

ilm

Presenting Our Chatbot Overlords!

A quick look into Microsoft's Bot Framework

Agenda

- Introductions
- What are chatbots?
- Chatbot products
- Microsoft Dev Bot Framework
- Microsoft Cognitive Services
- Demos

Introductions

Because you gotta know who I am, right?

ilm

Speaker info

- Senior II Consultant for ILM
- Avid cook
- “Retired” drummer
- Beginner wood worker
- .net guy
- tinkerer
- Twitter: [@curiousdork](https://twitter.com/curiousdork)
- facebook: facebook.com/curiousdork
- Phone: 867-5309

ILM Professional Services

- We specialize in full-stack development using .net and java
- We are based out of Edina
- We've won the **Best Place to Work** award four years in a row!
- We also host MDC

ILM Professional Services



What are chatbots?

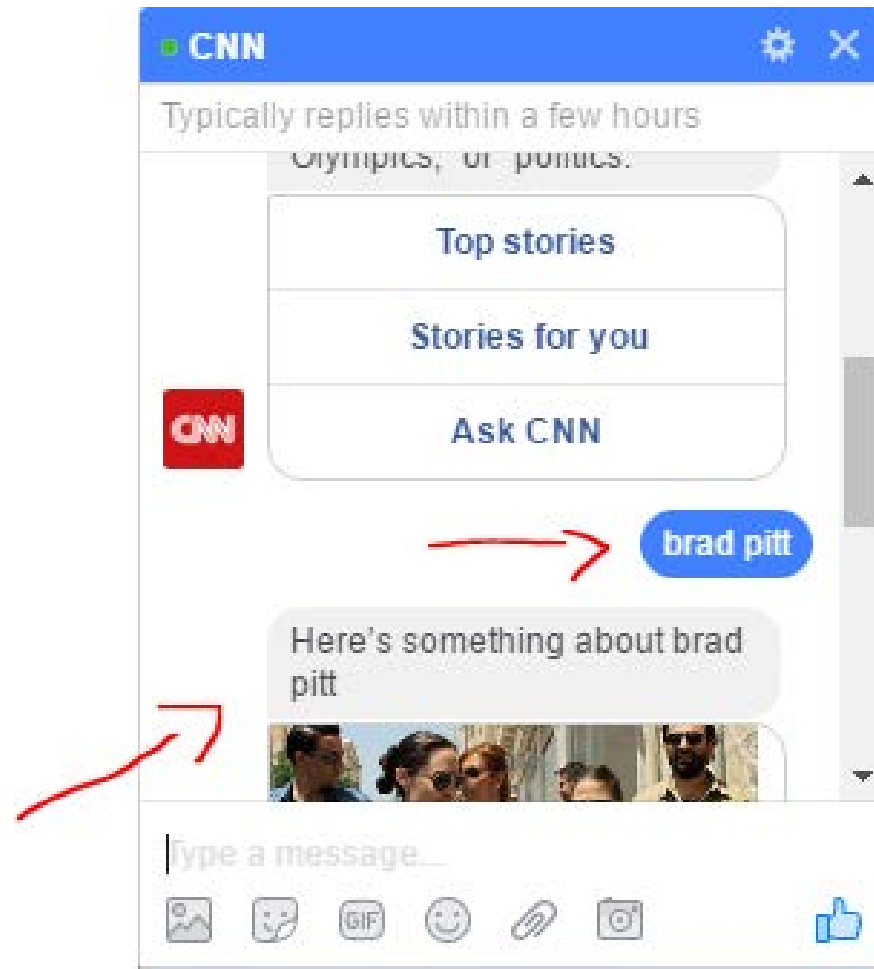
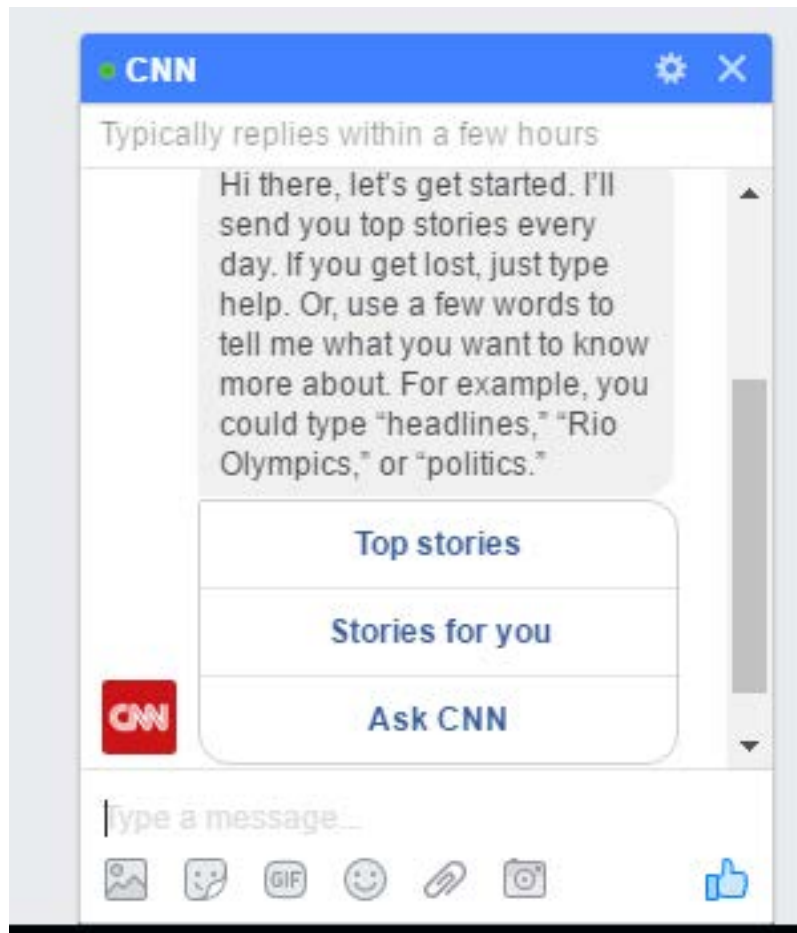
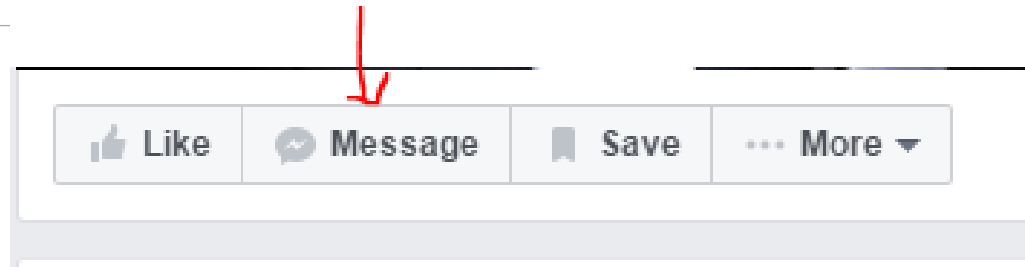
You ought to know your chatbot overlords

ilm

What are chatbots?

- They are software that operates as an agent for a user
- Social media dominates the landscape
- More and more people are spending their time using messaging apps
- Chat bots are another avenue of companies/products being able to interact with users
- Chat bots are kind of dumb

CNN



FourSquare



curiousdork 9:35 PM

/foursquare dinner in crystal, mn



Foursquare BOT 9:35 PM ☆

[dinner] near [crystal, mn], coming right up:

Frankie's Chicago Style

"Did NOT get the Chicago dog promised by Foursquare."



Gion Noodles and Soup

"Chef Special Pho is the bomb for Adventurous foodie!"



Pub 42

"It makes up for the limited beer selection."



See all results for [dinner in crystal, mn](#) on Foursquare

Kayak

Like Message Save More


Contact Us

Status Photo / Video

Write something on this Page...

KAYAK 6 hrs ·

See what the women of KAYAK are saying about working here. We're proud to be one of Fortune's Best Workplaces for Women. #WomenInTech #BestWorkplaces



Product/Service

Search for posts on this Page

Very responsive to messages

464,925 people like this

Invite friends

KAYAK More options

ABOUT

Search hundreds of flights on www.KAYAK.com

If you have an account on www.KAYAK.com

Typically replies within 1 hour

<http://www.KAYAK.com>

Flights to Denver

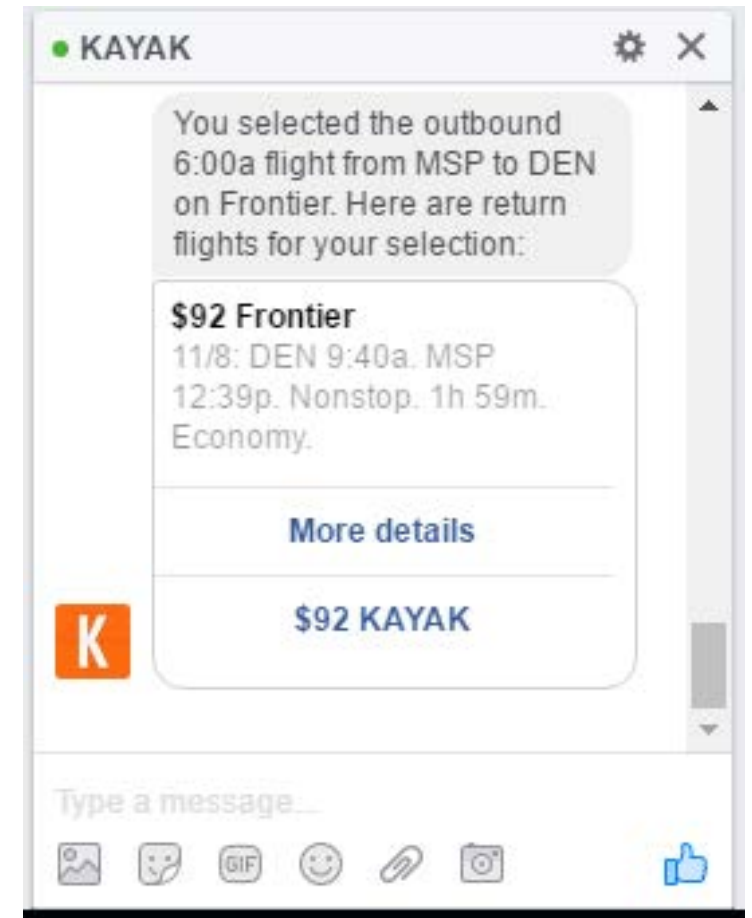
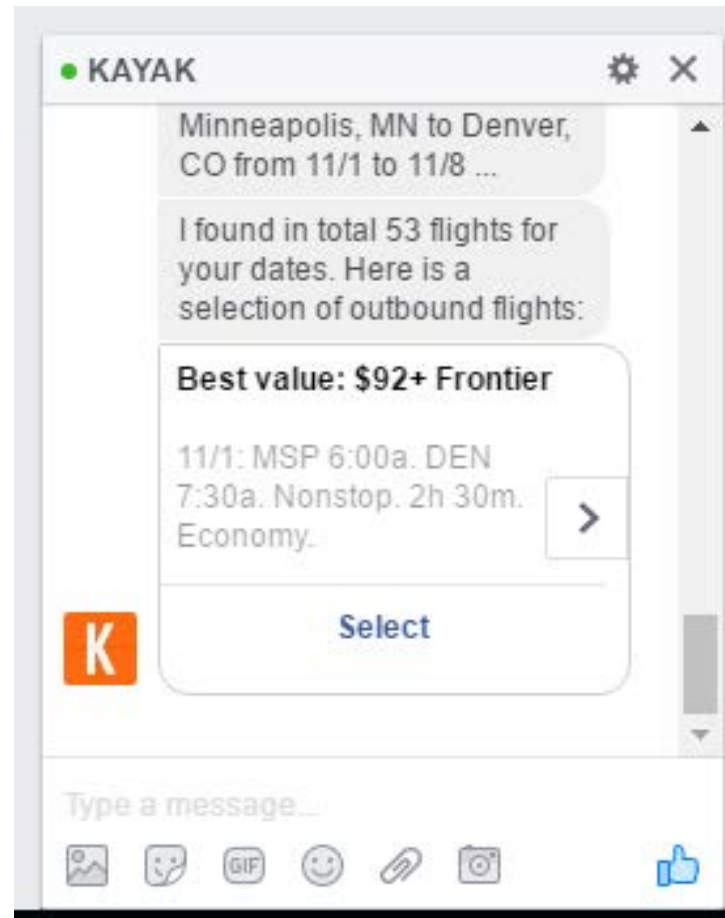
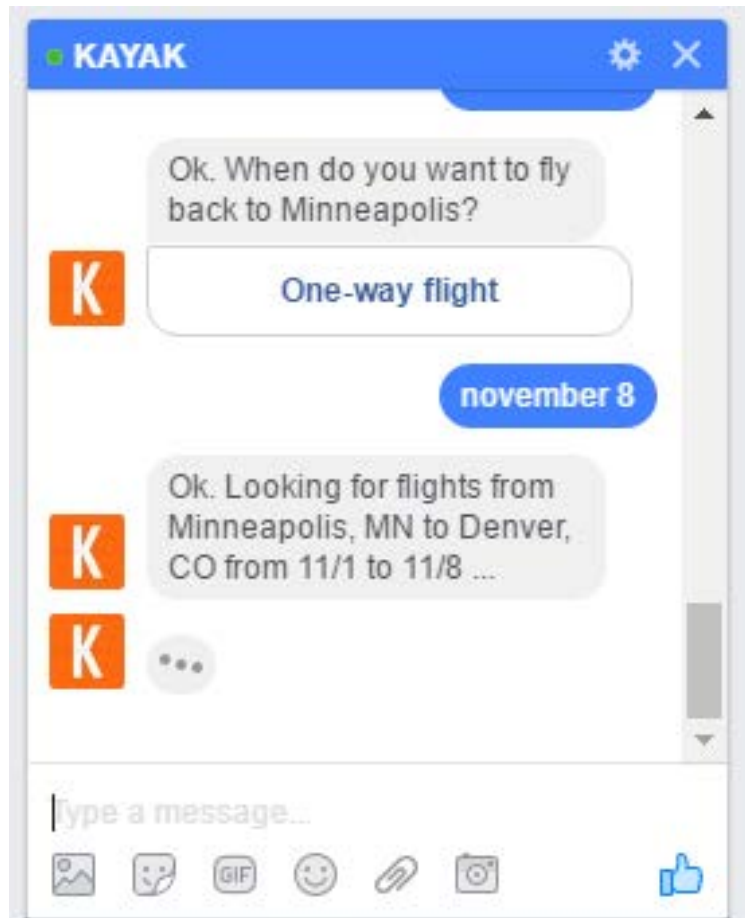
Ok. Where do you want to fly from?

MSP

Expect to pay at least \$97 for flights from Minneapolis, MN to Denver, CO. When do you want to fly out?

October 16 |

Kayak



You are flying on **FRONTIER**

Minneapolis, MN (MSP) to Denver, CO (DEN)

Frontier, round-trip, economy, 1 adult



Depart: Tue Nov 1 2016

Return: Tue Nov 8 2016

Show flight details ▾

Frontier Airlines charges an additional fee for carry-on and each bag checked; not included in your total trip charges

Enter Traveler Details (must be an adult)

Sign in if you have an account to retrieve saved travelers and credit cards.

Traveler 1 (primary contact must be an adult)

First Name 

Middle Name 

Last Name 

Email Address 

+1 ▾ Phone Number 

Frontier Airlines - EarlyReturns ▾

Frequent Flyer Number

Summary

Frontier, round-trip, economy, 1 adult

Depart Tue 11/1: MSP > DEN 6:00a – 7:30a
Flight 333

Return Tue 11/8: DEN > MSP 9:40a – 12:39p
Flight 326

Charges

1 adult, economy \$11.16

Taxes, Fees and Surcharges \$80.52

Total Cost **\$91.68**

Trip Protection Not Selected

Customer support provided by

FlightNetwork

Why should I care about chatbots?

- The average American devotes half of their app time to a single app.
- The second most used app gets about 18%
- The third gets 10%
- Which apps dominate? Facebook and Facebook Messenger

Why should I care about chatbots?

- CNN chatbot delivers news
- Kayak allows you to book flights
- Slack bots can help you view system uptimes
- A lot of these tasks can be done within the context of a conversation!

Chatbot Products

Choose the tool to build Skynet

ilm

Motion.ai

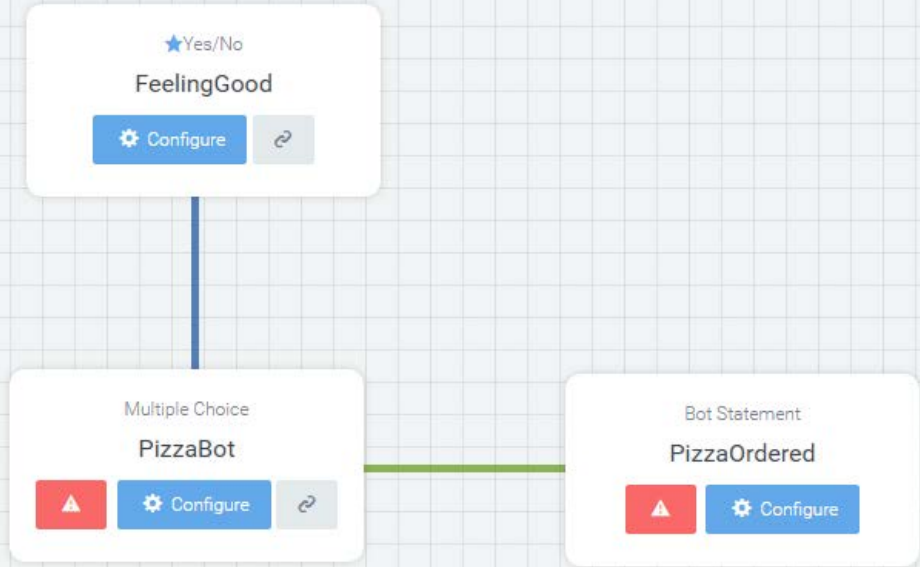
- A new comer to the chat bot game.
- Motion.ai is a full fledged environment for developing chat bots.
- WYSIWYG editor
- Webhooks for custom responses
- Motion.ai provides code to embed the web chat form onto your website
- Facebook messenger, Slack, Email, SMS integration
- www.Motion.ai

Motion.ai

+ Add Module

Test Bot

Get Embed Code



The chat interface shows a conversation with a chatbot. The messages are as follows:

- Bot: "You alright, mate?" (9:41:41 PM)
- User: "yeah" (9:42:28 PM)
- Bot: "What size pizza you want?" (9:42:28 PM)
- User: "large" (9:42:32 PM)
- Bot: "Your pizza is on its way!" (9:42:32 PM)

At the bottom, there is a text input field with the placeholder "Say something..." and a "SEND" button. A footer indicates "Chatbot powered by Motion AI".



Motion.ai

Add New Module

Below are various module types you may add to your bot. For more information on how modules and bots work, see our [documentation](#).



- Text**
The simplest module - a string of text to be sent by your bot, with no direct parsing of the user's response.
Select
Examples
- Multiple Choice**
Works great for posing any set of outcomes.
Bot: `Would you like small or large?`
Human: `Large please!`
Select
Examples
- Sentiment (Yes/No)**
Identifies a wide range of expressions that denote a "yes", "no" or neutral answers.
Select

Add New Module

Below are various module types you may add to your bot. For more information on how modules and bots work, see our [documentation](#).



- Text**
Select
Examples
- Multiple Choice**
Select
Examples
- Sentiment (Yes/No)**
Select
- Form**
Module Name (for your reference)

Initial Bot Response (what the bot will say initially)

Add Module
Select
- Email**
Extracts a valid email address from a user's response.
Select



Motion.ai

Recent Responses

SENTIMENT

5 RESPONSES

FeelingGood



Generate Message Report

All Mediums

Both Directions

Display Report

Download CSV

Facebook (wit.ai)

- Wit.ai has integrated natural language processing (NLP)
- Wit.ai is trainable

Facebook (wit.ai)

What's the weather in **Rome**?

intent weather

wit/location Rome

+ Add a new entity

What's the weather in Paris? 9:40:03 PM

> getForecast() 9:40:05 PM

Updates context keys with...

forecast	missingLocation	✓
----------	-----------------	---

User says...

getForecast

getForecast (context) ⚡

forecast missingLocation ↕

The weather will be {forecast} 🤖

+ Variable

Set quick replies

Bot sends Bot executes Jump

SiriKit (iOS)

- Enables iOS 10 apps to work with Siri.
- Apple Maps also uses SiriKit to integrate data into apps (e.g., ride booking)
- SiriKit is divided into domains and supports only
 - VoIP calling
 - Messaging
 - Payments
 - Photo
 - Workouts
 - Ride Booking
 - CarPlay
 - Restaurant reservations (which requires additional support from Apple)

Bot Framework

- Bot Builder SDK supports both Node.js, .net, and REST.
- Debut in BUILD 2016
- Slack, Skype, Facebook Messenger, Kik, and many other integrations with popular services
- Bot Framework allows you to programmatically create chat bots
- Bot Intelligence is a separate service

Microsoft Bot Framework

Learning to build our overlords!

ilm

Bot Framework

The screenshot shows the BotBank management interface. At the top left is the BotBank logo and the text "Alt-Shift-Code". A red arrow points to a "Publish" button in the top right. The main content area is divided into three sections: "Details", "Channels", and "Test connection to your bot".

Details: Bot handle: mdcbotbank; Bot Framework Version: 3.0; Messaging endpoint: https://mdcbotbank.azurewebsites.net/api/messages; Microsoft App ID: [redacted].

Channels: A table with columns: Test link, Issues, Enabled, Published. The "Web Chat" channel is listed with 11 issues, is enabled, and is currently off. A red circle highlights the "Add another channel" section, which lists various messaging platforms with "Add" buttons: Direct Line, Email, Facebook Messenger, GroupMe, Kik, Skype, Slack, Telegram, and Twilio (SMS).

Test connection to your bot: A "Test" button is present, and a message below it states "Endpoint authorization succeeded".

On the right side, there is a "Locale" dropdown menu set to "en-US".

Bot Framework

Microsoft Bot Framework Channel Emulator (3.0.0.59)

Local Port: 9000 | Emulator Url: http://localhost:9000/ | Bot Url: http://localhost:3979/api/mess: | Microsoft App Id: | Microsoft App Password: |

User: User1 | ConversationNames: Conv1 | New | Members: 1 | Typing: | Send | Locale: en-US

Chat

how much did I spend on food last year

You spent \$0.00 on food

how much did I spend on food this month

You spent \$169,477.00 on food

how much did I spend on utilities this month

You spent \$174,290.00 on utilities

JSON

```
{
  "type": "message",
  "timestamp": "2016-09-27T01:09:35.7617925Z",
  "serviceUrl": "http://localhost:9000/",
  "channelId": "emulator",
  "from": {
    "id": "56800324",
    "name": "Bot1"
  },
  "conversation": {
    "isGroup": false,
    "id": "8a684db8",
    "name": "Conv1"
  },
  "recipient": {
    "id": "2c1c7fa3",
    "name": "User1"
  },
  "text": "You spent $174,290.00 on utilities",
  "attachments": [],
  "entities": [],
  "replyToId": "312c4d8bdb564899adc3f3f0f8095147"
}
```

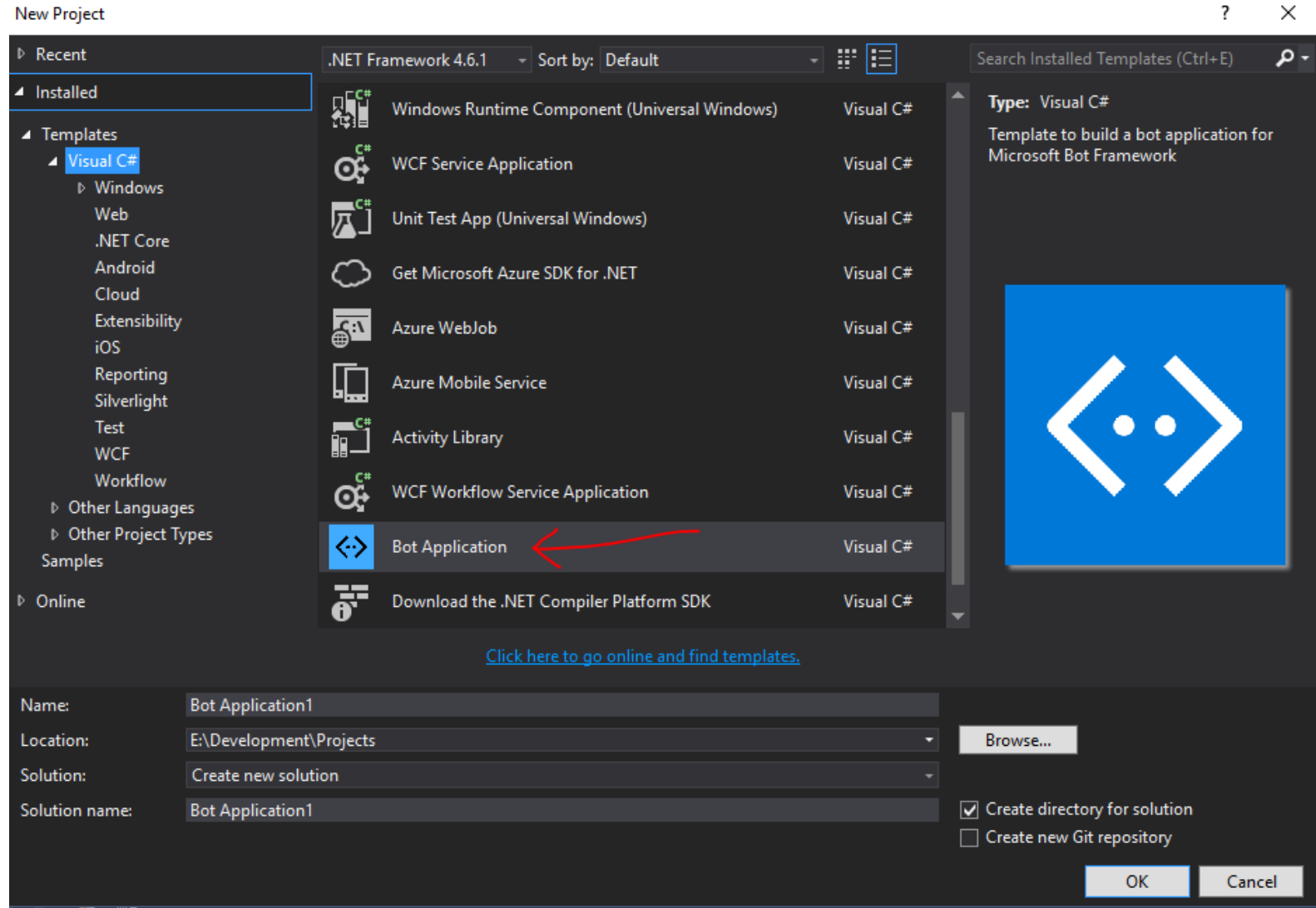
202 Accepted

JSON

attachments

textbox

Bot Framework



Bot Framework

```
/// </summary>
0 references
public async Task<HttpResponseMessage> Post([FromBody]Activity activity)
{
    if (activity.Type == ActivityTypes.Message)
    {
        ConnectorClient connector = new ConnectorClient(new Uri(activity.ServiceUrl));
        // calculate something for us to return
        int length = (activity.Text ?? string.Empty).Length;

        // return our reply to the user
        Activity reply = activity.CreateReply($"You sent {activity.Text} which was {length} characters");
        await connector.Conversations.ReplyToActivityAsync(reply);
    }
    else
    {
        HandleSystemMessage(activity);
    }
    var response = Request.CreateResponse(HttpStatusCode.OK);
    return response;
}

1 reference
private Activity HandleSystemMessage(Activity message)
```

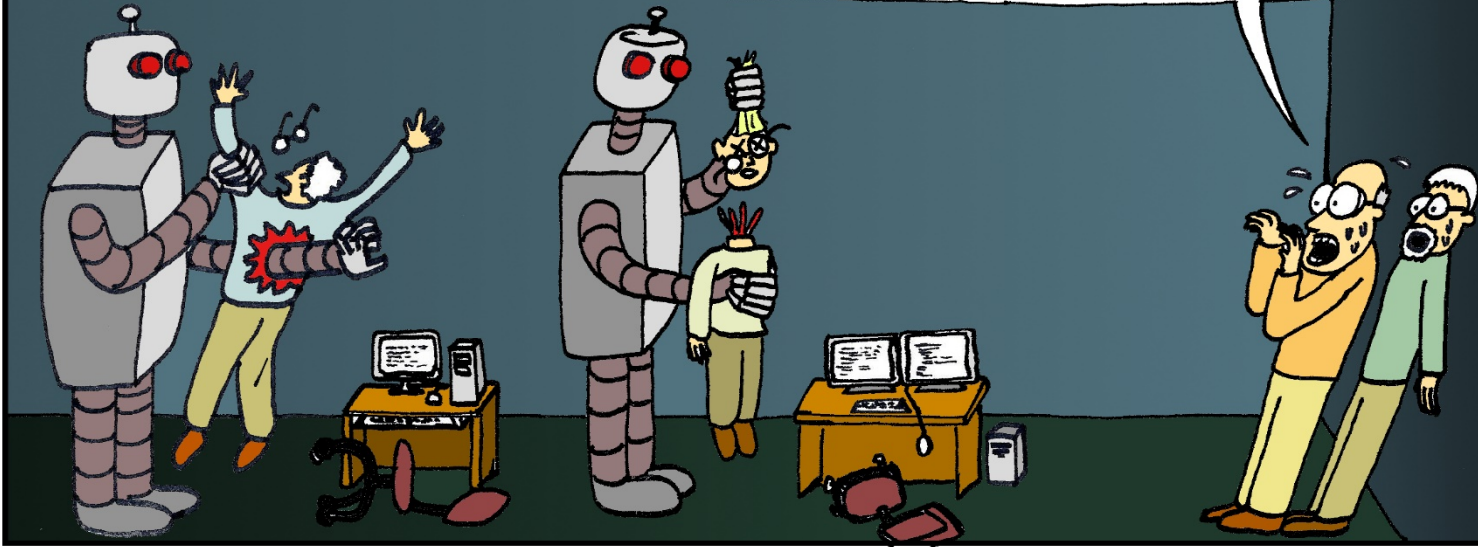
```
}
else if (message.Type == ActivityTypes.Typing)
{
    // Handle knowing tha the user is typing
    ConnectorClient connector = new ConnectorClient(new Uri(message.ServiceUrl));
    Activity reply = message.CreateReply(@"Someone is typing...");
    connector.Conversations.ReplyToActivity(reply);
}
else if (message.Type == ActivityTypes.Ping)
{
```

Microsoft Cognitive Services

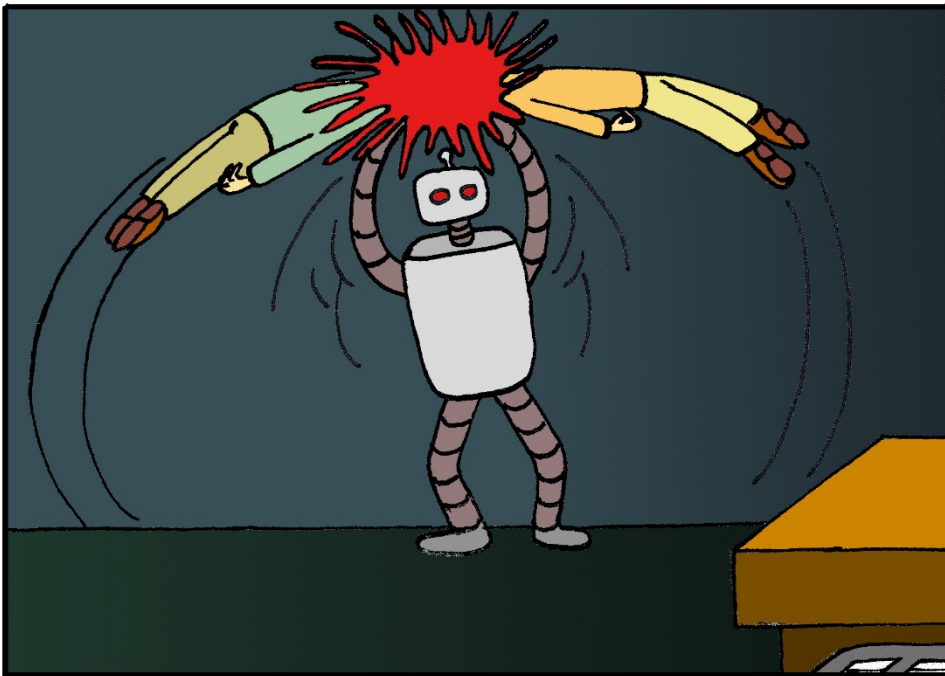
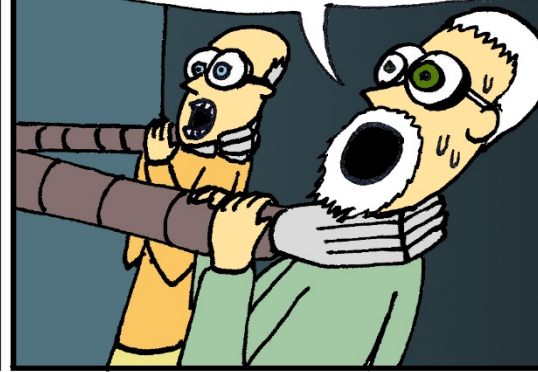
Let's build really, smart robots!

ilm

OH NO! THE ROBOTS ARE KILLING US!!!



BUT WHY?!!? WE NEVER PROGRAMMED THEM TO DO THIS!!!



```
static bool isCrazyMurderingRobot = false;
```

```
void interact_with_humans (void){  
    if(isCrazyMurderingRobot = true)  
        kill(humans);  
    else  
        be_nice_to(humans);  
}
```

ilm

Cognitive Services

- Extends and improves your chat bot
- Computer Vision allows you detect faces, analyze emotions, and even stabilize shaky videos!
- Speech API's allow you to detect speakers in an audio file
- Language allows you to build language models for parsing and processing text.
- We will look into Language Understanding, a.k.a., LUIS or Language Understanding Intelligent Services.

Cognitive Services

- Utterances
- Intents
- Entities
- Pre-built entities

MdcBankBot

App Settings

Publish

Intents +

None

mdcbankbot.intents.tell_joke

mdcbankbot.intents.get_account_info

mdcbankbot.intents.get_category_info

Entities +

jokes

account ▼

savings

checking

HTTP service ✕

Publish Current Application to URL for access via HTTP

Status: Published on 9/26/2016, 7:59:26 PM

Update published application

Query:

Timezone:

(GMT -6:00) Central Time (US & Canada), Mexico City ▼

URL: <https://api.projectoxford.ai/luis/v1/application?id=e3b9146c-7979-4337-bc52-f184c40b099b&subscription-key=160c50712d0546e0a88a5ca2e287c079>

Download web service usage logs

Download logs

 Train Your application is up to date. Last train completed: 9/26/2016, 7:58:52 PM

Demo

Let's see how smart these robots are

ilm