

# Bixby 101

## What, Why & How

### Voice Global 2020

Roger Kibbe  
Senior Developer Evangelist  
Viv Labs / Samsung  
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# Who Am I

Roger Kibbe

Senior Developer Evangelist  
Viv Labs / Samsung

*“Technology empowers and enables”  
“Technology should get out of the way”*

Dad - two teen daughters  
San Francisco Bay Area Native  
UC Berkeley Graduate – Go Bears!



@rogerkibbe

# What is Bixby

# What is Bixby

Samsung Bixby is a next-generation, AI platform that enables developers to build rich voice and conversational AI experiences for Samsung devices



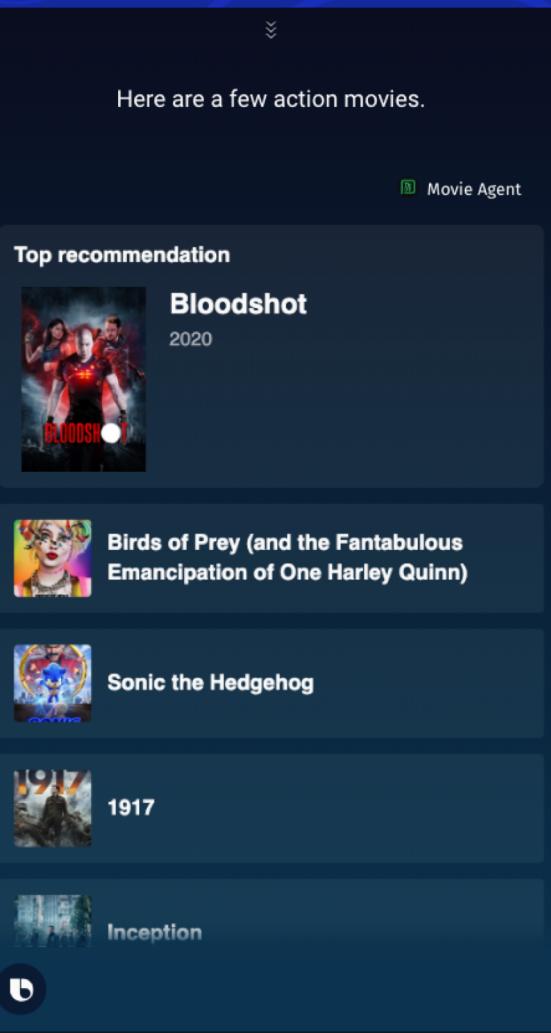
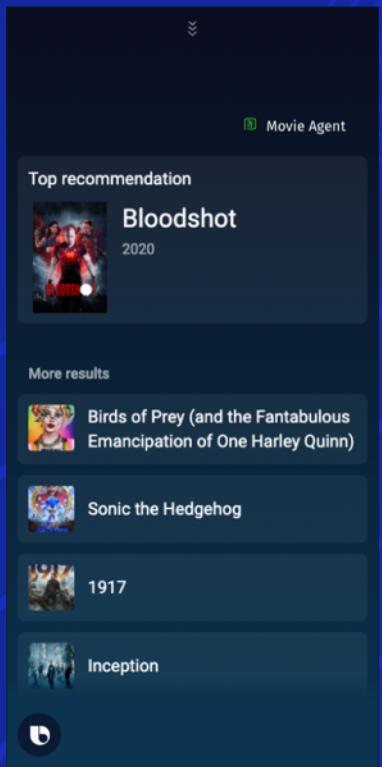
Video Demo  
of Bixby in  
Action

Not available  
in the PDF

# Multimodal

## Refrigerator

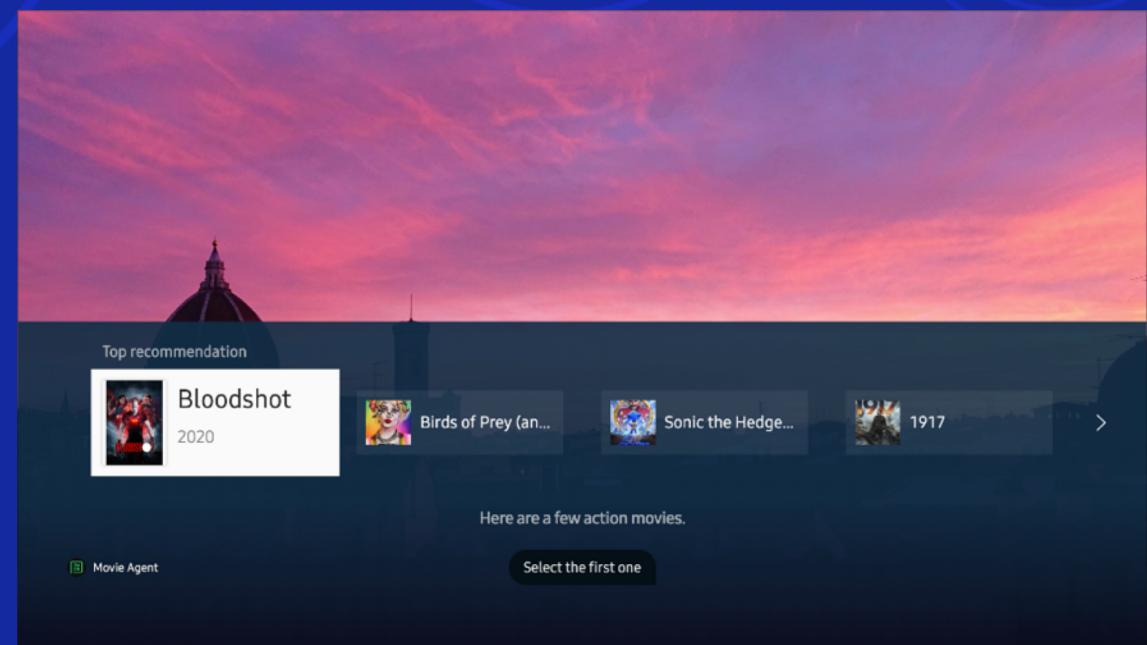
Mobile



Watch



Television



# Personalized Preferences

Morning



When is the next  
train from home  
to work?

Evening

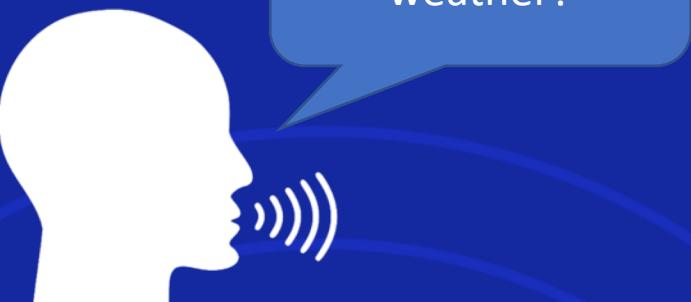


When is the next  
train from work to  
home?

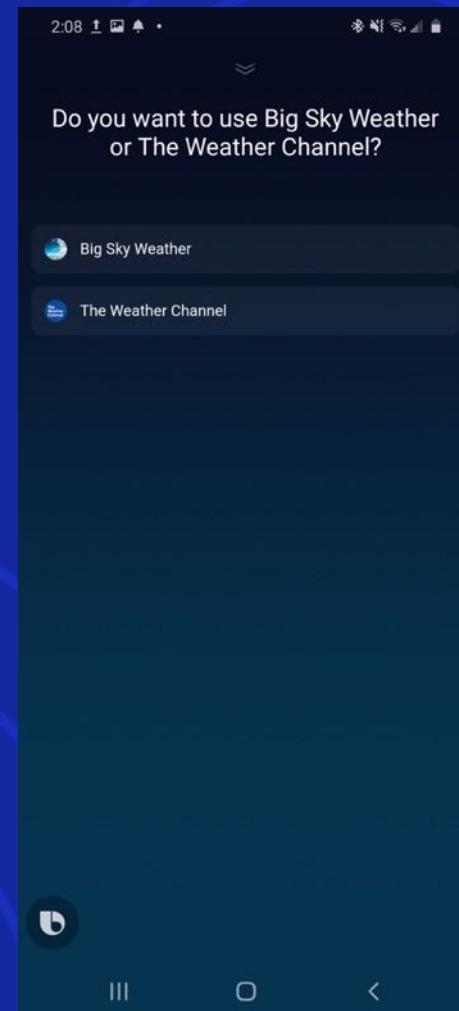


When is the next  
train?

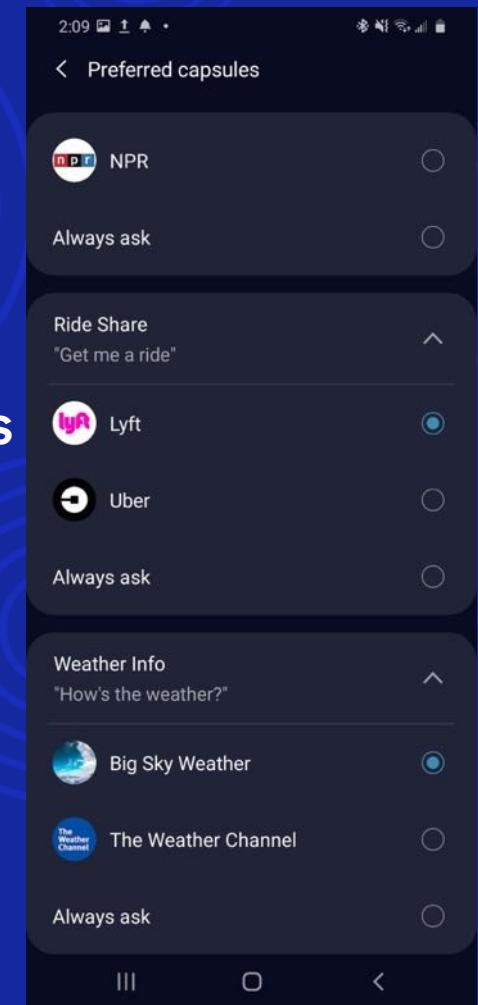
# Personalized Experiences



What's the weather?



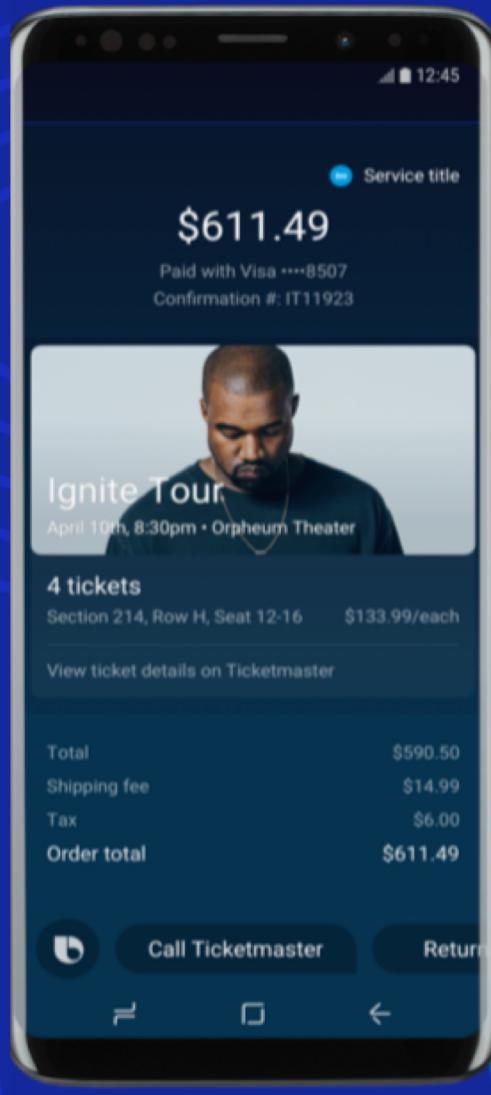
Settings



# Transactions & Payments



“Find a concert in  
New York City this  
Weekend”



Rich Transactional  
Support

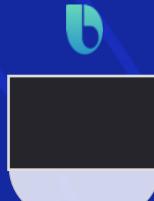
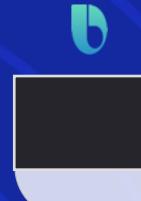
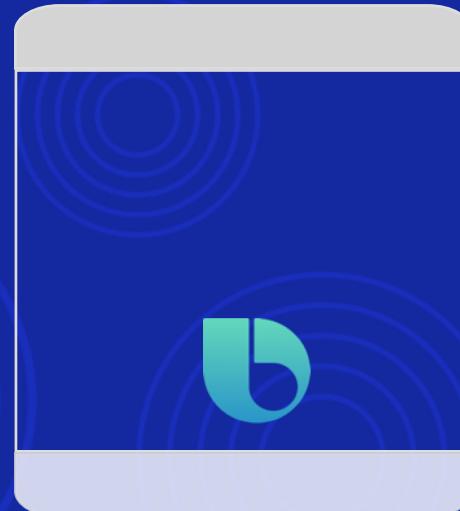
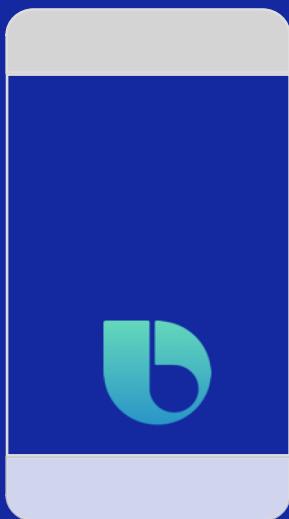
Payment support using  
Samsung Pay

Oauth Authentication

# Why Bixby

# Why Bixby

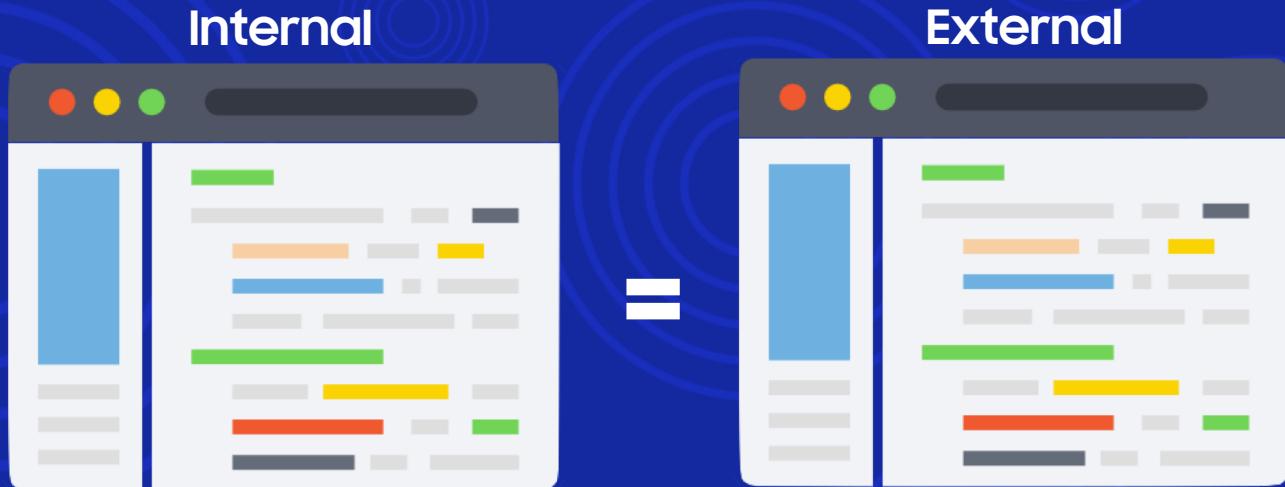
500 Million Bixby Enabled  
Devices Shipped per Year



# Level Playing Field

## Tools

## User Speech



# Ground Floor Opportunity

< 1K Capsules

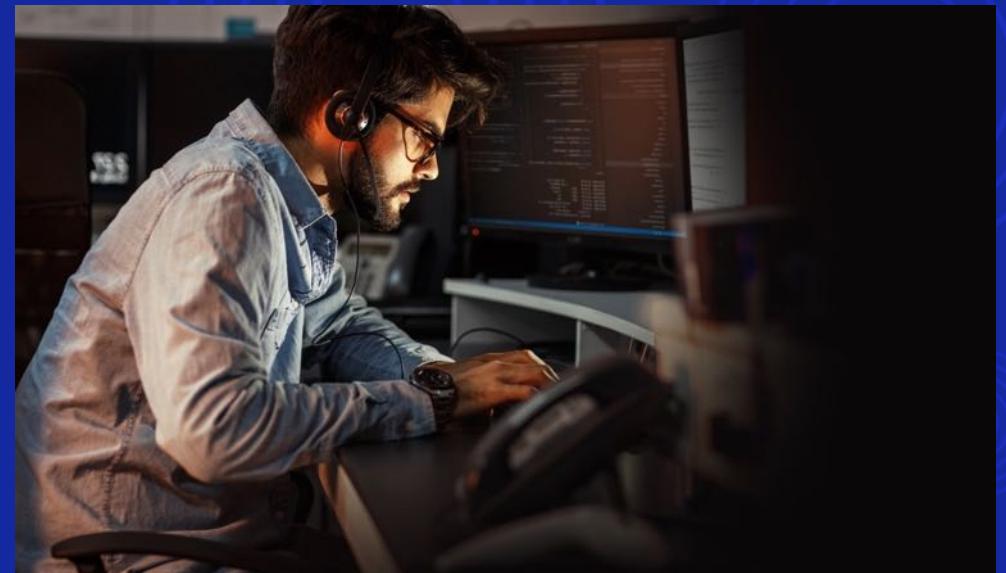
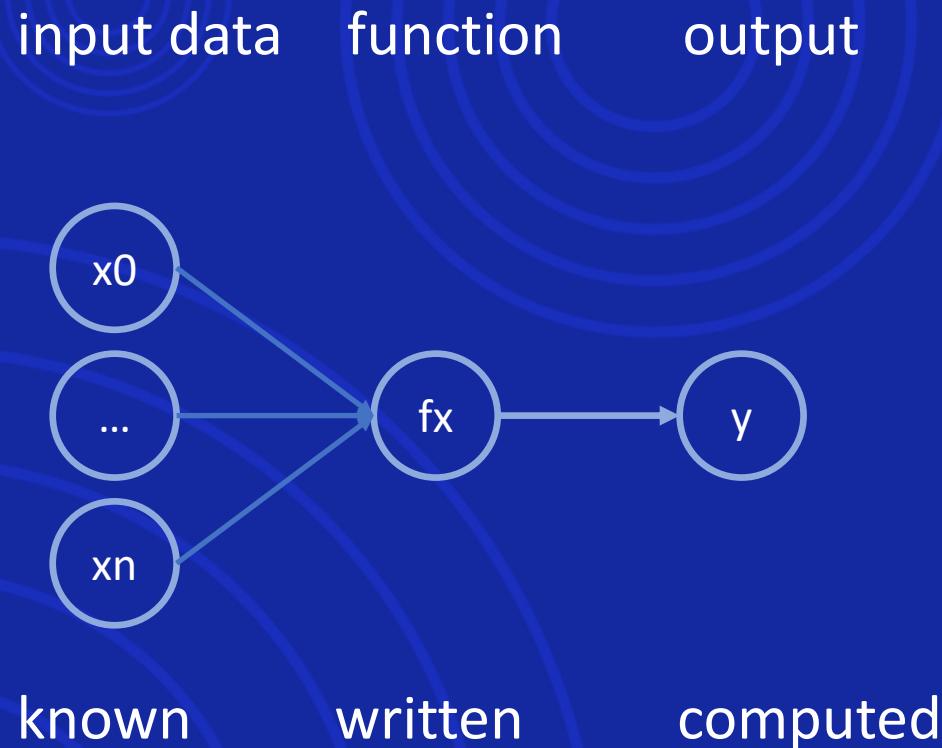
100's millions  
devices



# How to Develop for Bixby

# Human Driven

software engineering – human driven



# AI Driven

machine learning – AI driven

input data      function      output



known

learned

known



# Human + AI

dynamic program generation

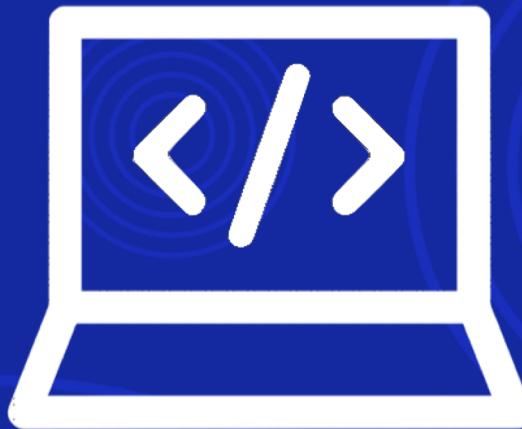
input data    function    output



known    generated    computed



# Bixby Development Style



Traditional

- Imperative
- Code Driven
- “How to do”



Bixby

- Declarative/Opinionated
- Model Driven
- “What to do”

# All in One IDE

```
ShootHands.js - Bixby Studio
playground.rockPaperScissorsLizardSpock
EmptyEndpoint.js
ShootHands.js
baseHandvocab.bsb
baseHand.vocab
LICENSE
README.md
SASSfile.css

var console = require("console");

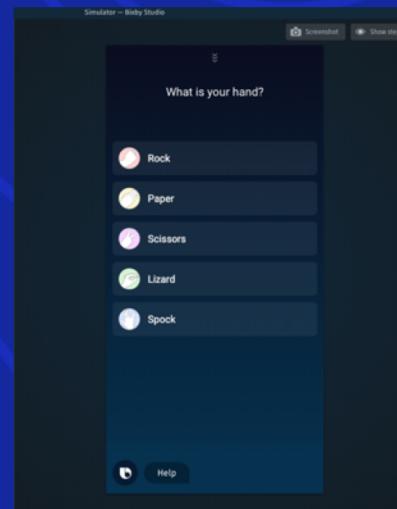
module.exports.function = function shootHands(userHand) {
  var bixbyHand = HANDS[Math.floor(Math.random()) * HANDS.length];
  var result = rpsslLogic(bixbyHand, userHand);

  if (DEBUG) {
    console.log(`Result: win = ${result.whomWin} message = ${result.message}`);
  }

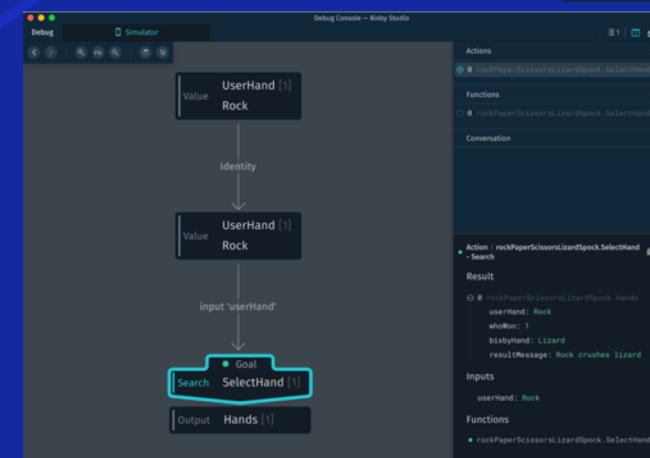
  return {
    userHand: userHand,
    bixbyHand: bixbyHand,
    resultMessage: result.message,
    whomWin: result.whomWin
  };
}

function rpsslLogic(bixbyHand, userHand) {
  var result = {};
  if (bixbyHand == userHand) {
    result.message = null;
    result.whomWin = 0;
    return result;
  } else if (userHand in RULES){ // Error handling for bad input
    var fail = require("fail");
    user.fall.request("Unrecognized hand from user.", "BadInput", null);
    return "Unrecognized hand";
  } else {
    if (bixbyHand in RULES[userHand]) {
      result.message = RULES[userHand][bixbyHand];
      result.whomWin = 1;
      return result;
    } else {
      result.message = RULES[bixbyHand][userHand];
      result.whomWin = 0;
    }
  }
}
```

Develop



Simulate

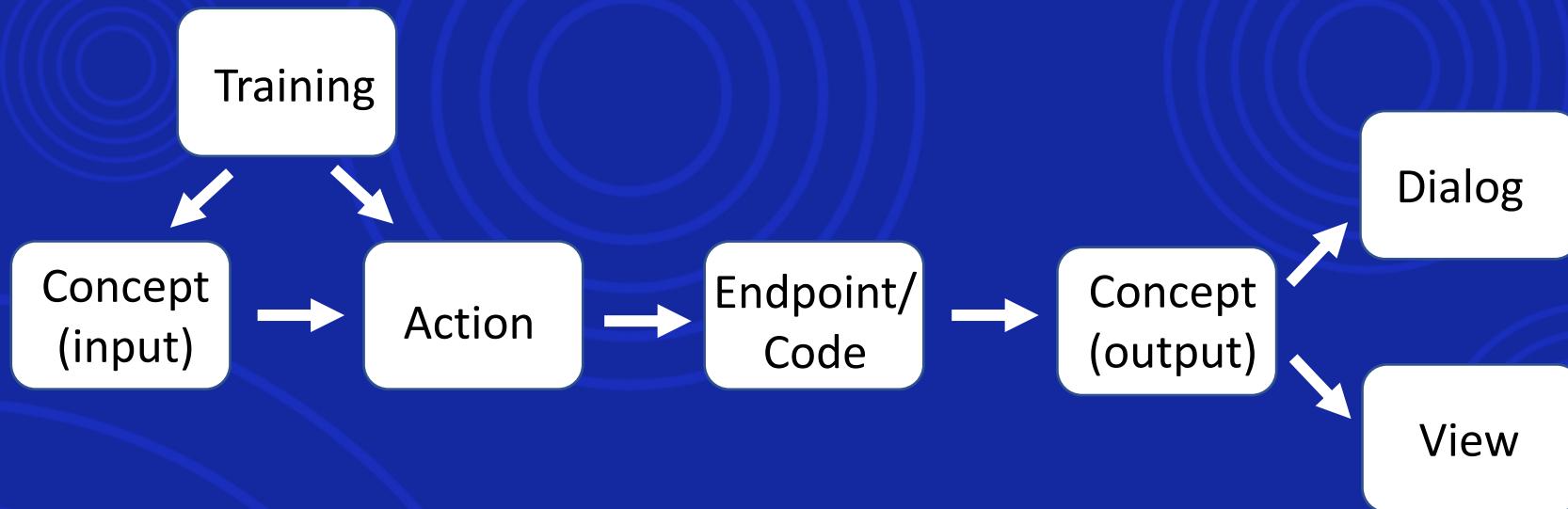


Debug

```
playRockPaperScissorsLizardSpock
Current Target: bixby-mobile-en-US
Story Status: Success
Story Type: Align NL
Step: Play Rock, Paper, Scissors...
Response:
  SPOILER: What is your hand: Rock, Paper, Scissors, Lizard or Spock?
  DISPLAY: What is your hand?
User Profile:
  Override default user profile
  Assertions
  HTTP Requests
Add a Step: NL Request, UI Interaction, Intent
```

Test

# Bixby Components



Bixby 101 Video – <https://bit.ly/bixby101>

# Bixby Templates

- Wizard driven Bixby starter capsules
- Creates basic Bixby capsule to extend

Select a template

Choose from a number of pre-designed Bixby templates. Featuring Learning & Knowledge templates, Fun & Games and Business templates.

 **Facts Template 1.0.5** Oct 15, 2019  
Do you have some interesting facts about a hobby or passion to share? The Facts Template is the perfect place to share that content by building a Bixby capsule.  
Bixby Team

 **Import and Search Template 1.0.7** Oct 14, 2019  
Generates a capsule from data in CSV files  
Bixby Team

 **Jokes Template 1.0.4** Oct 15, 2019  
Do you have a set of LOL jokes to share? The Jokes Template is the perfect place to share that content by building a Bixby capsule.  
Bixby Team

 **Podcast Template 1.0.4** Oct 15, 2019  
Do you have a podcast to share? The Podcast Template is the perfect place to share your podcast by building a Bixby capsule.  
Bixby Team

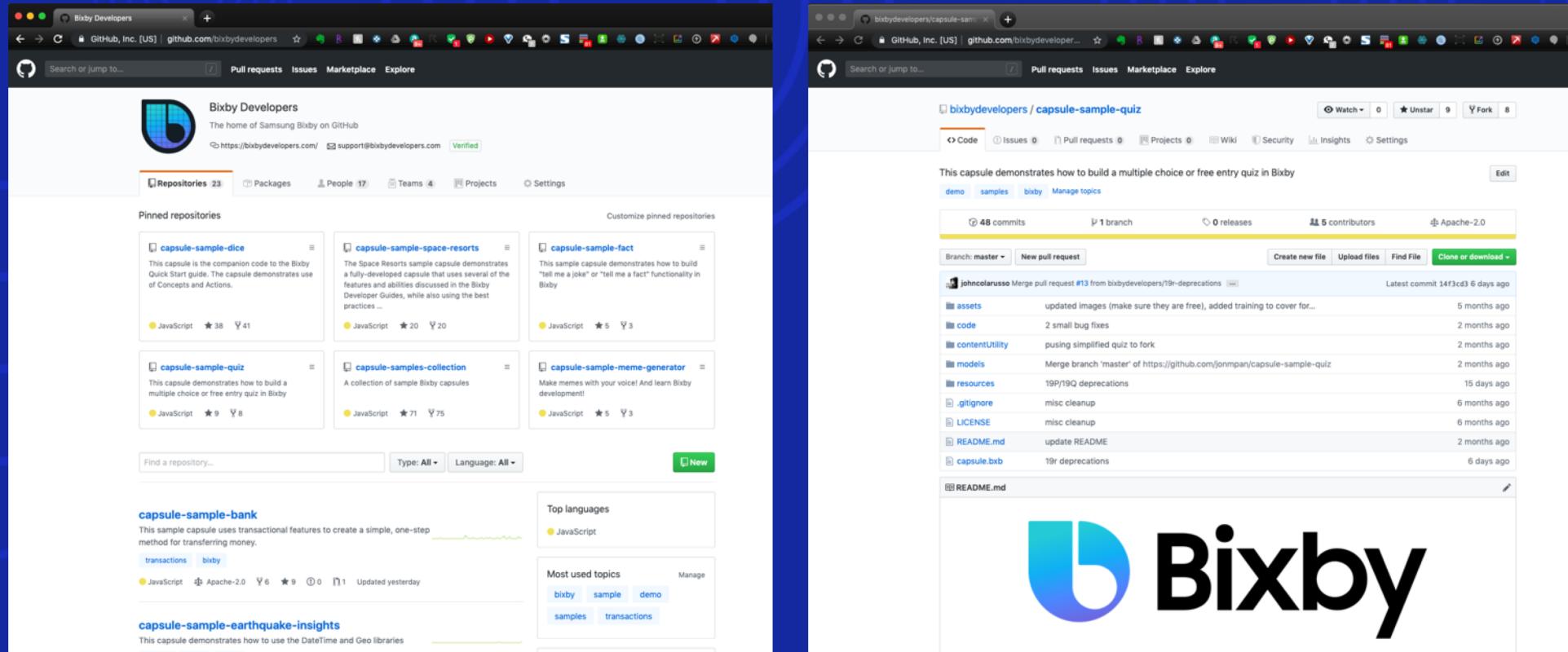
 **Quiz Template 1.0.13** Oct 15, 2019  
Do you have a great idea for a quiz that will entertain and delight Bixby users? The Quiz Template is the perfect place to start building a Bixby quiz capsule!  
Bixby Team

# Voice Assistant Terminology

|                        | <br>Bixby | <br>amazon alexa | <br>Google Assistant |
|------------------------|--|---|---|
| Voice Application      | Capsule  | Skill   | Action  |
| Application Start Name | Dispatch Name  | Invocation Name   | Invocation Name   |
| NLU Training           | Training   | Sample Utterances   | Training Phrases  |
| Context/Input Objects  | Concept  | Slot  | Entity  |
| Goal/Intent            | Action   | Intent  | Intent  |
| Mapping Intent to Code | Endpoint   | Handler   | Web Hook  |
| Code/Business Logic    | JavaScript Function  | Lambda  | Cloud Function/Firebase   |
| Output Speech          | Dialog   | Speak/Reprompt  | Conversation  |
| UI                     | View   | Card/APL  | Rich Response/<br>Interactive Canvas  |

# Bixby on Github

## [github.com/bixbydevelopers](https://github.com/bixbydevelopers)



# Bixby on YouTube

[www.youtube.com/c/bixbydevelopers](https://www.youtube.com/c/bixbydevelopers)

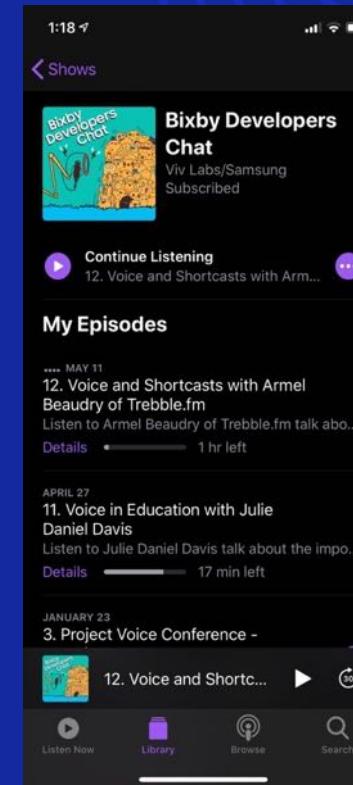
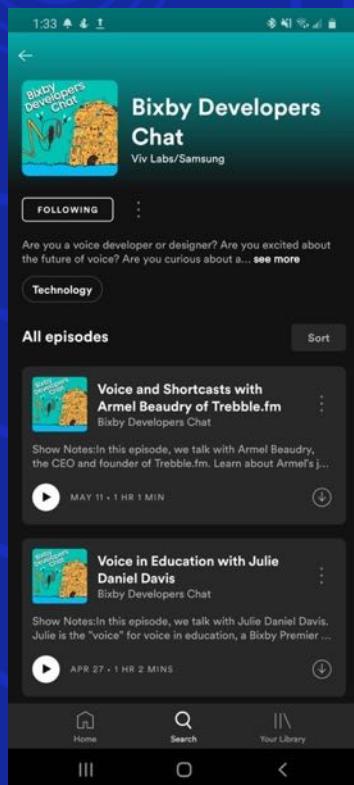
The screenshot shows the YouTube channel page for 'Bixby Developers'. The channel has 661 subscribers. The main video thumbnail is titled 'Bixby Studio Tutorial - Hello World (2020 Edition)' with a duration of 13:08. Below the main video, there are four recommended videos: 'Bixby Studio Result Views' (45:46), 'Bixby Studio Input Views' (20:04), 'Bixby Studio - Geo Library Quickstart' (7:53), and 'Bixby Studio Tutorial - Hello World (2020 Edition)' (13:08). The sidebar on the left includes links to Home, Trending, Subscriptions, Library, History, Your videos, Watch later, and Bixby Tech Tutorial Series. It also shows a 'SUBSCRIPTIONS' section for Samsung Developers and a 'MORE FROM YOUTUBE' section for Bixby Studio.

This screenshot shows the 'Bixby Starter Kit' series, which consists of three parts: 'Bixby 101: Introduction to Bixby', 'Bixby 201: Intermediate Bixby - Modeling and Javascript', and 'Bixby 202: Intermediate Bixby - Dialog, Layouts and Training'. Each video is 12:17, 19:42, and 18:25 respectively. All three videos were uploaded by Bixby Developers 11 months ago.

This screenshot shows the 'Bixby Studio Tutorials' series, which includes five videos: 'Bixby Studio Tutorial - Hello World (2020 Edition)', 'Bixby Studio - Result View Tutorial', 'Bixby Studio - Input View Tutorial', 'Bixby Studio Tutorial - Geo Library Quickstart', and 'Bixby Studio QuickStart Tutorial'. The first video is 13:08, the second is 45:46, the third is 20:04, the fourth is 7:53, and the fifth is 7:53. All videos were uploaded by Bixby Developers within the last 9 months.

# Bixby Developers Chat Podcast

bixbydev.buzzsprout.com



# Bixby on Social



@BixbyDevelopers



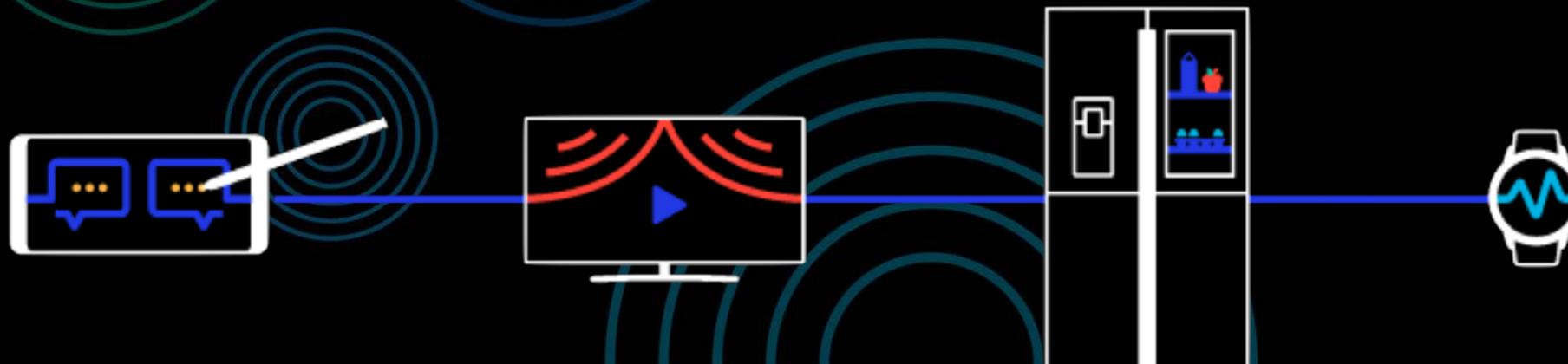
[www.facebook.com/  
BixbyDevelopers/](https://www.facebook.com/BixbyDevelopers/)

We are not trying to build  
the world's best assistant.  
We are enabling the world  
to build the best assistant

- Adam Cheyer

# Beyond the Smart Speaker

## A Call to Action



# Getting Started

## bixbydevelopers.com

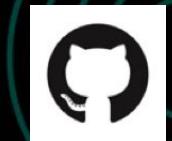


The screenshot shows the Bixby Developer Center homepage. At the top, there's a navigation bar with the Samsung logo, a search icon, a support link, and a user profile icon. Below the header, a main section features a "Welcome to the Bixby Developer Center!" message. It describes Bixby as a next-generation conversational assistant platform and mentions the recent launch of the Bixby Marketplace. The message is signed off by "The Bixby Team". Below this, there's a "Download Bixby Developer Studio" section with links for Windows, Mac OS X, and Linux. The Windows link specifies "7 or later", the Mac OS X link specifies "10.12 or later", and the Linux link specifies "ALPHA: Ubuntu Desktop 18.04+, Fedora 30+". There are also "See Latest Release Notes" and "Support" links. At the bottom, there are two sections: "Quick Actions" with links to "Download Sample Capsules", "Browse Bixby Library Capsules", "Create Your Team", and "See Useful Bixby Studio Hotkeys"; and "Join The Community" with links to "Bixby Events", "StackOverflow", "Official Bixby Community", and "Developer Newsroom".

# Bixby Developers Resources



[bixbydevelopers.com](https://bixbydevelopers.com)



[github.com/bixbydevelopers](https://github.com/bixbydevelopers)



[www.youtube.com/c/BixbyDevelopers](https://www.youtube.com/c/BixbyDevelopers)



[bixbydev.buzzsprout.com](https://bixbydev.buzzsprout.com)



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# Thank you

Roger Kibbe | Senior Technical Evangelist

[@rogerkibbe](https://twitter.com/rogerkibbe)

[www.linkedin.com/in/rkibbe/](https://www.linkedin.com/in/rkibbe/)