbots fitted with speech recognition :)
- Having someone to talk to :”(



Cleverbot

5979 people talking

Hey i just met you.

And this is crazy.

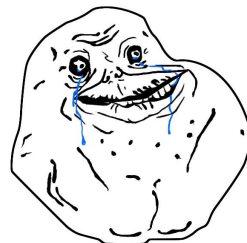
But here's my number.

So call me never.

Think About It!

Think For Me!

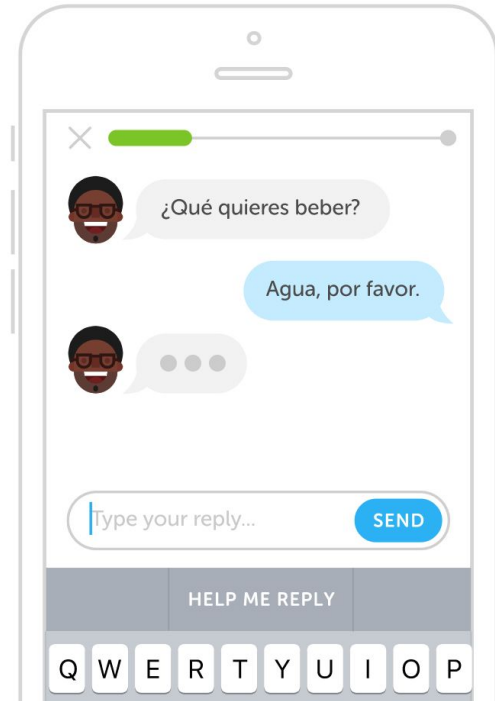
Thoughts So Far



Practice without pressure

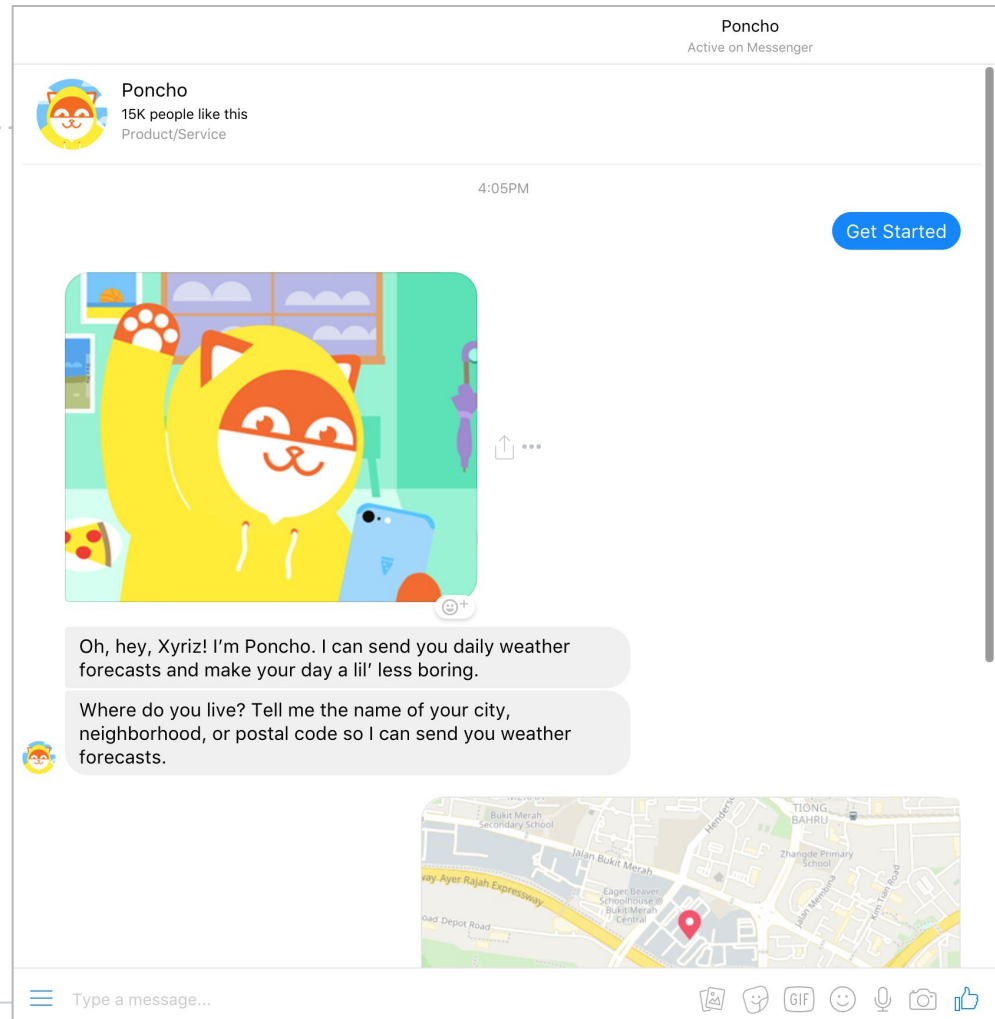
From grabbing a slice of pizza to hailing a taxi, Bots prepare you for real-life conversations — minus the awkwardness and anxiety.

The hardest part of learning a new language just became easy.

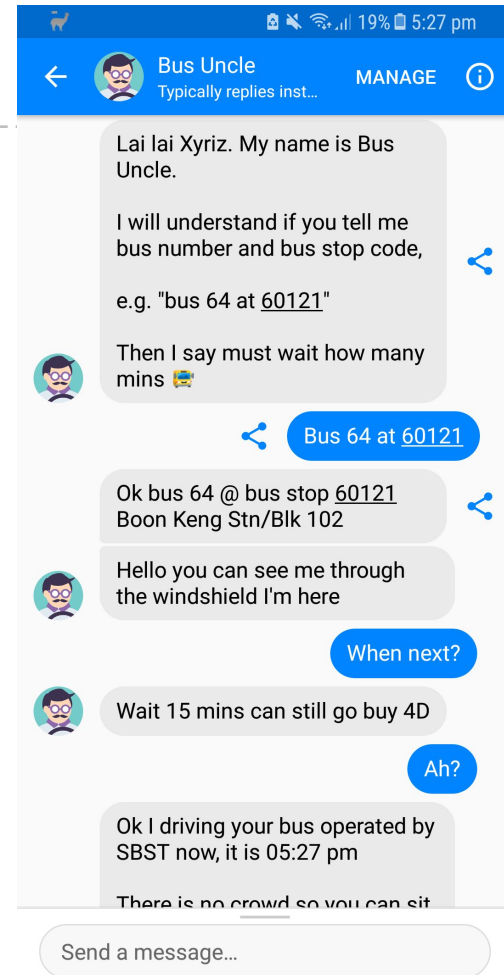


Poncho

Weather forecasts, horoscopes, and more.



Bus Uncle



Benefits

Instant response / no hold time / available 24-7

80% of chat sessions with an actual person can be resolved by a chatbot

Manpower can be allocated more effectively (example: focus on customers with more urgent concerns)

When executed properly, not only will it be cost-saving but it can generate revenue and leads as well.

Let's make one!

Goal: Chatbot app module that can answer frequently asked questions about Circles.Life:

- Backend chatbot service to connect with (Microsoft QnA Maker, Google DialogFlow, IBM Watson)
- Configuring and pre-populating the chatbot service with sample conversations and routines (knowledge base)
- User facing chat app(Web, mobile)

-
1. Make an account at <https://qnamaker.ai/>
 2. Configure knowledge base - in this case we can use qnamaker's functionality that takes in a url and they will do the web scraping + crawling for us. Neat!
 3. Clean up the scraped data (for example, it would sometimes scrape the actual markdown source of the page)



Creating a QnA service

Add sources which contain question and answer pairs you would like to include in your knowledge base.

What would you like to name your service?

The service name is for your reference and you can change it at anytime.

SERVICE NAME

CirclesBot

Enter URL(s) of the knowledge base (FAQ pages or product manuals) that you'd like to crawl.

This will help us gather relevant data about your business and extract QnA pairs that you can later use in your bot. See examples of an [FAQ page](#) or a [product manual page](#).

URL(S)

<https://circlesasiasupport.zendesk.com/hc/en-us>

+ Add another



No URL? No worries. Upload files containing your questions and answers.

Save and retrain

Retrained a day ago

Publish



Knowledge Base	KNOWLEDGE BASE 158 QnA pairs				+ new QnA pair
Test	Question		Answer		
Settings	^ Original source: Editorial				
	1	Hi	Hello		
	^ Original source: https://circlesasiasupport.zendesk.com/hc/en-us				
	1	What is Circles.Life?	We are a **young, innovative and energetic digital telco** with a mission: to re-imagine the mobile experience for customers.\n\nCircles.Life has deep local roots and is the first telco in Singapore creating a ***customer centric** mobile platform**. We aim to make the data-driven consumer's life easier and happier by giving them control over their mobile plans with more choices. We promote plan customization and give customers the room to make changes as their mobile plan needs evolve.\n\nWe believe our customers deserve more, and we give it to them. **Unlimit your Telco!** \n		
	2	What does 'No-contract' mean?	Unlike traditional telcos, we don't lock you in to two-year mobile plans. The minimum period you have to stay with us is only two billing cycles, which gives you the freedom to try Circles.Life out. If our services aren't meeting your mobile needs, you can cancel your plan after the minimum period. No fuss and no need to pull your hair out over two years because you're stuck in a contract with an unsatisfactory mobile plan.\n\nWhat's even better, No-contract means you get to tweak your plan monthly, based on your mobile needs. We let your mobile plan grow with you and your changing needs.\n\nCan we get a high-five?\n		
	3	Where is Circles.Life currently available?	We are currently only available in Singapore, with plans in place to expand throughout South East Asia. Keep up-dated on our [website](https://www.circles.life/), [Facebook page](https://www.facebook.com/CirclesLifeSG/) and [Twitter feed!](https://twitter.com/CirclesLifeSG)\n\nWe're a digital telco without an physical stores. If you'd like to sign up, you can do that from the convenience of your home. Head [here](https://shop.circles.life/signup?utm_source=FAQ&utm_medium=Zendesk&utm_campaign=signup&utm_content=Zendesk) to sign up and get your SIM card delivered to your doorstep!\n\n		

Deploy knowledge base

Success! Your service has been deployed. What's next?

You can always find the deployment details in your service's settings.

Use the below HTTP request to build your bot. [Learn how.](#)

Sample HTTP request

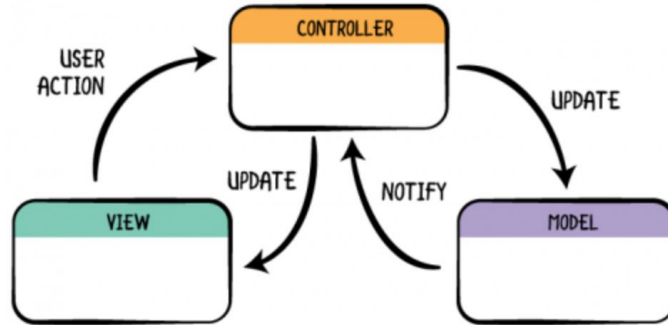
```
POST /knowledgebases/e9126937-83ed-4adf-bb61-17e642b1748e/generateAnswer
Host: https://westus.api.cognitive.microsoft.com/qnamaker/v2.0
Ocp-Apim-Subscription-Key: a74ef73882bc4069b20d7763be26c8b6
Content-Type: application/json
{"question":"hi"}
```

M-V-C

Model-View-Controller.

What is it?

is a software architectural pattern commonly used for developing user interfaces that divides an application into three interconnected parts

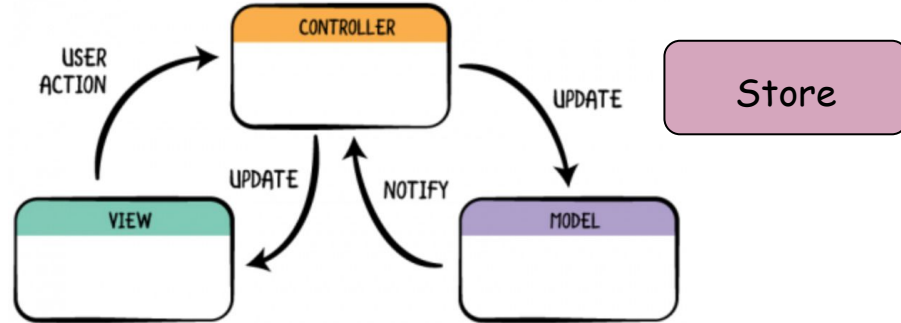


M-V-C

Massive-View-Controller ???!!

What is it?

Hack : MVCS(Model-View-Controller-Store)



M-V-P what? Some new Ministry in SG?

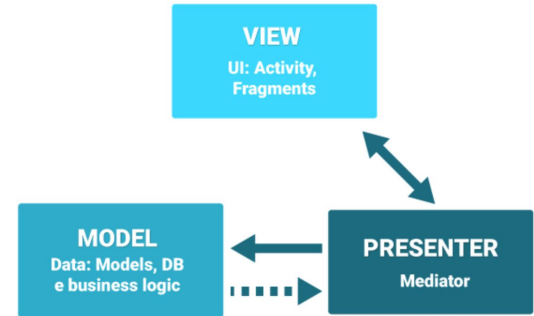
No silly, **MVP** stands for **Model-View-Presenter**.

What is it?

It's a software architectural pattern that aims to separate (decouple) major components of a software.

It's way easier to know which part of software does what

Model View Presenter



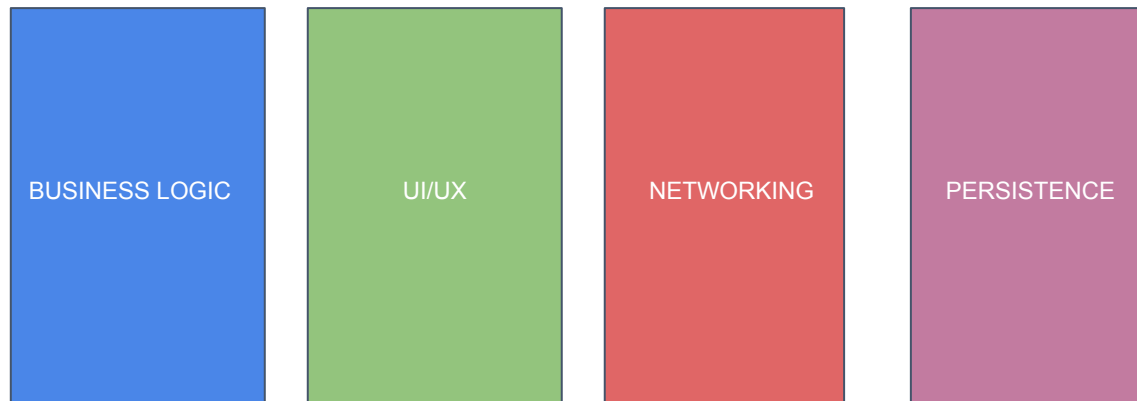
Simple overview of MVP

Model: Defines the data we work on and the interfaces required to expose it to whoever needs it (the Presenter.)

View: Just a passive interface whose sole responsibility is to just display data, its functionality should only be limited to verbs related to UI (show, hide, scroll, updateValue.)

Presenter: The glue between View and Model, receives request from View (for example, a button), then requests for the data to the Model, then finally, formats the result and reports it to the View.

Good Mobile Architecture



- Avoid Massive View Controller Problem
- Be careful about Inheritance (Alternative: Protocol Oriented Programming)
- Activity / View Controller 300-400 Lines of code
- Don't block the UI Thread

Code!

Good Programming Practices

- 1) Know your Data Structure & Algorithms
- 2) Understand Object Oriented Programming, Protocol oriented Programming, Functional Programming
- 3) Design Principles
- 4) SOLID Principles
- 5) TDD

Thanks!

GitHub links:

Android (Kotlin): <https://github.com/Saiseizuki/CirclesBot>

iOS (Swift): <https://github.com/arunsivakumar/CirclesBot>