Money Mitra

– Upgrading Jan-Dhan Darshak app

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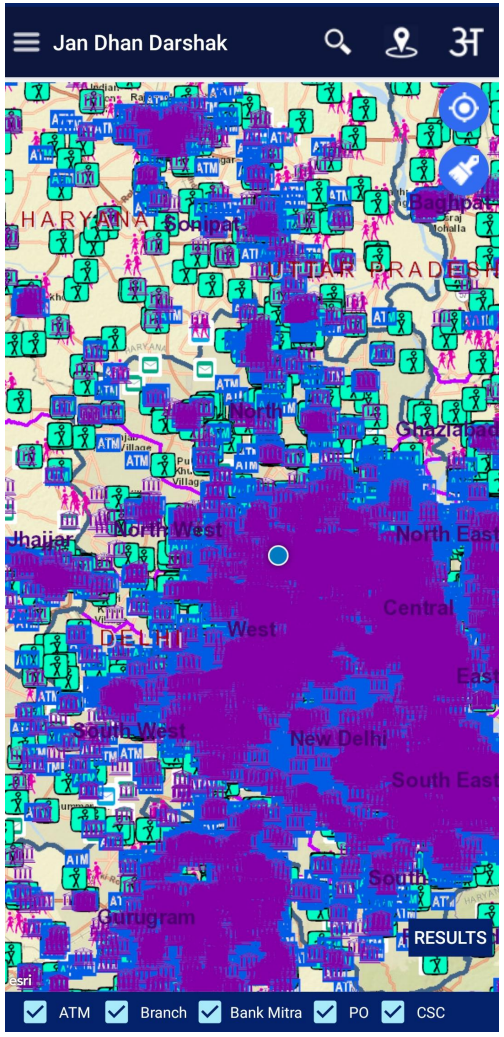
Problem Statement Details

Description	The Department of Financial Services (DFS), Ministry of Finance and National Informatics Centre (NIC) have jointly developed a mobile app called Jan Dhan Darshak as a part of financial inclusion (FI) initiative. As the name suggests, this application acts as a guide for the common people in locating a financial service touch point at a given location in the country. Have a look at the additional application and develop an more featureful application that provides more insights and better recommendations.
Organization	Department of Financial Services
Category	Software
Domain Bucket	Software - Mobile App development
Youtube Link	
Dataset Link	

All the problems with Jan-Dhan Darshak App



It's a DATA DUMP!

Too much to show

Poor map visibility and inaccuracies

Illogical to show me ATMs 15km away!

Too much to Load

On a slow data connection,

Sluggish data retrieval
Slow location detection

No Navigation feature

Location of spots are visible but
Options to navigate to them not available

Inaccurate static Information

Doesn't specify Bank/ATM details such as if it has cash or not

Nightmare for a digitally-illiterate

Bad User Experience

Can't use a smartphone well?
Difficult to use the JDD app

No demo

Entire map shaded blue & purple

UX very troublesome!

Googling stuff is easier

"ATMs near me", "Banks near me", "Post office near me"

These searches will render more comprehensible results!

Using google is the easiest, it's dynamic, it's better in every sense!

When Google does the job even better than JDD, why do we need the app at all!?

Money Mitra's Target Audience

Officially: Everyone!

Actually:
Technologically-challenged People

i.e. (generally)

Old-aged people

Not well-to-do households, not part of the banking system

Why not everyone?

Googling information is the easiest & most basic task

Google has multiple dedicated teams working on such things, e.g. crowdsourcing — results often quicker, truer & more reliable

What the Target Audience needs?

1. **One-Tap or Two-Tap Quick In-App Navigation**
   Actions such as finding nearby touchpoints should be done in least no. of clicks
2. **Relevant Data Only**
   Filters to help find what the user is looking for, Only a few practically feasible locations highlighted
3. **Navigation to the selected location**
   The user should be able to start the navigation process with minimal taps
4. **Easy-to-learn UX**
   Actions such as finding ATMs are as easy as 'pressing the first red button'!

Why MM? Why not Google it?

1. **Google takes more clicks, every time!**
   Be it finding a particular location or browsing the FAQs, MM beats Google!
2. **Google is a for-profit!**
   Digital illiteracy shouldn't make these people gullible to these MNCs' adverts
3. **MM utilises Google's crowd-sourcing**
   No one can beat Google's efficacy at navigation, MM simply allows easier usage
4. **Googling is easy & difficult!**
   For a person used to feature phones, finding the right content not easy

Presenting to you JDD 2.0, features the Money Mitra introduces into the app...

Money Mitra

Money Mitra is a personal digital assistant

Helps in navigating through the app seamlessly

One has to tell Google what they want, but MM understands what they want through (max) 2 questions

The FinT(ouchpoint) Search Engine

We rank nearest financial touchpoints in terms of distance, rating, no. of visits & no. of closed days in a month & other params

The user gets a ranked list of points, like in a SE

Reroutes to MapMyIndia/Google Maps for navigation

Multi-language support - Pootle

The application can switch between languages within 2 taps!

Pootle is used to convert static English text to a local language

From Static to Dynamic - Crowdsourcing

Person at the touchpoint

Within 10m radius, can review or mark point as non-functional

Person Rates

They get a review form on visiting a location (e.g. uber/ola after ride rating form)

FinT SE counts it

Results displayed users give the best ATM, not simply just the closest one

MMIC - Stochastic ML - through a Quora-like forum

MMIC recommends a policy

A bot used to get info from user

With user's financial info, MM suggests the best policy, using K means Clustering

If user unsure or unsatisfied

User info anonymised & shared on a private subreddit (In-app)

Other People, e.g. Bank Mitras make their recommendation

K means updated

Stochastic K means,

- no need to remember previous values

- update model for each new input

Technology: Implementing the Idea

Data Data Data

Currently

Location data of user sent to server along with categories to be displayed

Server returns GIS data & maps it on

JDD 2.0

Location data of user sent to server along with category

Server serves results from APIs

Why React Native?

Offers out of the box focus on UI and access to Native API

Needs lesser memory and runs third-party apps smoothly

Main Aim is to improve UI/UX
React Native is known for its elegant & easy to implement designs

Third-party Libraries Used

REACTNATIVE ELEMENTS

MapmyIndia

Pootle

reddit

For referential purposes

collect.chat
(Bot-like Interactive Forms)

Voice-enabled navigation

Tap on MM to toggle

Tapping on Money mitra equivalent to calling out “Ok, Google” or “Hey Siri” or “Alexa”

Tapping MM activates the bot

TTS API (Pyttsx3)

Alpha version with only english language support

Beta version with Multi-language support using Pootle Library

Commands like

“Money Mitra, show me the nearest ATMs” (renders list of closest ATMs)

“Money Mitra, recommend a policy” (Opens Info bank)

Implemented Using Python & React Native(JS) Libraries

K-Means Clustering

No. of Policies = No. of Clusters

Input: Infor. that a bank mitra asks before making a recommendation

Output: Best Policy

Interactive Forms

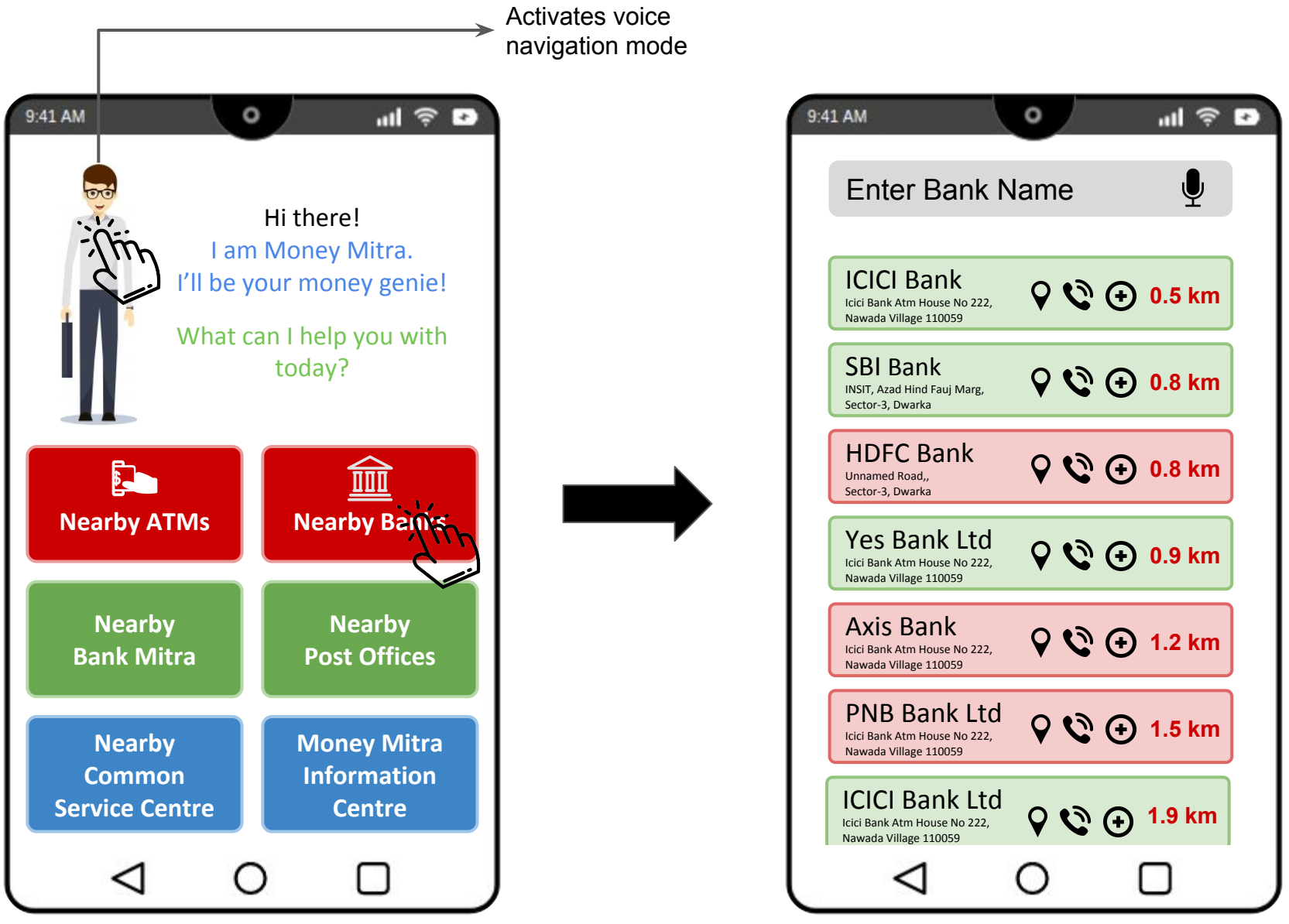
Parameters needed for k-means are collected not through a boring form

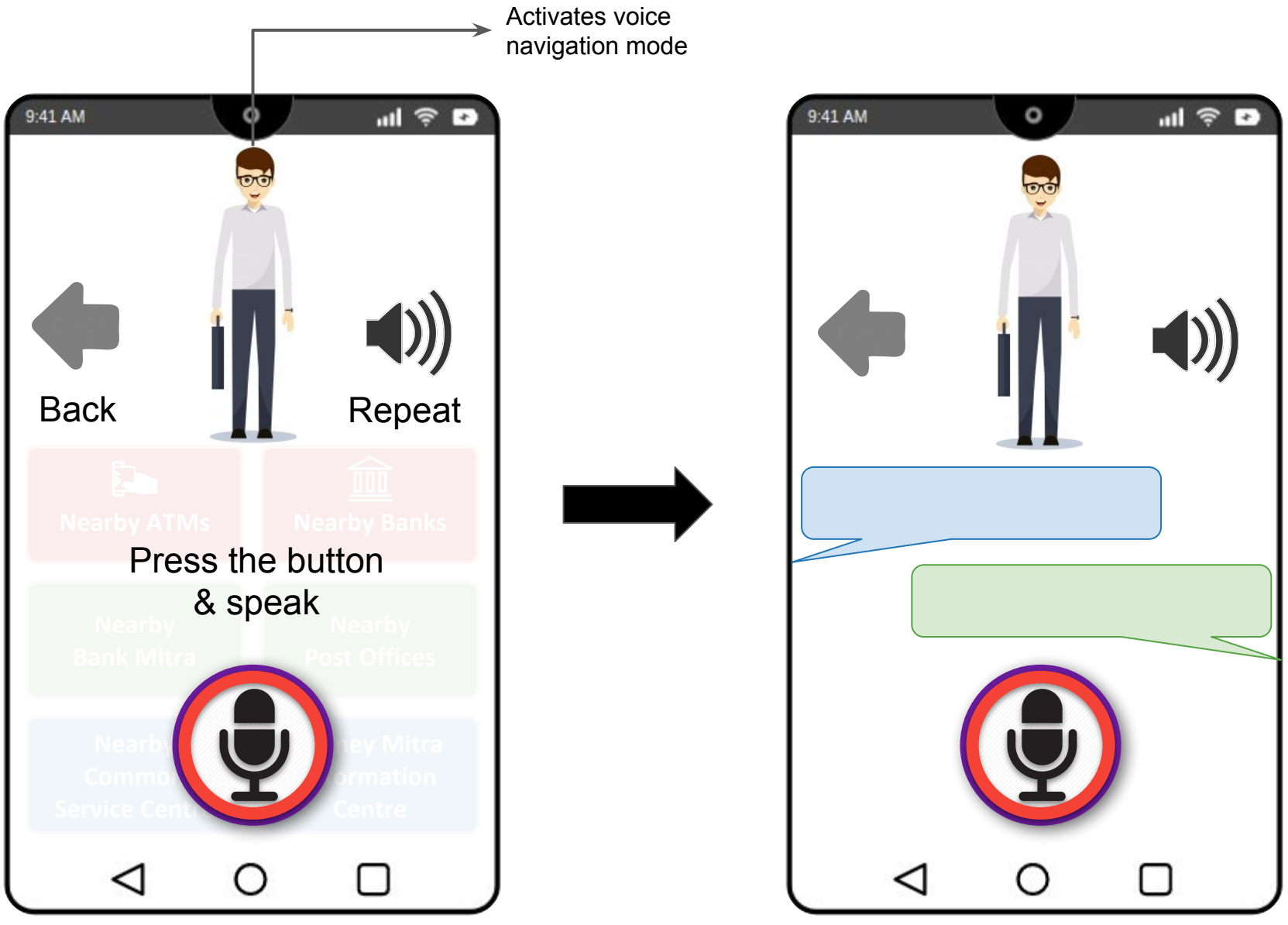
But by the MM (chatbot-like) interactive assistant

Speech-to-Text & Text-to-Speech

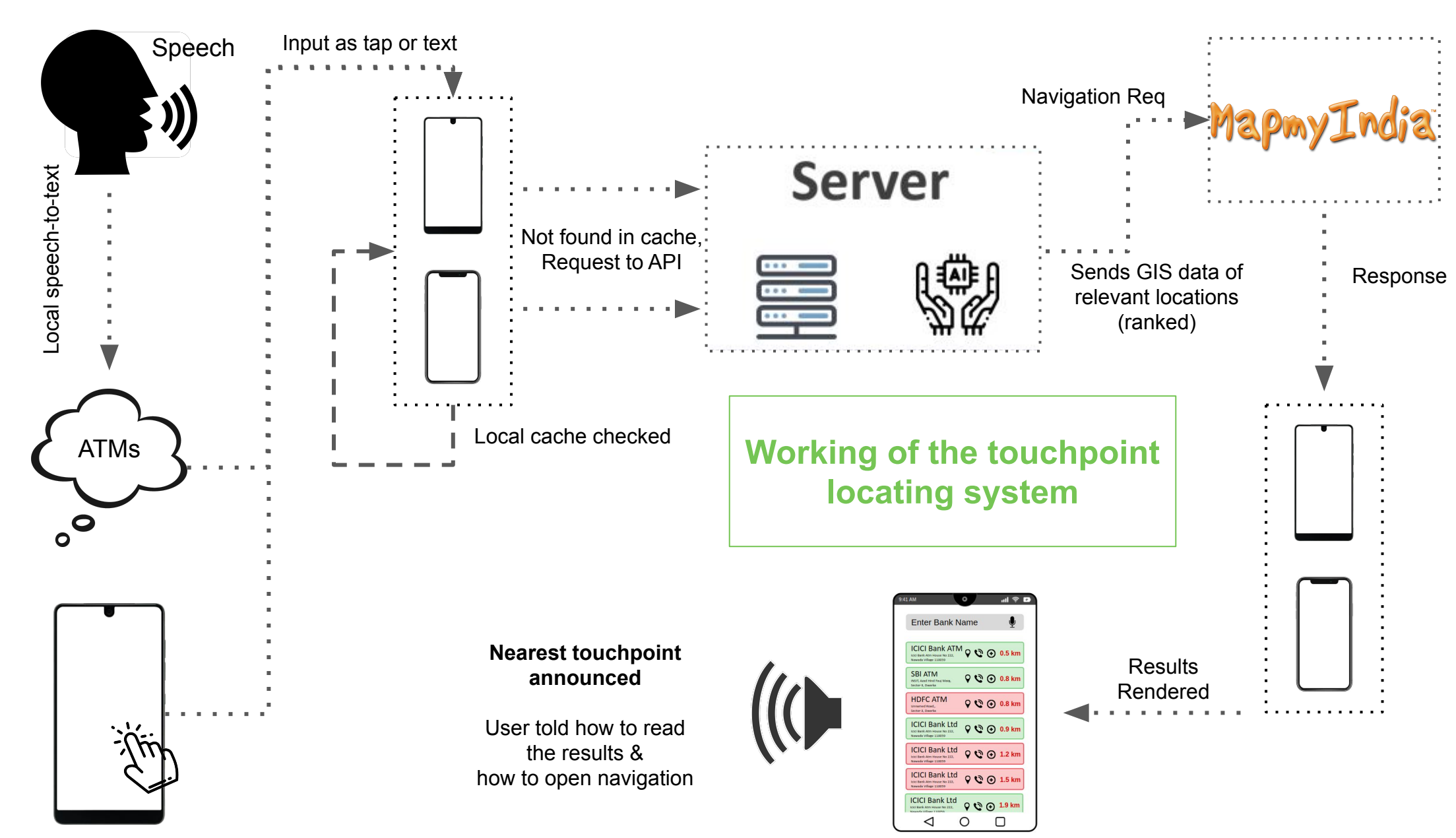
(Only English language supported)

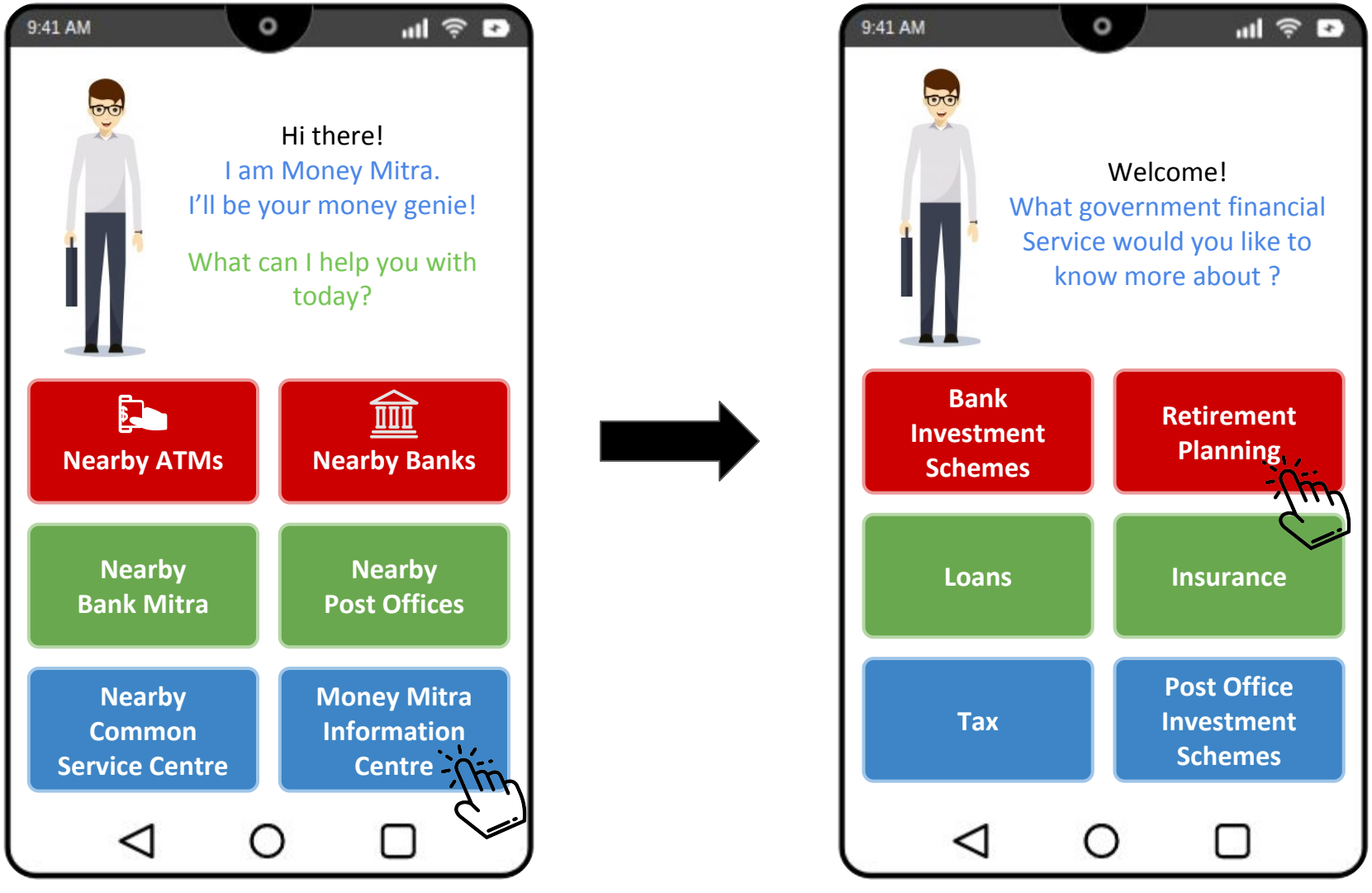
Static information prestored in-app
Dynamic data, e.g. listings, through libs


Activates voice navigation mode
9:41 AM
Hi there!
I am Money Mitra.
I'll be your money genie!
What can I help you with today?
Nearby ATMs
Nearby Banks
Nearby Bank Mitra
Nearby Post Offices
Nearby Common Service Centre
Money Mitra Information Centre
9:41 AM
Enter Bank Name
ICICI Bank
Icici Bank Atm House No 222, Nawada Village 110059
0.5 km
SBI Bank
INSIT, Azad Hind Fauj Marg, Sector-3, Dwarka
0.8 km
HDFC Bank
Unnamed Road,, Sector-3, Dwarka
0.8 km
Yes Bank Ltd
Icici Bank Atm House No 222, Nawada Village 110059
0.9 km
Axis Bank
Icici Bank Atm House No 222, Nawada Village 110059
1.2 km
PNB Bank Ltd
Icici Bank Atm House No 222, Nawada Village 110059
1.5 km
ICICI Bank Ltd
Icici Bank Atm House No 222, Nawada Village 110059
1.9 km
Display More Info
Distance
ICICI Bank
Icici Bank Atm House No 222, Nawada Village 110059
0.5 km
Open Navigation (Google Maps)
Call the Bank



Detects the commands such as “Nearby ATMs” etc to


Speech
Input as tap or text
Local speech-to-text
ATMs
Not found in cache,
Request to API
Server
Navigation Req
MapmyIndia
Sends GIS data of
relevant locations
(ranked)
Response
Local cache checked
Working of the touchpoint locating system
Nearest touchpoint announced
User told how to read the results & how to open navigation
Enter Bank Name
ICICI Bank ATM 0.5 km
SBI ATM 0.8 km
HDFC ATM 0.8 km
ICICI Bank Ltd 0.9 km
ICICI Bank Ltd 1.2 km
ICICI Bank Ltd 1.5 km
ICICI Bank Ltd 1.9 km
Results Rendered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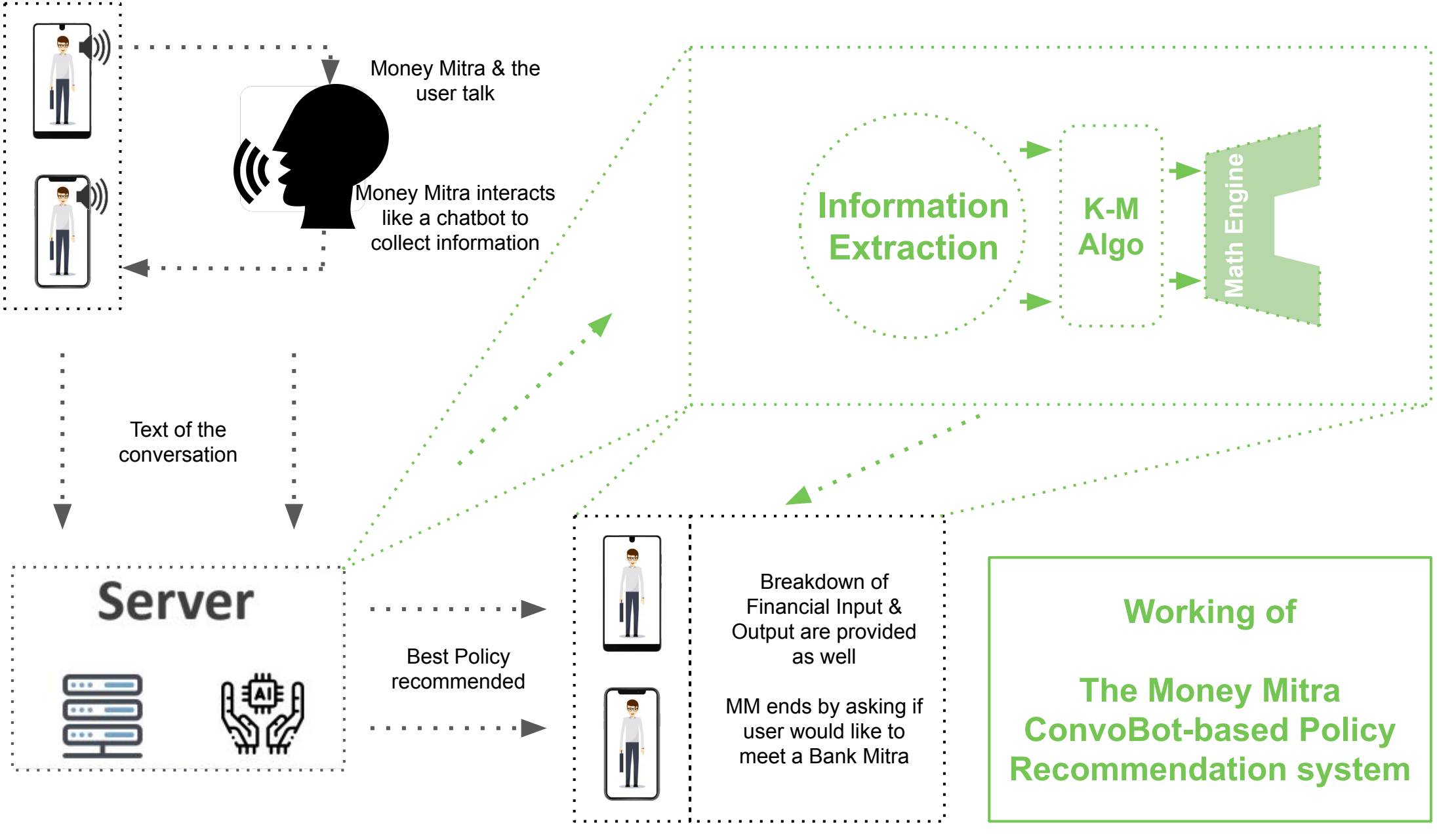
Hi there!
I am Money Mitra.
I'll be your money genie!
What can I help you with today?
Nearby ATMs
Nearby Banks
Nearby Bank Mitra
Nearby Post Offices
Nearby Common Service Centre
Money Mitra Information Centre
9:41 AM
Welcome!
What government financial Service would you like to know more about ?
Bank Investment Schemes
Retirement Planning
Loans
Insurance
Tax
Post Office Investment Schemes


Money Mitra & the user talk
Money Mitra interacts like a chatbot to collect information
Information Extraction
K-M Algo
Math Engine
Text of the conversation
Server
AI
Best Policy recommended
Breakdown of Financial Input & Output are provided as well
MM ends by asking if user would like to meet a Bank Mitra
Working of
The Money Mitra ConvoBot-based Policy Recommendation system

9:41 AM

Please Enter Your Age

62 years

9:41 AM

Retirement Plans

Specially for you

National Pension Scheme (NPS)

PM Vaya Vandhana Scheme

9:41 AM

NPS Scheme Details:

What Is NPS?

It is a voluntary defined contribution pension system in India. NPS, like PPF and EPF is an EEE instrument in India where entire corpus escapes tax at maturity and entire pension withdrawal amount is tax-free.

Tax Benefits of NPS

Who can join NPS?

How do you open NPS account?

Documents Required

Thank You!

Appendix

Limitations down the road

Turbulent Evolution

React Native is young

Upgrades deprecate features

Backward compatibility issues

More Policies added

New policies may be added

A huge scale disruption highly unlikely

Model reconfiguration may be required

Performance Issues

React Native can’t do multi-threading like Java

Heavy-weight processing difficult