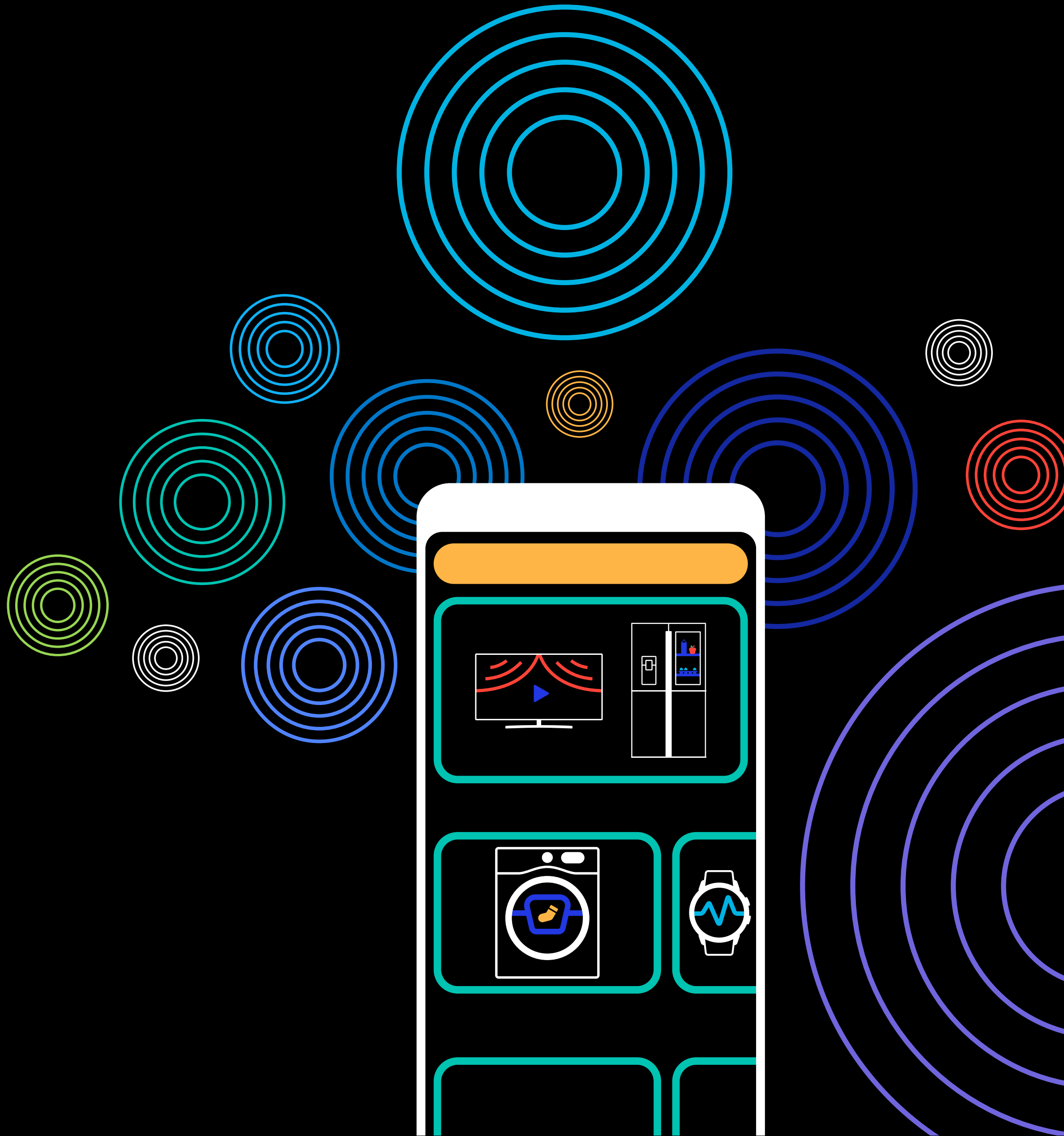
SAMSUNG

Bixby Developers

Bixby Tips & Tricks



Office Hours - Oct 9, 2020

SAMSUNG

Bixby Developers

Introductions

@rogerkibbe

Roger Kibbe

- Senior Developer Evangelist
- Father of two daughters
- UC Berkeley Graduate – Go Bears!

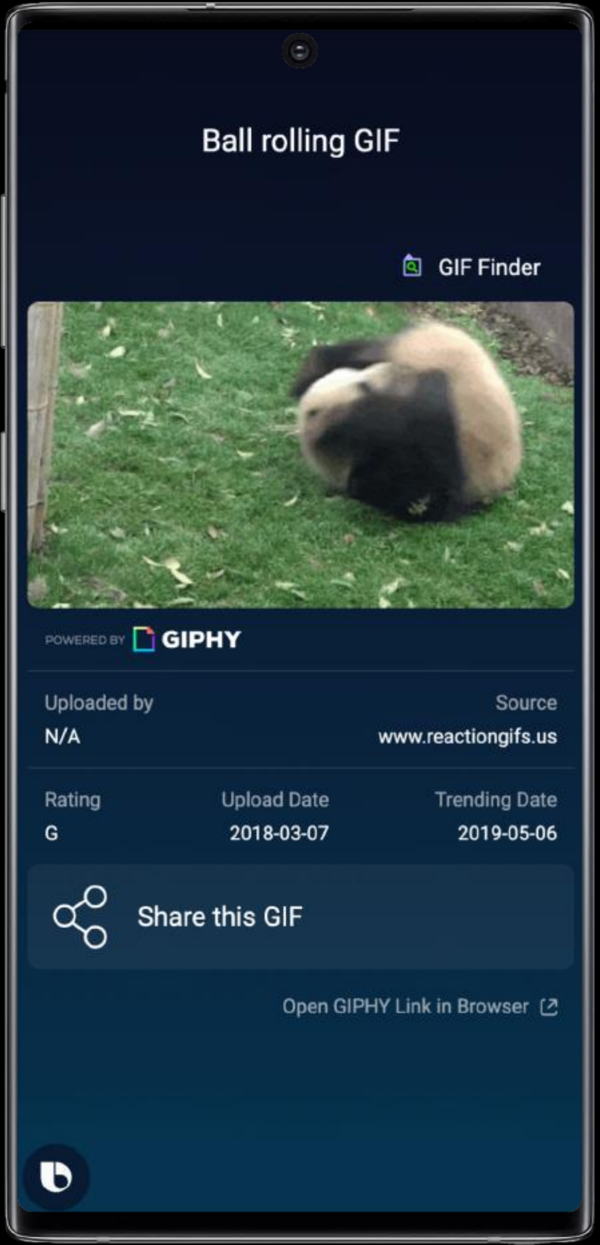
@JohnWithoutTheH

Jonathan Pan

- Developer Evangelist
- Has 4 too many cats (meow)

Bixby Themes

Current Theme



Ball rolling GIF

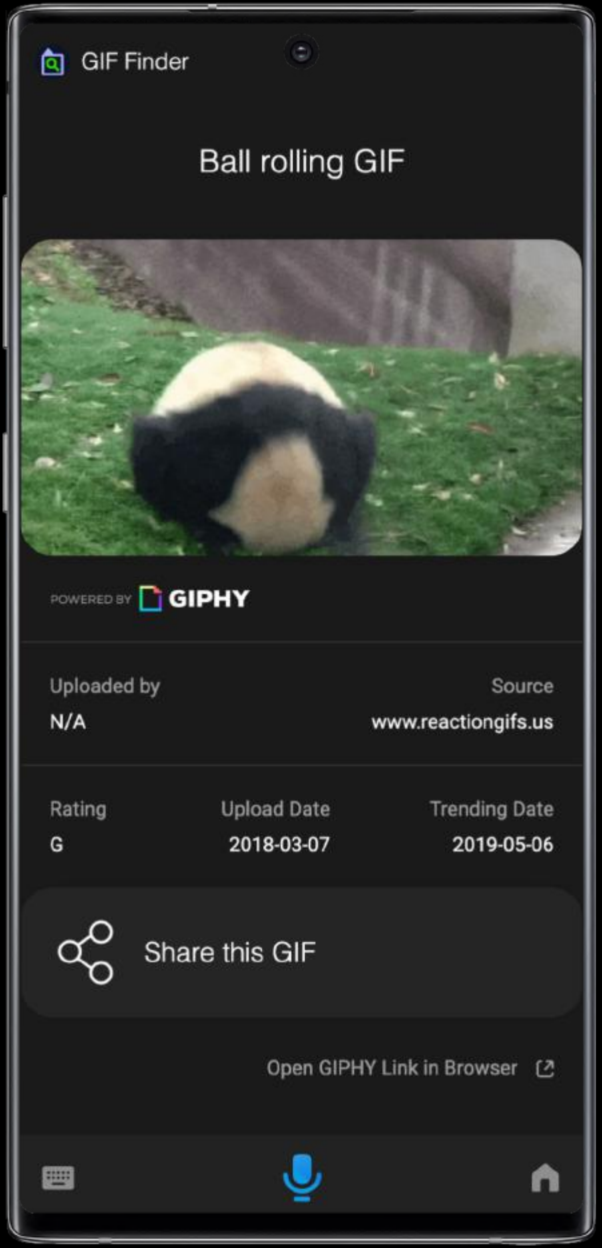
GIF Finder

Uploaded by: N/A

Source: www.reactiongifs.us

Rating	Upload Date	Trending Date
G	2018-03-07	2019-05-06

New Dark Theme



GIF Finder

Ball rolling GIF

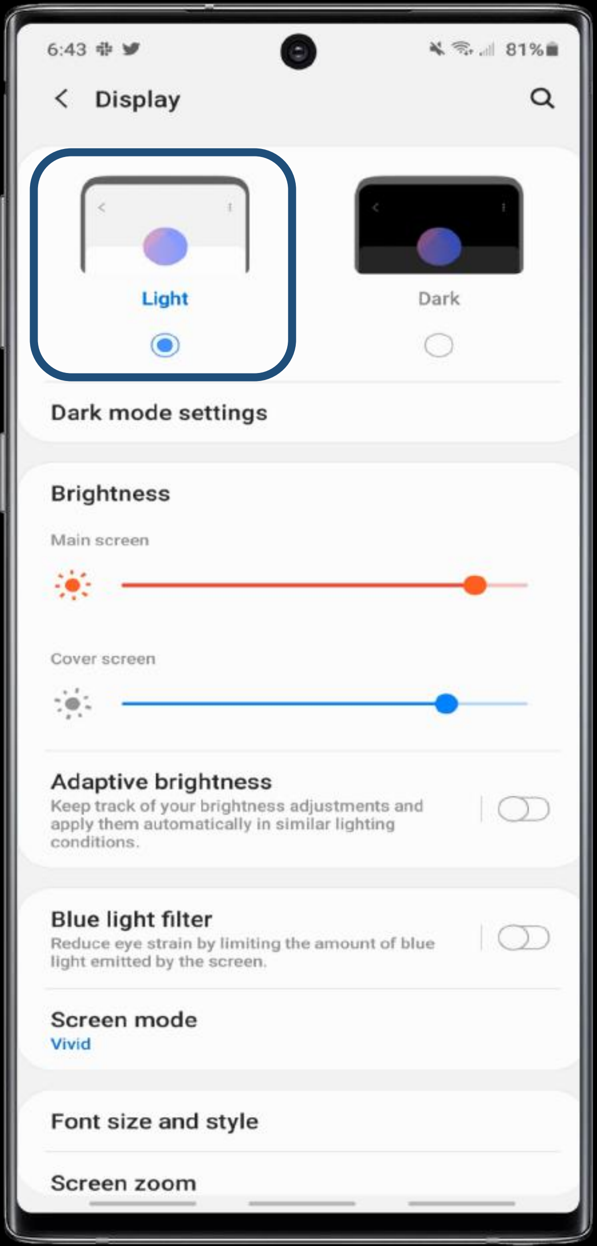
Uploaded by: N/A

Source: www.reactiongifs.us

Rating	Upload Date	Trending Date
G	2018-03-07	2019-05-06

Bixby Themes

Settings → Display



6:43 81%

Display

● Light ○ Dark

Dark mode settings

Brightness

Main screen

Cover screen

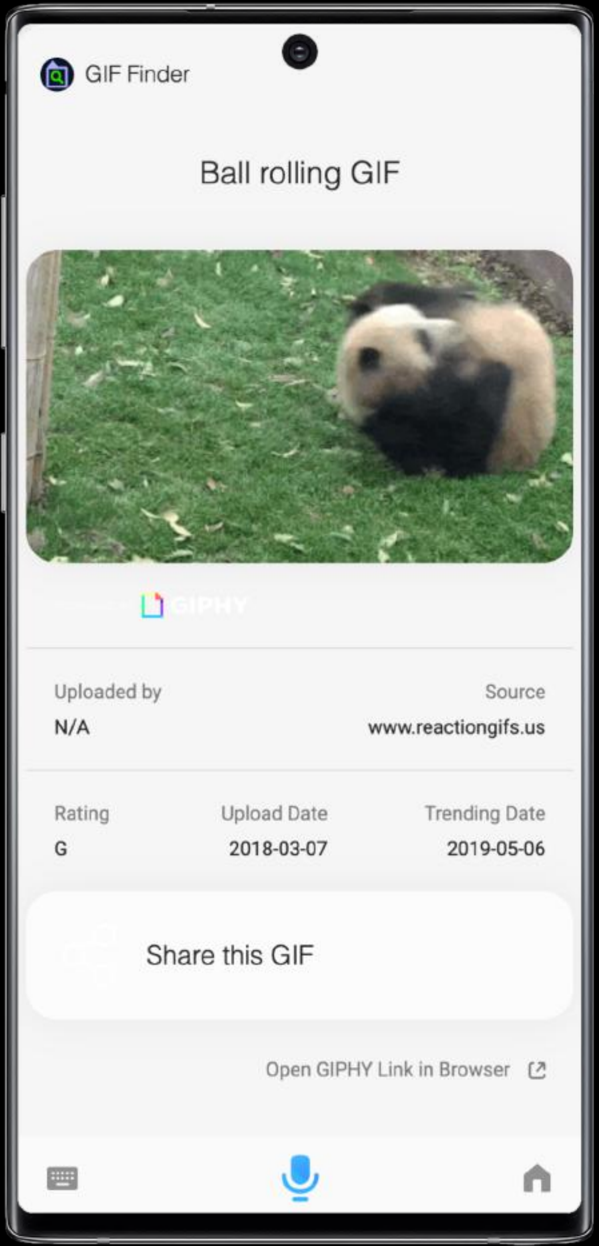
Adaptive brightness
Keep track of your brightness adjustments and apply them automatically in similar lighting conditions.

Blue light filter
Reduce eye strain by limiting the amount of blue light emitted by the screen.

Screen mode
Vivid

Font size and style

Screen zoom



GIF Finder

Ball rolling GIF

GIPHY

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N/A		www.reactiongifs.us

Rating	Upload Date	Trending Date
G	2018-03-07	2019-05-06

Share this GIF

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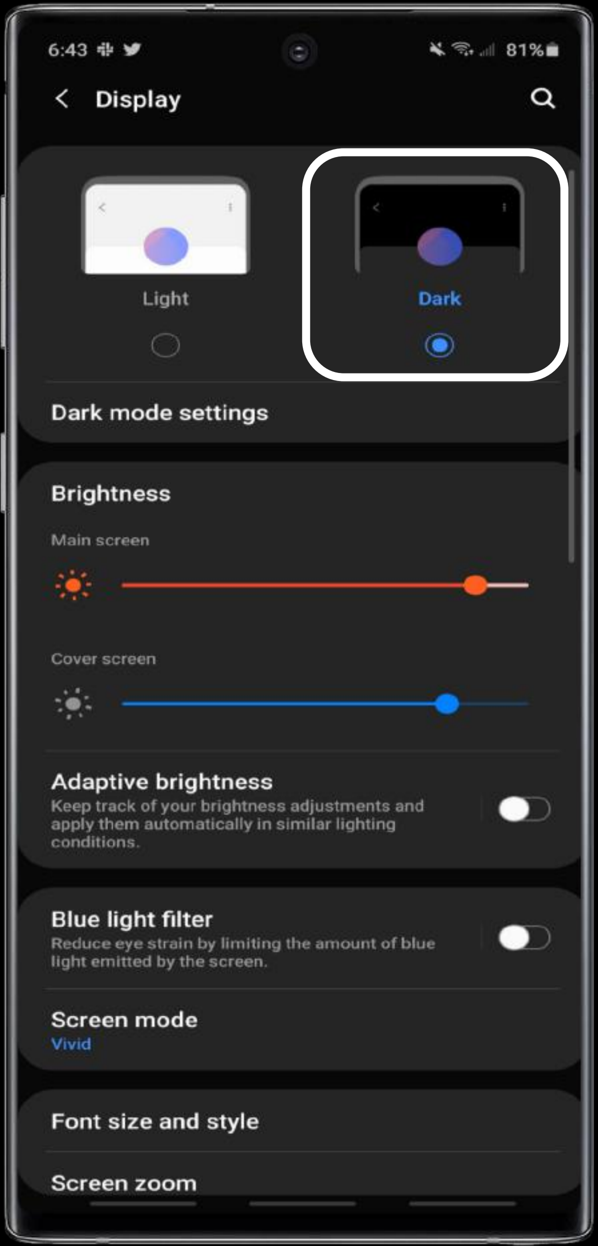
Bixby Themes

Settings → Display



6:43 81%

Display

Light ○

Dark ●

Dark mode settings

Brightness

Main screen

Cover screen

Adaptive brightness

Keep track of your brightness adjustments and apply them automatically in similar lighting conditions.

Blue light filter

Reduce eye strain by limiting the amount of blue light emitted by the screen.

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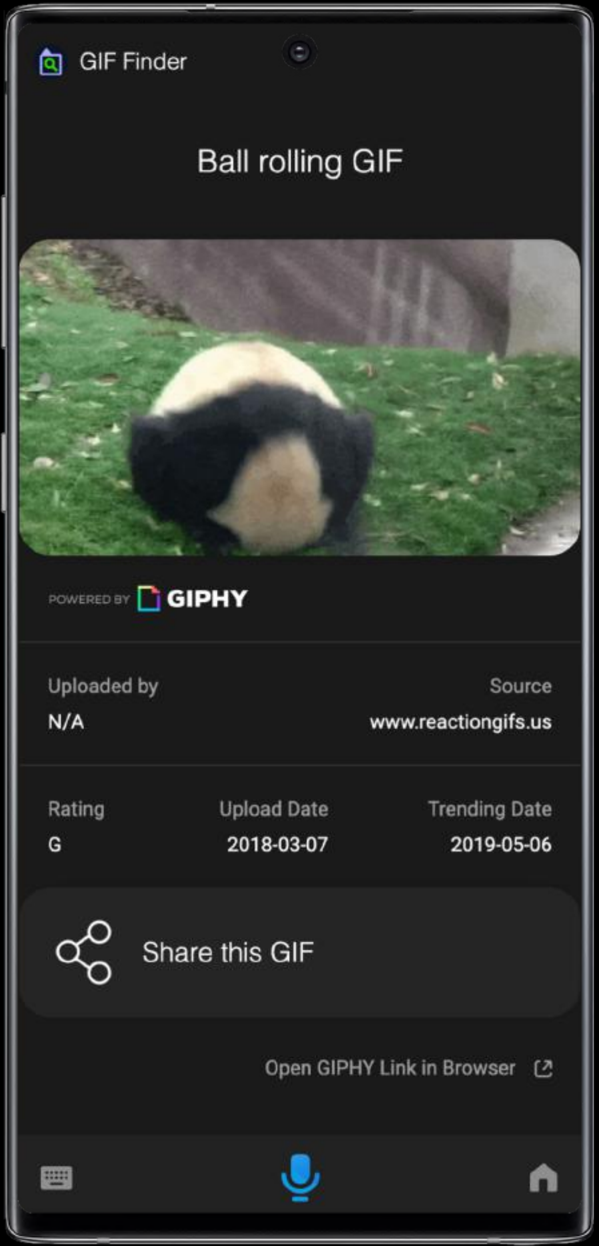
Screen zoom



GIF Finder

Ball rolling GIF

POWERED BY GIPHY

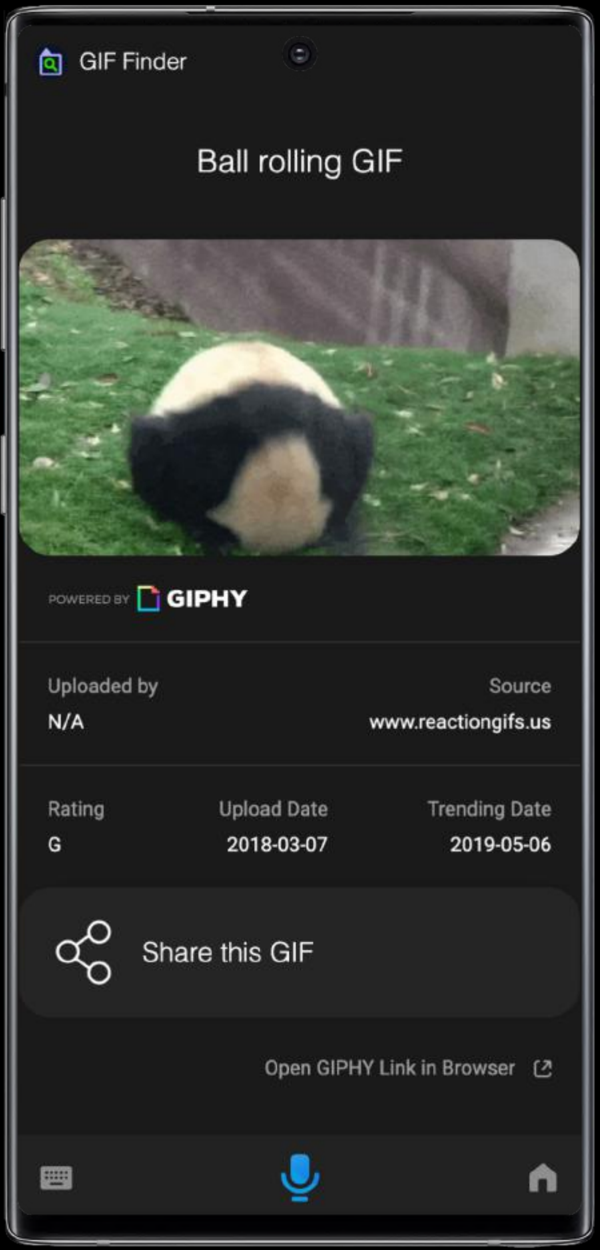
Uploaded by		Source
N/A		www.reactiongifs.us

Rating	Upload Date	Trending Date
G	2018-03-07	2019-05-06

Share this GIF

Open GIPHY Link in Browser

Bixby Themes



GIF Finder

Ball rolling GIF

Uploaded by: N/A

Source: www.reactiongifs.us

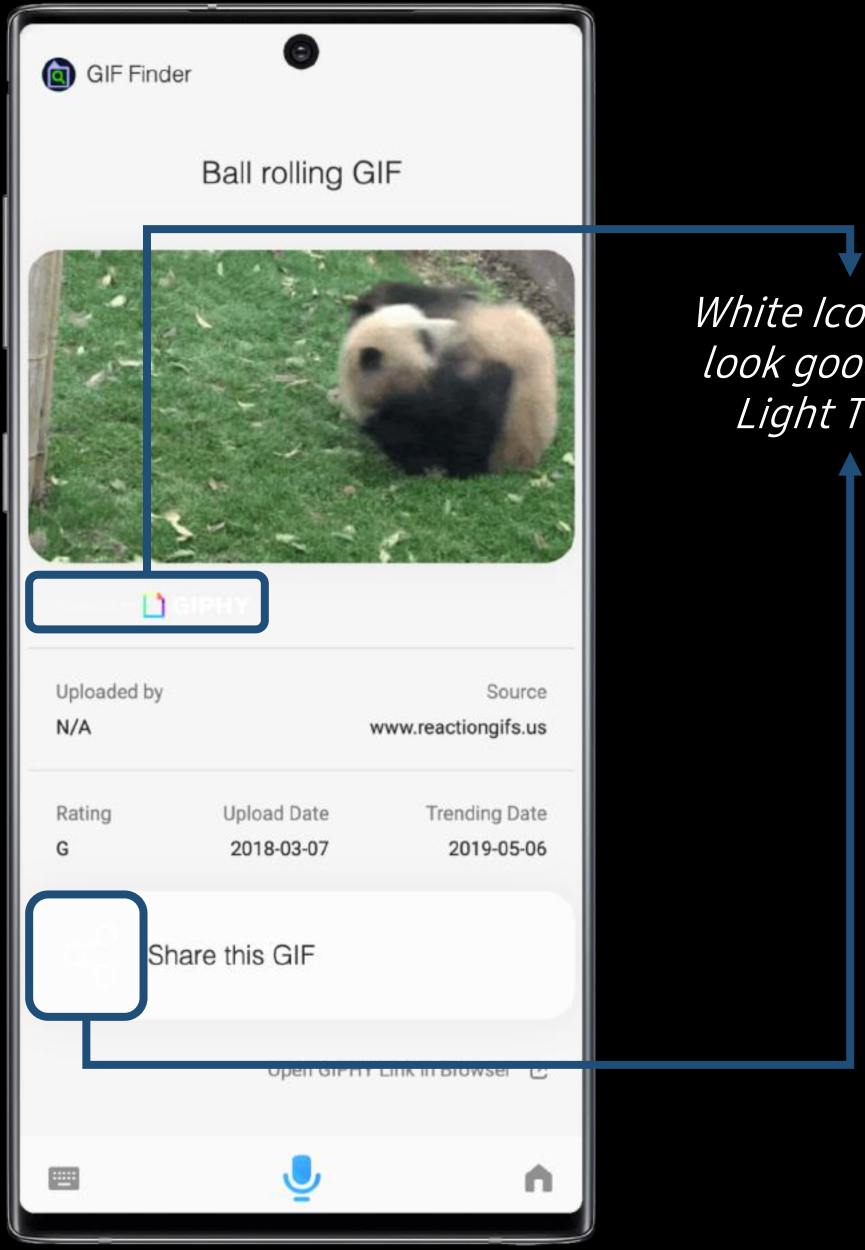
Rating: G

Upload Date: 2018-03-07

Trending Date: 2019-05-06

Share this GIF

Open GIPHY Link in Browser



GIF Finder

Ball rolling GIF

Uploaded by: N/A

Source: www.reactiongifs.us

Rating: G

Upload Date: 2018-03-07

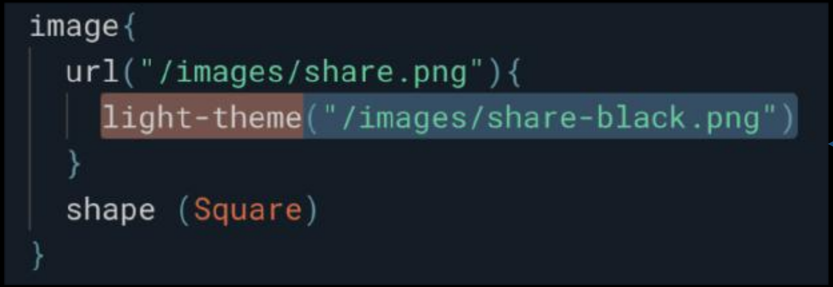
Trending Date: 2019-05-06

Share this GIF

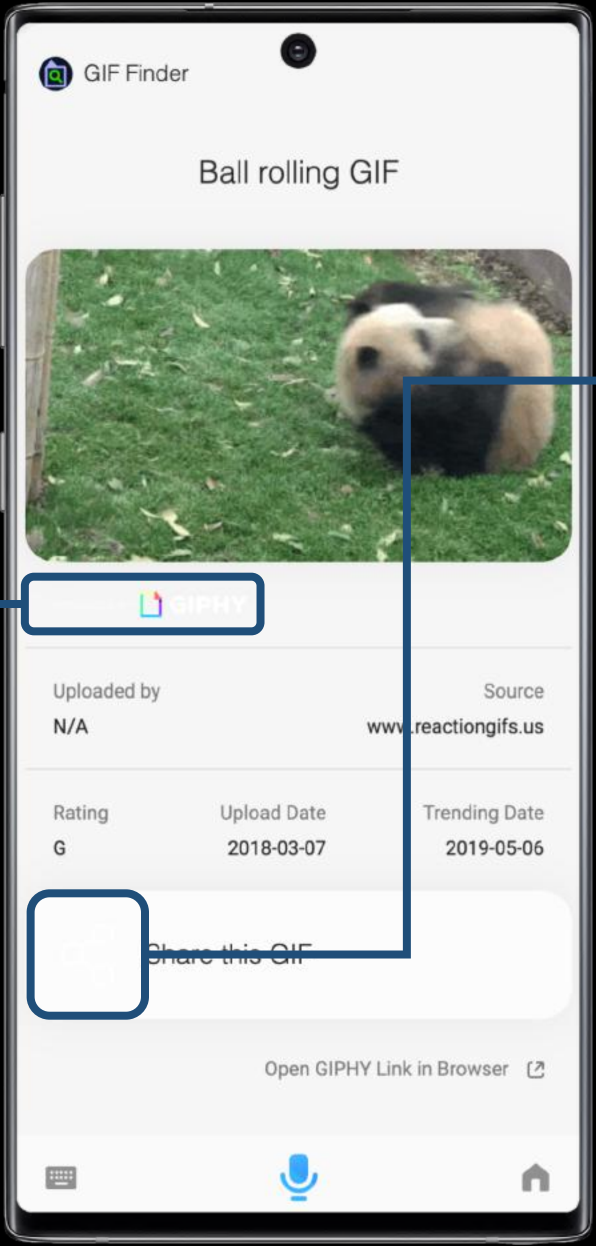
Open GIPHY Link in Browser

White Icons don't look good in the Light Theme

Bixby Themes



```
image{
  url("/images/share.png"){
    light-theme("/images/share-black.png")
  }
  shape (Square)
}
```



GIF Finder

Ball rolling GIF

Uploaded by
N/A

Source
www.reactiongifs.us

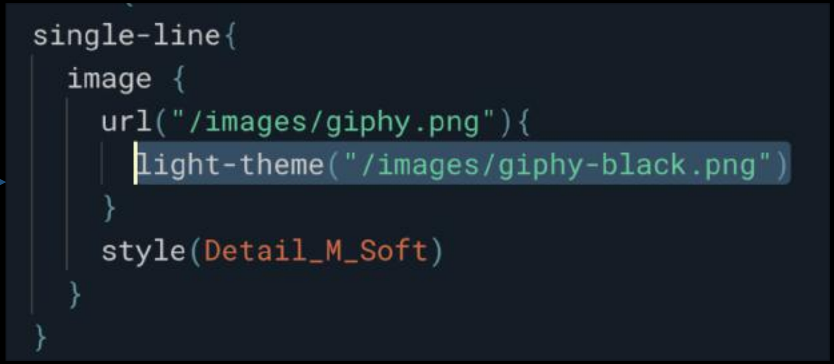
Rating
G

Upload Date
2018-03-07

Trending Date
2019-05-06

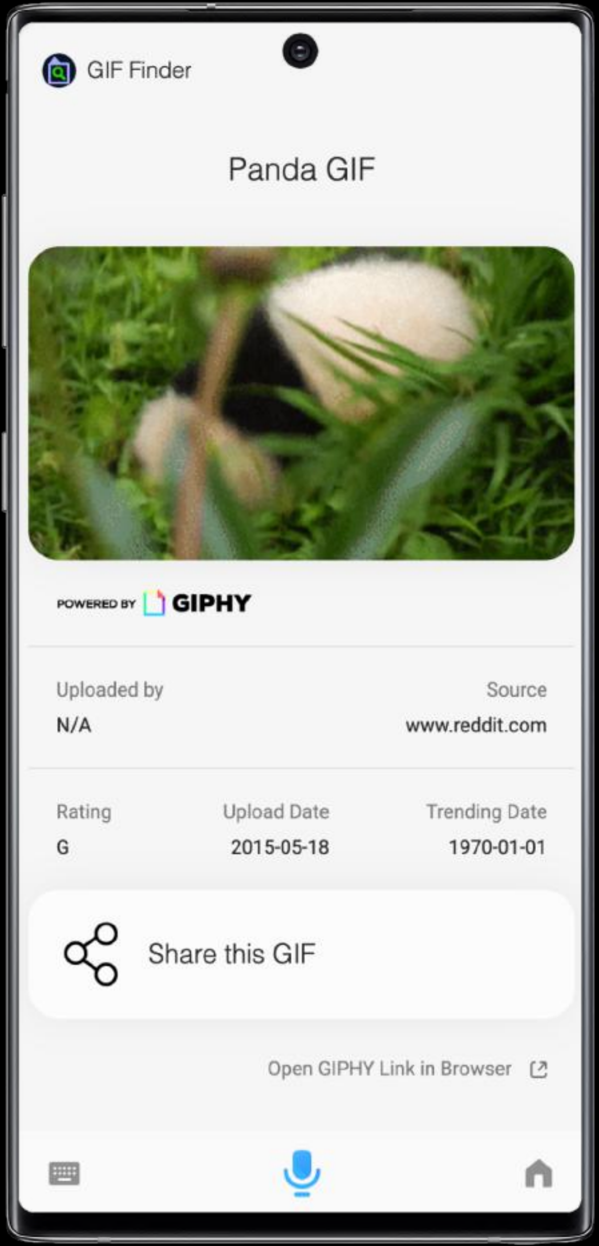
Share this GIF

Open GIPHY Link in Browser



```
single-line{
  image {
    url("/images/giphy.png"){
      light-theme("/images/giphy-black.png")
    }
    style(Detail_M_Soft)
  }
}
```

Bixby Themes



GIF Finder

Panda GIF

POWERED BY GIPHY

Uploaded by

N/A

Source

www.reddit.com

Rating

G

Upload Date

2015-05-18

Trending Date

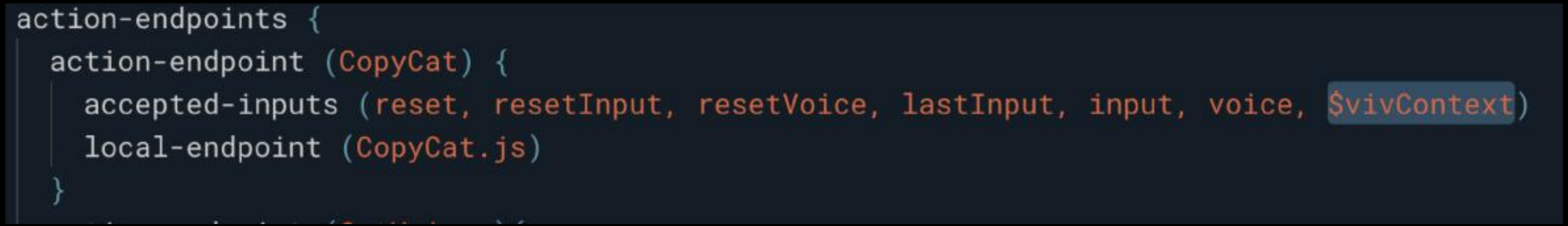
1970-01-01

Share this GIF

Open GIPHY Link in Browser

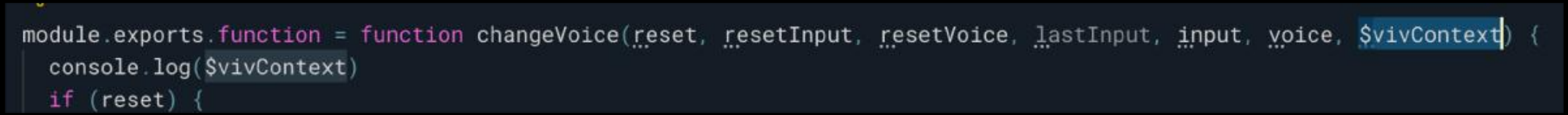
$vivContext

Pass $vivContext into your endpoints.bxb



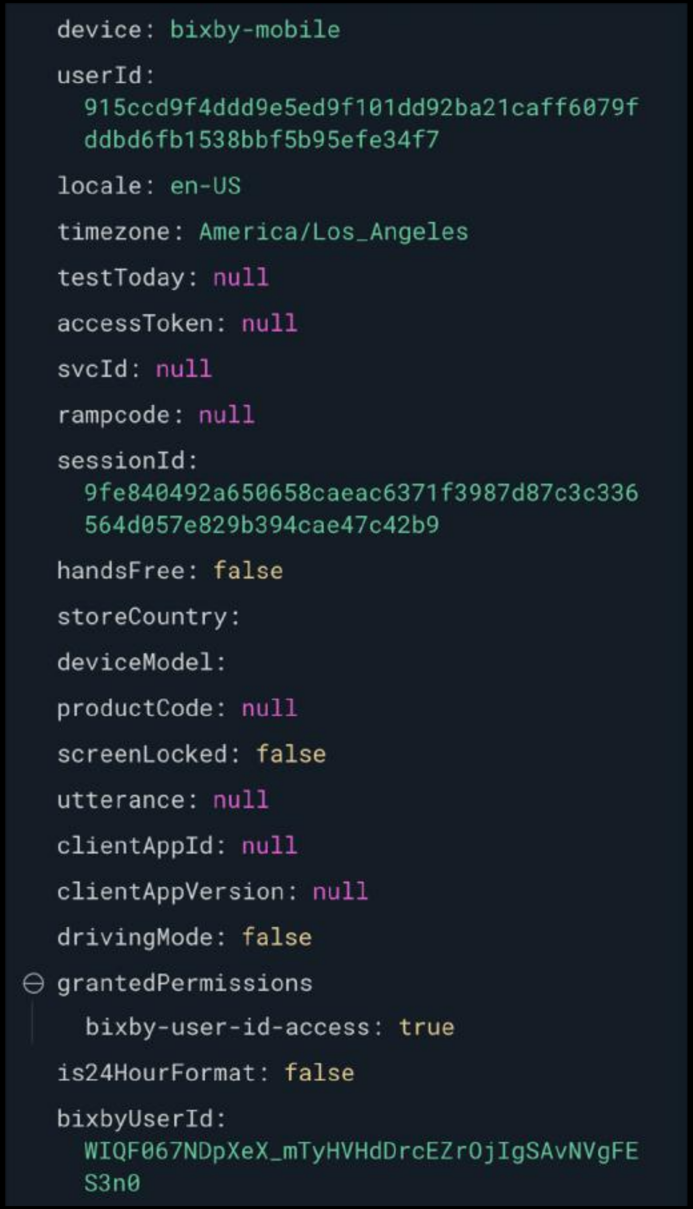
```
action-endpoints {
  action-endpoint (CopyCat) {
    accepted-inputs (reset, resetInput, resetVoice, lastInput, input, voice, $vivContext)
    local-endpoint (CopyCat.js)
  }
```

Access it in your javascript file



```
module.exports.function = function changeVoice(reset, resetInput, resetVoice, lastInput, input, voice, $vivContext) {
  console.log($vivContext)
  if (reset) {
```

$vivContext



```
device: bixby-mobile
userId:
  915ccd9f4ddd9e5ed9f101dd92ba21caff6079f
  ddbd6fb1538bbf5b95efe34f7
locale: en-US
timezone: America/Los_Angeles
testToday: null
accessToken: null
svcId: null
rampcode: null
sessionId:
  9fe840492a650658caeac6371f3987d87c3c336
  564d057e829b394cae47c42b9
handsFree: false
storeCountry:
deviceModel:
productCode: null
screenLocked: false
utterance: null
clientAppId: null
clientAppVersion: null
drivingMode: false
⊖ grantedPermissions
    bixby-user-id-access: true
is24HourFormat: false
bixbyUserId:
  WIQF067NDpXeX_mTyHVHdDrcEZrOjIgSAvNVgFE
  S3n0
```

device: Provide custom experience based on the platform

accessToken: Your oAuth 2.0 access token

sessionId: Stays the same throughout a user's session

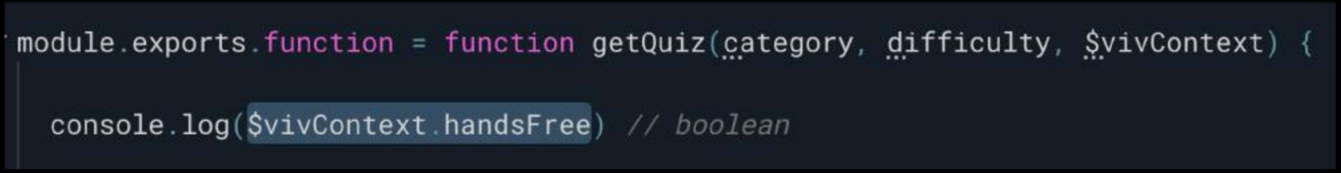
handsfree: Provide more detailed dialog if user is hands free

grantedPermissions: Provide different results depending on permissions

bixbyUserId: Doesn't change across devices and sessions

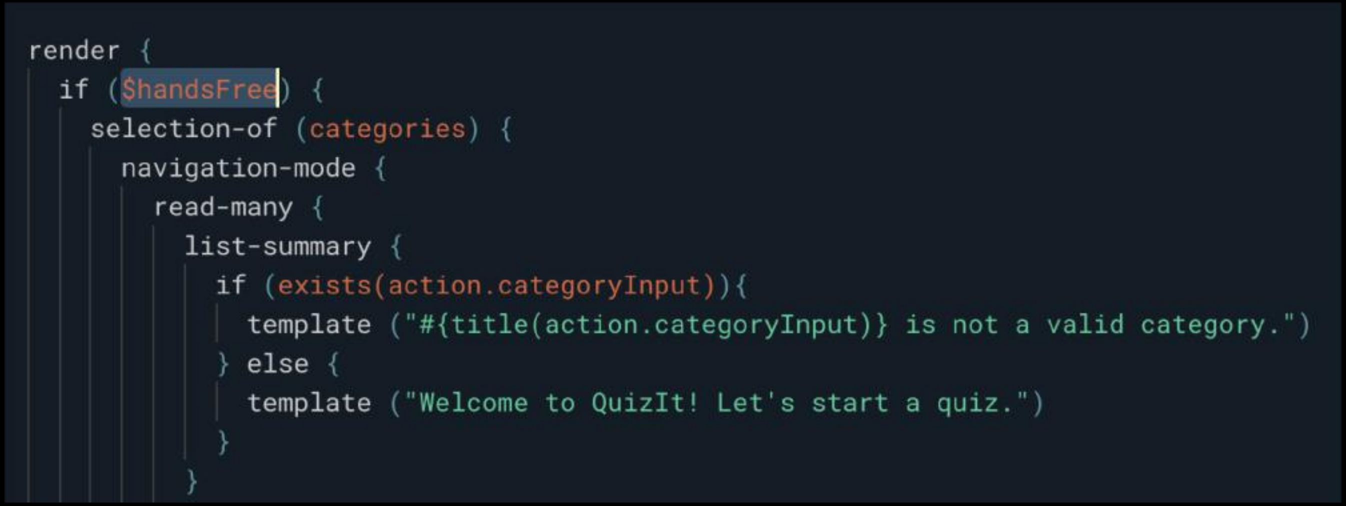
Hands Free Mode

Javascript



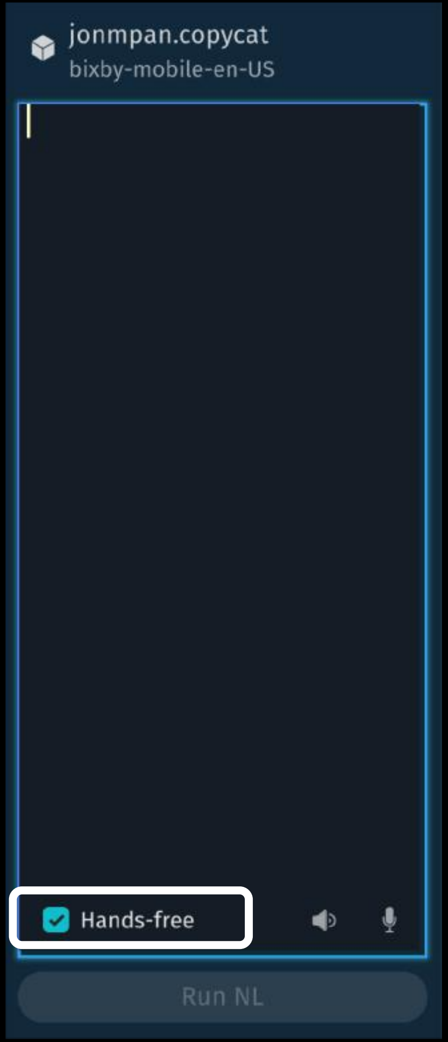
```
module.exports.function = function getQuiz(category, difficulty, $vivContext) {

  console.log($vivContext.handsFree) // boolean
```

Bixbyland

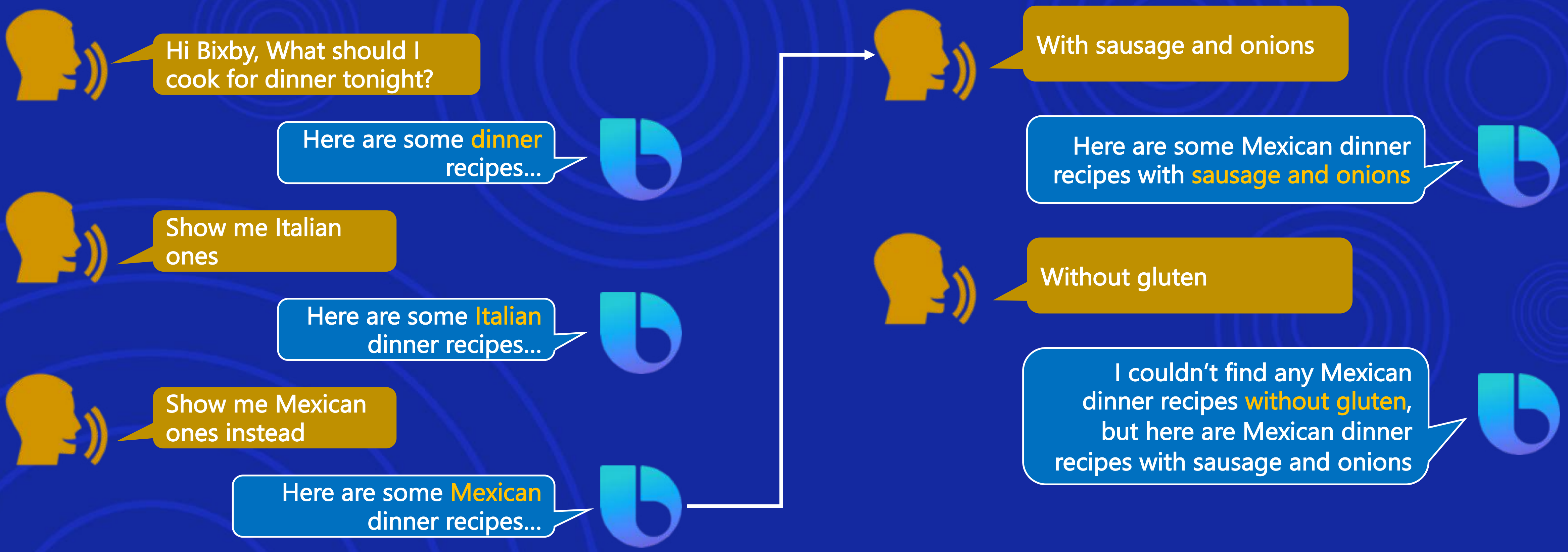


```
render {
  if ($handsFree) {
    selection-of (categories) {
      navigation-mode {
        read-many {
          list-summary {
            if (exists(action.categoryInput)){
              template ("#{title(action.categoryInput)} is not a valid category.")
            } else {
              template ("Welcome to QuizIt! Let's start a quiz.")
            }
          }
```

Simulator



Effects: Continuations & Relaxations



Hi Bixby, What should I cook for dinner tonight?

Here are some dinner recipes…

Show me Italian ones

Here are some Italian dinner recipes…

Show me Mexican ones instead

Here are some Mexican dinner recipes…

With sausage and onions

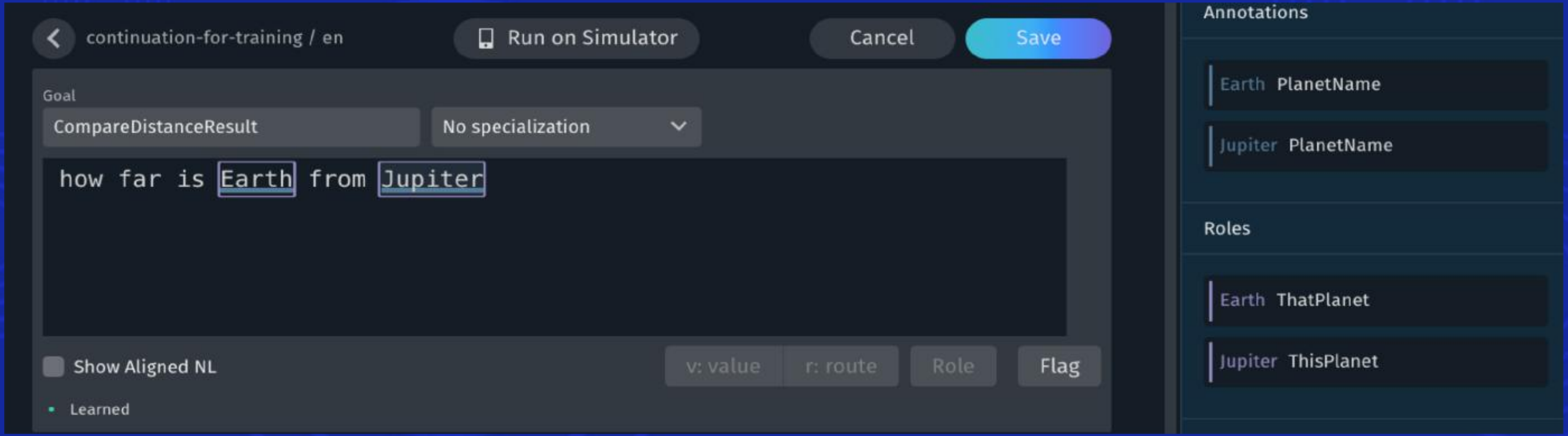
Here are some Mexican dinner recipes with sausage and onions

Without gluten

I couldn't find any Mexican dinner recipes without gluten, but here are Mexican dinner recipes with sausage and onions

Effects: Continuations & Relaxations

Outer Training



continuation-for-training / en

Goal: CompareDistanceResult | No specialization

```
how far is Earth from Jupiter
```

□ Show Aligned NL

• Learned

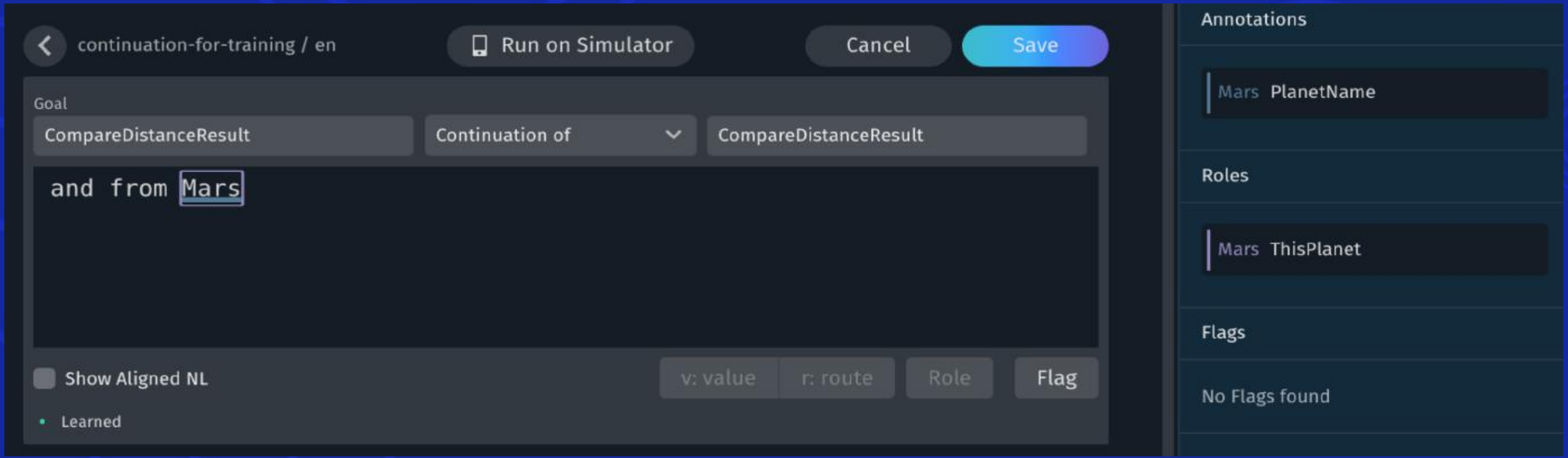
Annotations

- Earth PlanetName
- Jupiter PlanetName

Roles

- Earth ThatPlanet
- Jupiter ThisPlanet

Continuation



continuation-for-training / en

Goal: CompareDistanceResult | Continuation of | CompareDistanceResult

```
and from Mars
```

□ Show Aligned NL

• Learned

Annotations

- Mars PlanetName

Roles

- Mars ThisPlanet

Flags

No Flags found

https://github.com/bixbydevelopers/capsule-samples-collection/tree/master/continuation-for-training

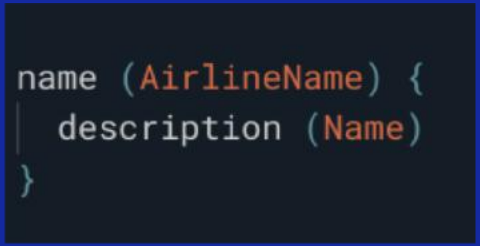
Vocabulary

It’s not just for enums anymore

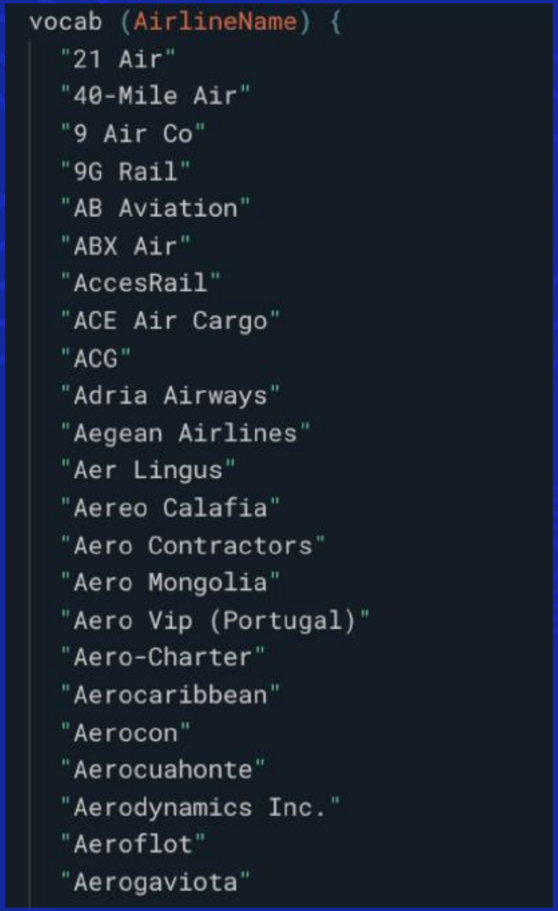
- Vocabulary is required if you use enum (Enumerations) – common use case

BUT . . .

- Vocabulary can also be used for a Name concept helps Bixby’s ASR/NLU match input e.g. it makes your capsule work better.



```
name (AirlineName) {
  description (Name)
}
```

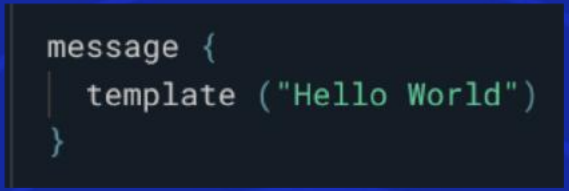


```
vocab (AirlineName) {
  "21 Air"
  "40-Mile Air"
  "9 Air Co"
  "9G Rail"
  "AB Aviation"
  "ABX Air"
  "AccesRail"
  "ACE Air Cargo"
  "ACG"
  "Adria Airways"
  "Aegean Airlines"
  "Aer Lingus"
  "Aereo Calafia"
  "Aero Contractors"
  "Aero Mongolia"
  "Aero Vip (Portugal)"
  "Aero-Charter"
  "Aerocaribbean"
  "Aerocon"
  "Aerocuahonte"
  "Aerodynamics Inc."
  "Aeroflot"
  "Aerogaviota"
```

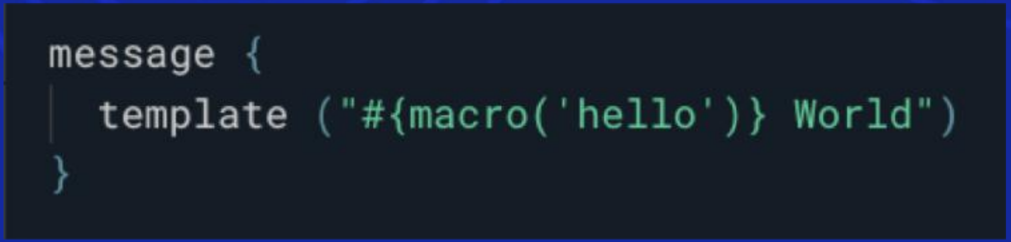
https://bixbydevelopers.com/dev/docs/dev-guide/developers/training.vocabulary

Dialog Macros

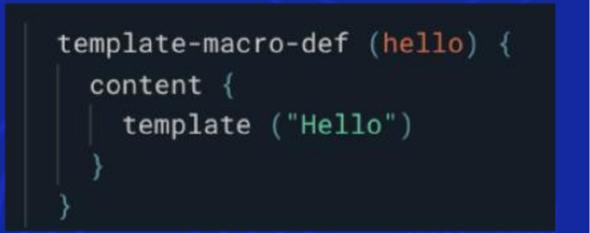
- Reusable “chunks” of dialog. Avoid duplicate dialog and logic
- Can pass parameters and Simple EL (expression based) based logic available



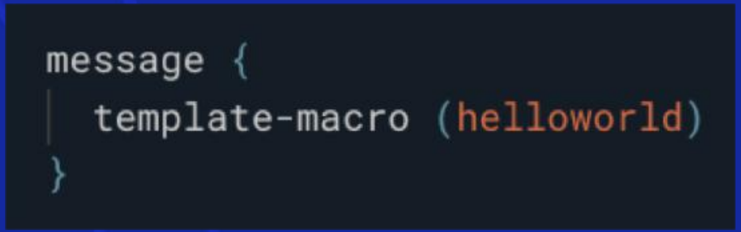
```
message {
  template ("Hello World")
}
```



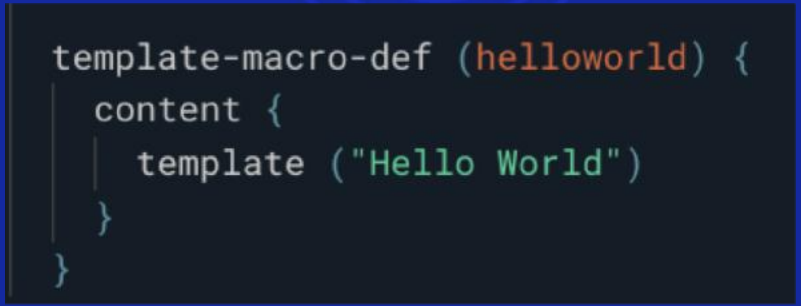
```
message {
  template ("#{macro('hello')} World")
}
```



```
template-macro-def (hello) {
  content {
    template ("Hello")
  }
}
```

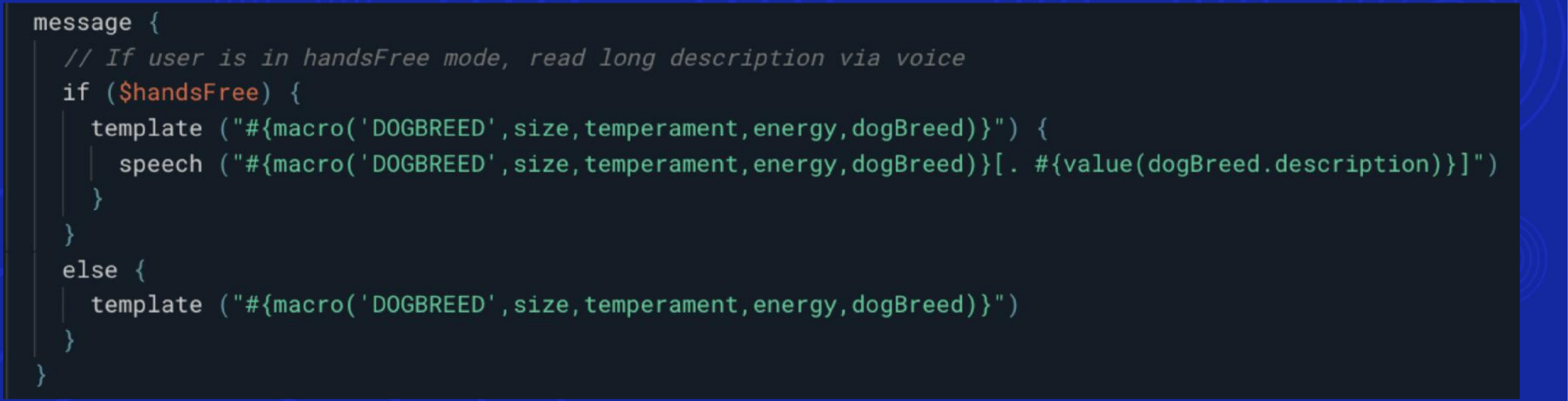


```
message {
  template-macro (helloworld)
}
```



```
template-macro-def (helloworld) {
  content {
    template ("Hello World")
  }
}
```

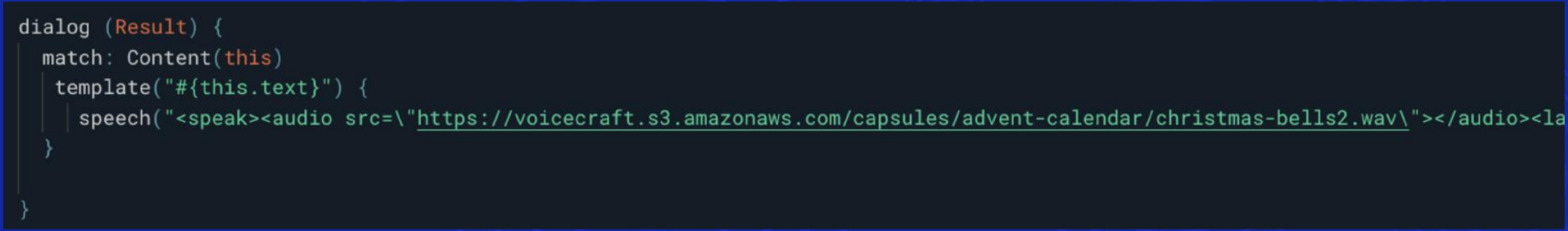
Dialog Macros – Vary Dialog and Speech



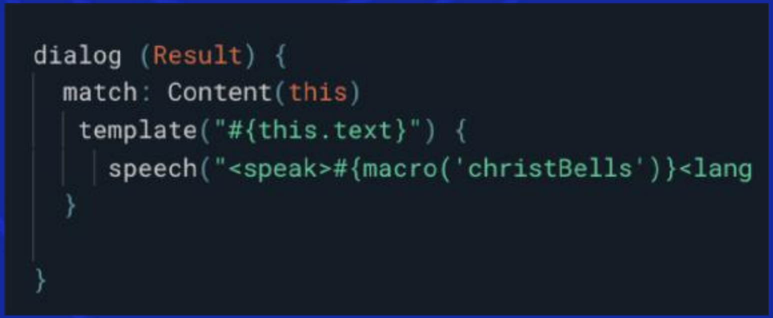
```
message {
  // If user is in handsFree mode, read long description via voice
  if ($handsFree) {
    template ("#{macro('DOGBREED',size,temperament,energy,dogBreed)}") {
      speech ("#{macro('DOGBREED',size,temperament,energy,dogBreed)}[. #{value(dogBreed.description)}]")
    }
  }
  else {
    template ("#{macro('DOGBREED',size,temperament,energy,dogBreed)}")
  }
}
```

https://github.com/bixbydevelopers/capsule-sample-petmatch-port/blob/master/bixby-enhanced/resources/base/views/DogBreed.view.bxb#L9-L20

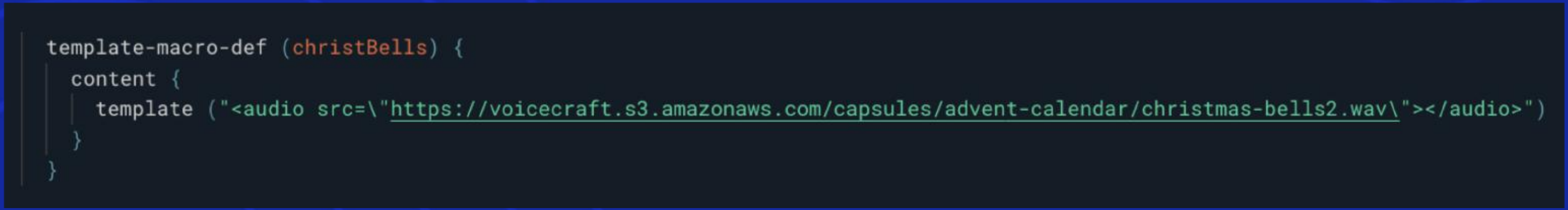
Dialog Macros – SSML



```
dialog (Result) {
  match: Content(this)
   template("#{this.text}") {
     speech("<speak><audio src=\"https://voicecraft.s3.amazonaws.com/capsules/advent-calendar/christmas-bells2.wav\"></audio><la
   }


}
```



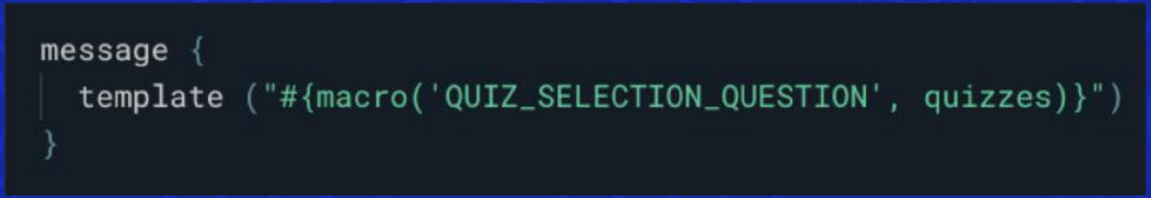
```
dialog (Result) {
  match: Content(this)
   template("#{this.text}") {
     speech("<speak>#{macro('christBells')}<lang
   }


}
```



```
  template-macro-def (christBells) {
    content {
      template ("<audio src=\"https://voicecraft.s3.amazonaws.com/capsules/advent-calendar/christmas-bells2.wav\"></audio>")
    }
  }
```

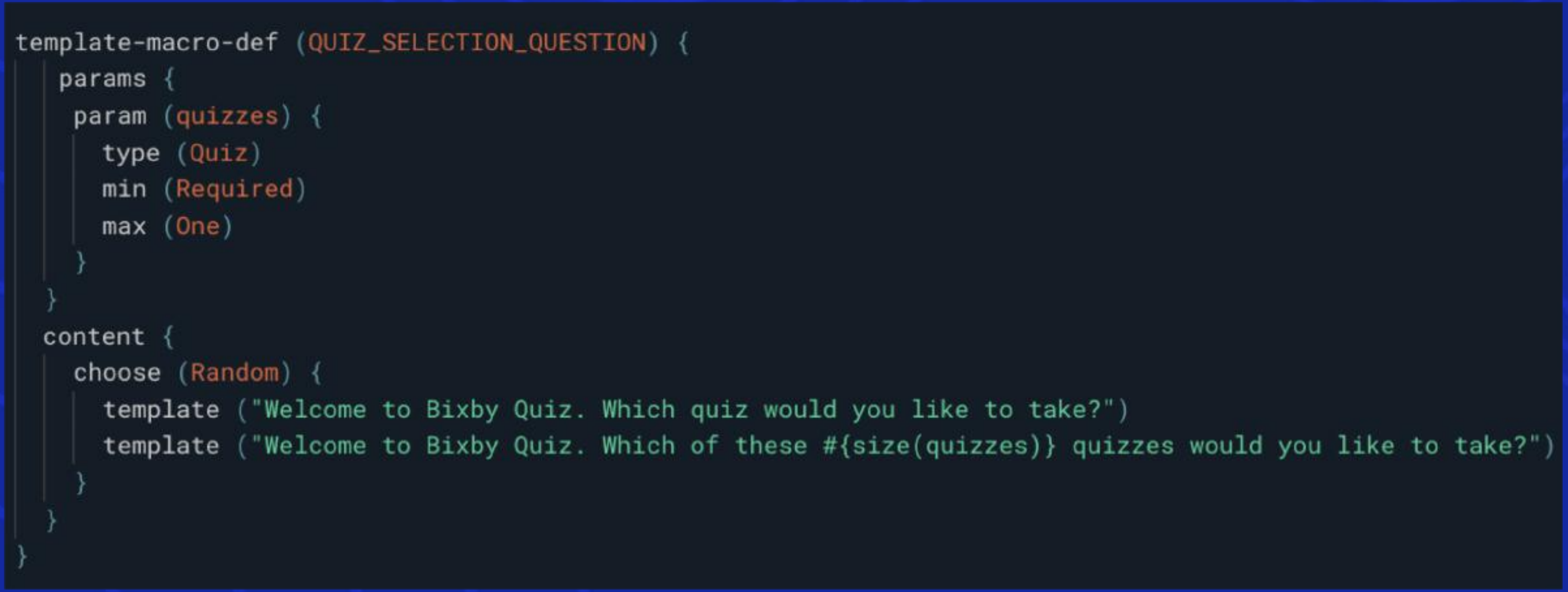
Dialog Macros – Localization

/models/base/views/FindQuiz.dialog.bxb



```
message {
  template ("#{macro('QUIZ_SELECTION_QUESTION', quizzes)}")
}
```

/models/en/dialogs/macros/FindQuiz.dialog.bxb



```
template-macro-def (QUIZ_SELECTION_QUESTION) {
  params {
    param (quizzes) {
      type (Quiz)
      min (Required)
      max (One)
    }
  }
  content {
    choose (Random) {
      template ("Welcome to Bixby Quiz. Which quiz would you like to take?")
      template ("Welcome to Bixby Quiz. Which of these #{size(quizzes)} quizzes would you like to take?")
    }
  }
}
```

https://github.com/bixbydevelopers/capsule-sample-quiz

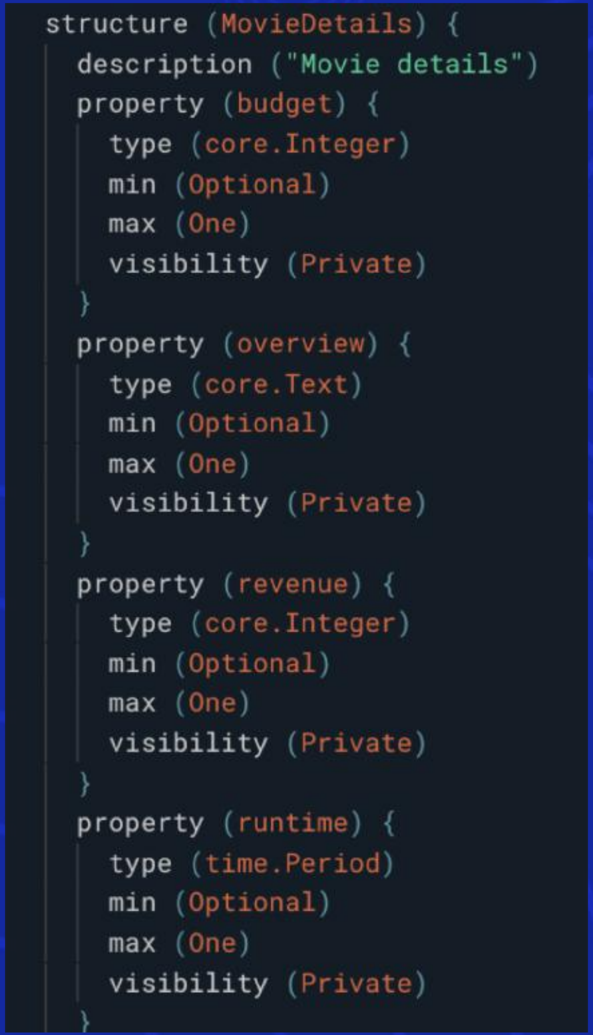
core.zzz instead of Concept

I’m drowning in concepts, help me

Separate primitive concepts are only necessary when the concept is used by the planner e.g. it’s used in NL Training

Otherwise, you can use `private core.primitive` type

core.zzz instead of Concept



```
structure (MovieDetails) {
  description ("Movie details")
  property (budget) {
    type (core.Integer)
    min (Optional)
    max (One)
    visibility (Private)
  }
  property (overview) {
    type (core.Text)
    min (Optional)
    max (One)
    visibility (Private)
  }
  property (revenue) {
    type (core.Integer)
    min (Optional)
    max (One)
    visibility (Private)
  }
  property (runtime) {
    type (time.Period)
    min (Optional)
    max (One)
    visibility (Private)
  }
```

MovieDetails

- Not used in NL training
- Used for output only
- Can use `core.primitive` throughout

https://github.com/bixbydevelopers/capsule-sample-movie-agent

Default Actions and Dispatch Name Patterns

Old School:

- With my game, start game
- Ask my game to start
- Start game using my game
- Talk to my game to start

Default Action way:

- Start my game
- Talk to my game
- Use my game
- Speak to my game

To use: add a `default-action` to capsule.bxb

https://bixbydevelopers.com/dev/docs/reference/ref-topics/meta-commands.en-us

Training Search

- Default is looking for text in utterance = `text: search term`
- `g:search term` = search for goal
- `v:search term` = search for value
- `continuation:search term` = search for continuation
- `role:search term` = search for role

. . .

- `has:[continuation, role, prompt, enabled, disabled . . .]` – Search training with attribute
- `status:[learned, not-learned, not-compiled]` – Search for training status

https://bixbydevelopers.com/dev/docs/dev-guide/developers/training.training-for-nl#search-filters

Bixby Developers Resources

bixbydevelopers.com

github.com/bixbydevelopers

www.youtube.com/c/BixbyDevelopers

PODCAST bixbydev.buzzsprout.com

@BixbyDevelopers

facebook.com/BixbyDevelopers

AMA Time

Roger Kibbe

@rogerkibbe

www.linkedin.com/in/rkibbe

Jonathan Pan

@JohnWithoutTheH

www.linkedin.com/in/jonmpan