Build next gen conversational apps with Bot Framework

AI HACKDAY

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HELLO!

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AGENDA

- Introduction to Bots
  - Why Bots and Why Now?
  - Digital Transformation
- Design Principles and Guidelines
  - Success Factor for your next bot
- Microsoft Conversational AI spectrum
  - Huge set of tools for your businesses
- Microsoft Bot Framework Composer
  - Language Understanding
  - Language Generation
  - Adaptive Expressions
  - and many more..
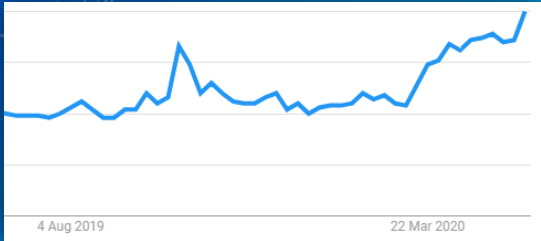
Bots are the new apps –
Satya Nadella

WHAT ARE BOTS?

- Bots are services (powered by rules) that people interact with through conversation and messaging apps

- New user interface paradigm

WHY BOTS AND WHY NOW?

"Bots / Agent Interfaces are the top 3rd trend for Digital Technology in 2020[1]" – Gartner

% of organizations deploying chat assistants

Retail Banking and Insurance — 49%

Consumer Products and Retail — 23%

Automotive — 15%

Out of top 100 organizations in each sector

Landbot.io

Source: Capgemini 2019

4 Aug 2019   22 Mar 2020

Google Trends

[1] - https://www.gartner.com/smarterwithgartner/5-digital-technology-trends-for-2020/

DIGITAL TRANSFORMATION

Customer Services

FAQs

Appointment Booking

Troubleshooting

Customer Onboarding / KYC

Retail / Shopping

Recommend Products

Tickets Booking

Shopping

In-House Support

Meeting Room

Find the right domain expert

HR – Booking leaves, fault reporting

Business Leaders say chatbots have increased their sales by 67% - Inside Intercom

Design Guidelines

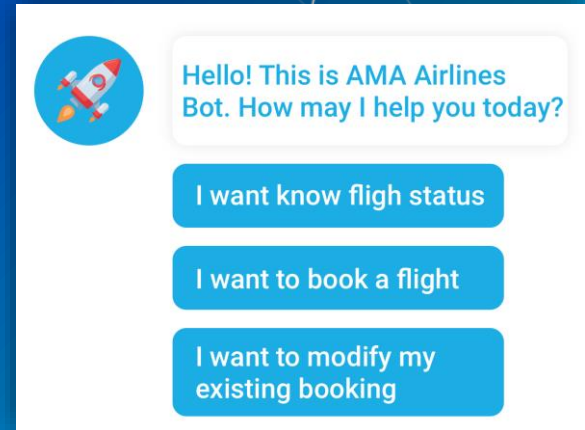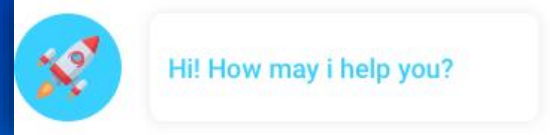Success Factors for your next Bots

SUCCESS FACTORS

- Must be used by people
- Ability to choose over existing experiences (mobile / web)
- Prioritize the right factors

Influencing Factors	Not Influencing Factors
Does your bot solve the user's problem in an efficient (read: faster) way?	How AI driven your bot is.
Does it run on multiple platforms and devices?	Does it support Natural Language Processing?
Is it discoverable enough?	Does it support voice or answers queries on your behalf?

WELCOME MESSAGE

- First Message is the key for retaining customers

- Be descriptive and use menus

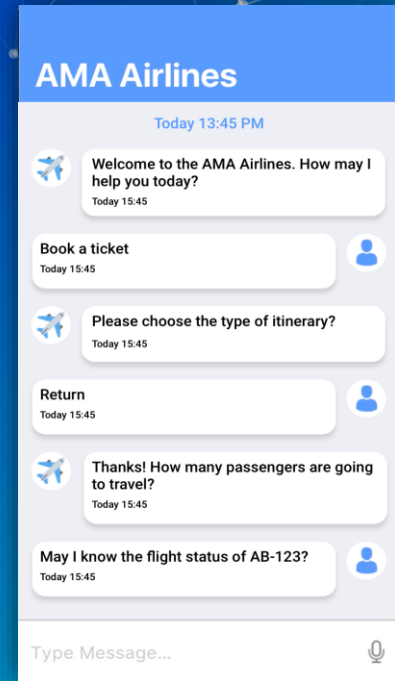*Whether you're designing an app, website or a bot; UX should be your top most priority!*

Hi! How may i help you?

Hello! This is AMA Airlines Bot. How may I help you today?

I want know fligh status

I want to book a flight

I want to modify my existing booking

NAVIGATION PATTERNS

■ Free form / non-linear
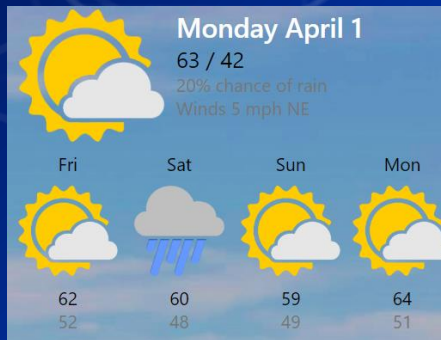
■ Sequential / Guided

Handle Interruptions

■ Do you want to answer the user first?

■ Discard your previous conversation and start from the new one?

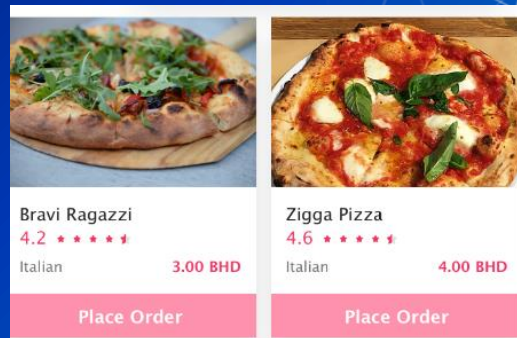■ Resume from the previous discussion after answering this?

AMA Airlines

Today 13:45 PM

Welcome to the AMA Airlines. How may I help you today?
Today 15:45

Book a ticket
Today 15:45

Please choose the type of itinerary?
Today 15:45

Return
Today 15:45

Thanks! How many passengers are going to travel?
Today 15:45

May I know the flight status of AB-123?
Today 15:45

Type Message...

DESIGN ELEMENTS

■ Rich Controls
  ○ Buttons, Images, Carousels
  ○ Cards (Adaptive, Audio, Video, Sign-In, Hero and Thumbnail)

DESIGN ELEMENTS
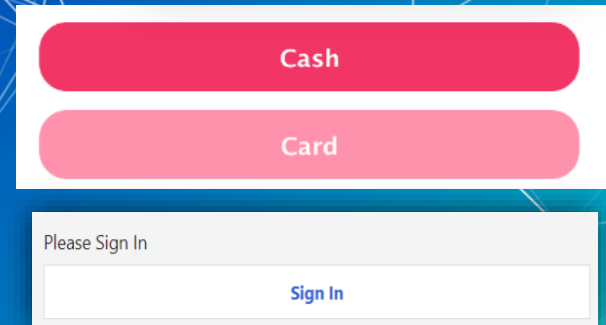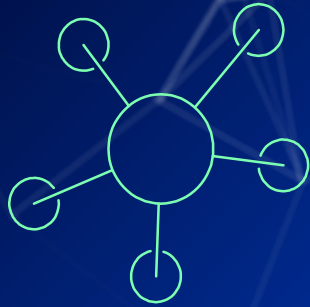
- Text & NLU (Natural Language Understanding)
  - Microsoft LUIS
  - IBM Watson API
  - Amazon Alexa
  - Google DialogFlow

- Speech
  - Cognitive Services

Microsoft Conversational AI

Tons of tools with hundreds of features

Software as a service, SaaS solutions
To enable out-of-the-box Conversational AI services for key solutions

Enterprise Assistant Cortana

Power Virtual Agents

Solution accelerators and templates, PaaS
To extend and enable key Conversational AI solutions

Virtual Assistant Solution Accelerator

Pre-trained AI, Cognitive Services
To add and customize language, speech, knowledge & vision

Vision

Speech

Language

Decision

Web Search

Managed Bot Service, Azure Bot Service
To accelerate building, management and deployment of conversational AI

Azure Bot Service

Popular open source frameworks, Bot SDK on GitHub
To fully integrate and customize your solution, with any AI technology

Bot Framework

LANGUAGE UNDERSTANDING (LU)

- Core component of Bot Framework Composer

- Adds natural language capabilities to your bot through LUIS / Recognizers

- Supports LG format

- Auto-train the language model from within Bot Framework Composer

Expected responses (intent: TrackFlight)

- i want to know the status of flight from {Source=Manc
- let's track the flight to {Destination=Brisbane}
- what's the update flight {FlightNumber=AT 437}
- can you please update me about the status of {FlightN
- flight {FlightNumber=911}
- flight to {Destination=bahrain} {FlightNumber=AT-123}
- {FlightNumber=AT 219}
- has the flight {FlightNumber=AT 372} {FlightNumber=
- i want to track ek {FlightNumber=234}
- i want to track flight {FlightNumber=AT573}
- is flight from {Source=london} to {FlightNumber=bahra
- please book a flight from {Source=london} to {Destinat
- tell me about {FlightNumber=AT 124} to {Destination=
- tell me about {FlightNumber=at 810}

LANGUAGE GENERATION (LG)

- Multiple variations of a response without having to write any complex code

- Separate business logic from presentation

- Rich response such as Adaptive Cards support

Name	Responses
#WelcomeUser	- Welcome to AMA Airlines. I'm currently responsible for the general questions and answers and flight status. Please let me know how may I help you today?
	- Hello! It looks like we're interacting for the first time. I'm AMA Airlines Bot. I am responsible for your general questions and flight statuses. How may I help you today?

Hello! It looks like we're interacting for the first time. I'm AMA Airlines Bot. I am responsible for your general questions and flight statuses. How may I help you today?

Type your message

ADAPTIVE EXPRESSIONS

- Expressions to evaluate the user's input or bot's response
- Range of pre-built functions
- Available to be used within Language Generation templates

Property ⓘ

conversation.FlightDetails.FlightNumber

Value ⓘ

=toUpper(@FlightNumber)

Branch: if/else

Branch: If/Else

Two-way branch the conversation flow based on a condition.

Learn more

Condition ⓘ
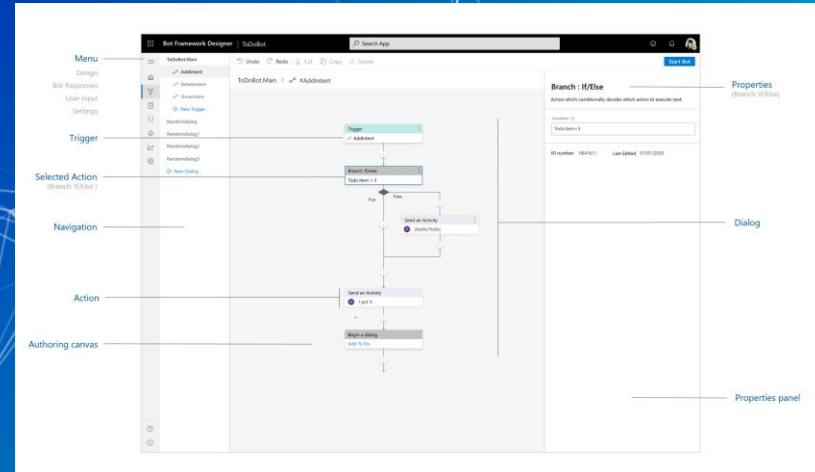
=length(conversation.FlightDetails.FlightNumber) > 0

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Bot Framework Composer

Drag and Drop – Low code 🤖

BOT FRAMEWORK COMPOSER

- Opensource development tool

- Visual Authoring Canvas (Drag & Drop) and Visualizing the conversational flow

- Language understanding (NLU) in context of conversation authoring

- Tools to train and manage dialog components (including NLU and QnA)

- Author Bot responses (powered by Language generation and templating system)

- A ready-to-use bot runtime

PRE-REQUISITES

- Bot Framework Composer (https://docs.microsoft.com/en-us/composer/setup-yarn)
- Bot Framework Emulator (https://github.com/Microsoft/BotFramework-Emulator/releases/tag/v4.8.1)
- Azure Trial Subscription (https://azure.microsoft.com/en-gb/offers/ms-azr-0044p/)

NEED HELP?

- Bot Framework Composer Docs (https://docs.microsoft.com/en-us/composer/introduction)
- Blog Post (https://www.arafattehsin.com/build-a-flight-tracker-using-bot-framework-composer-part-1/)

DEMO

Bot Framework Composer

Resources

- Learn Bot Framework (https://docs.microsoft.com/en-us/learn/paths/create-bots-with-the-azure-bot-service/)
- Bot Framework Composer (https://docs.microsoft.com/en-us/composer/introduction)
- Bot Framework Community (https://github.com/botbuildercommunity)
- My Blog (https://www.arafattehsin.com/blog)

THANKS!

Any questions?

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