Programming the Microsoft Bot Framework

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Bot Framework Components

Bot Framework Portal & Channels
https://dev.botframework.com

Bot Builder SDK
https://aka.ms/bf-bc-vstemplate

Bot Framework Channel Emulator
https://emulator.botframework.com

Bot Framework Channel Inspector
https://aka.ms/bf-channel-inspector-learnmore
Programming Bot Framework

Programming Languages
• Bot Builder SDK for .NET  [https://github.com/stefanotempesta/botframework](https://github.com/stefanotempesta/botframework)
• Bot Builder SDK for Node.js
• REST API (Azure Bot Service)

Programming Approaches
• FormFlow
• Dialogs
• JSON Schema
• Q&A Maker  [https://qnamaker.ai](https://qnamaker.ai)
• LUIS  [https://www.luis.ai](https://www.luis.ai)
Core Concepts

• Bot Application
• Channel
• Activity
• Message / System
• FormFlow
• Dialog
• State

• Rich Cards
• Entities
• Global Handlers
• Security
FormFlow

• Chain ➔ From ➔ Do
• Properties
• Enumerations
• (Optionally) Fluent BuildForm
  • Add custom messages
  • Dynamic values
  • Field Validation
  • Confirmations
public class RootDialog : IDialog<object>
Rich Cards

- Suggested Actions
- Attachments
- Hero card
- Thumbnail card
- Video / Audio / Animation card
- Receipt card
-SignIn card
- Adaptive card
Adaptive Cards

http://adaptivecards.io/

• Body
• Actions
• Speak
• BackgroundImage
Dialog Flow

TRADITIONAL APPLICATION

Main Screen

New Order Screen

Product Search Screen

BOT

Root Dialog

New Order Dialog

Product Search Dialog

Call

Forward

Wait

Done
State Management

• User Data
• Conversation Data
• Private Conversation Data

StateClient

• Dialogs automatically store state
  • Bot Connector State Service
• CosmosDB or Azure Table Storage
JSON Schema

http://json-schema.org/

- JSON FormFlow
- References & Imports
- Templates
- Properties
Smarter Bots

• Q&A Maker
• LUIS (Language Understanding Intelligent Service)
• Cognitive Services
  • Image and video understanding
  • Speech recognition and conversion
  • Text Analytics
• Bing Spell Check
• Web Search
Q&A Maker

https://qnamaker.ai

• Knowledge Base (Q&A)
• Train & Publish
• Alternative phrasing
• Best match
• No need to use Bot Framework!
LUIS

[https://www.luis.ai](https://www.luis.ai)

- Intent
- Utterance

- Entity (Custom and Prebuilt)
- Domain
- Train & Publish
Security

• Registration

<configuration>
  <appSettings>
    <!-- update these with your BotId, Microsoft App Id and your Microsoft App Password-->
    <add key="BotId" value="YourBotId" />
    <add key="MicrosoftAppId" value="" />
    <add key="MicrosoftAppPassword" value="" />
  </appSettings>
</configuration>

• Authentication

[BotAuthentication]

public class MessagesController : ApiController