aws
INNOVATE
MODERN APPLICATIONS EDITION
27&28 October 2021

Build an offline first cross-platform web and mobile apps with Flutter

Derek Bingham

Senior Developer Advocate
Amazon Web Services

@deekob

aws

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Application acceleration needs...

- One single code base to maintain feature parity
- Device connection state to be abstracted
- Simplified conflict detection and resolution
- Data synched seamlessly across clients
- The painless creation of scaffolding code

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Leaving the developers

Maximum time to work on features

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

What is Flutter?

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

What is Flutter ?

- A cross platform SDK for
  - Android
  - IOS
  - Web
  - Desktop

- First released in 2017
- Uses the ‘Dart’ language
- Widgets are everything

More Info:
www.flutter.dev

aws

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

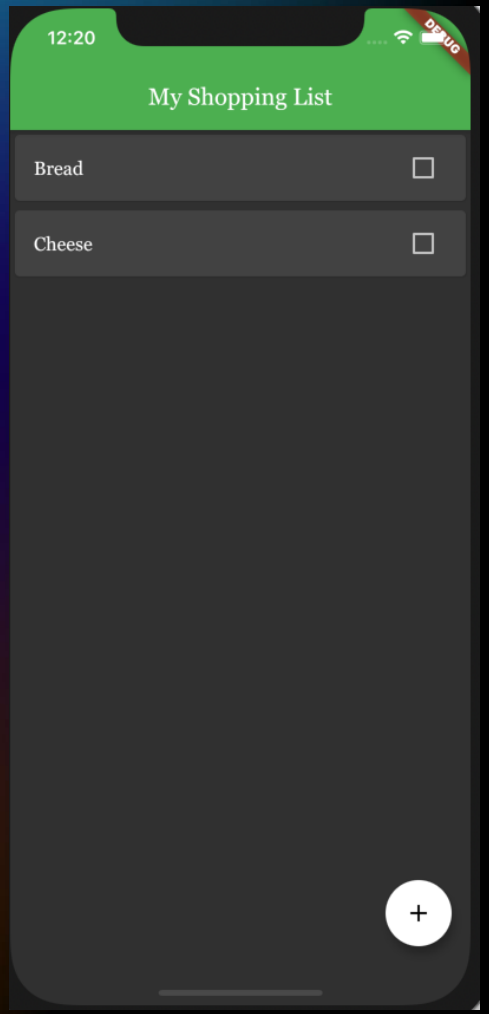
Demo 1 – Flutter, getting started

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

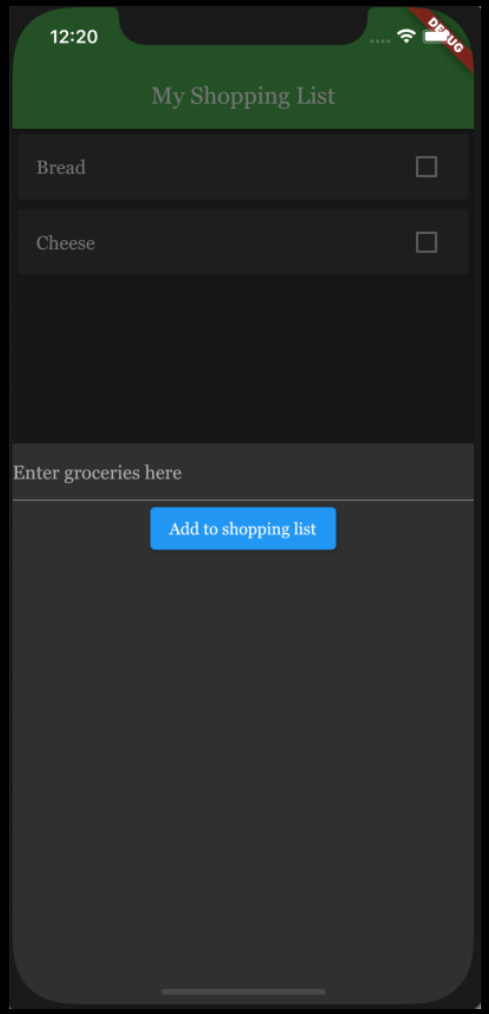
What are we building?

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

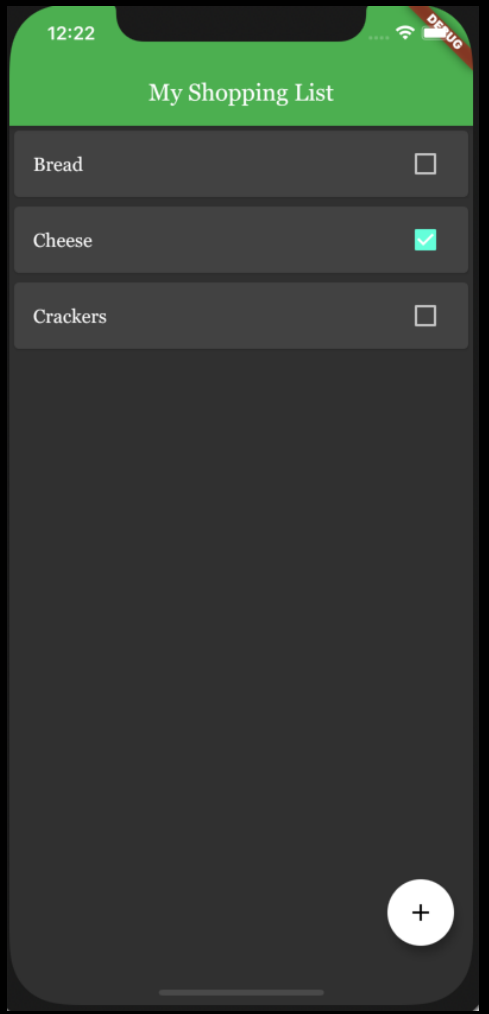
MyShoppingList



DisplayList



AddItems



BuyItems

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Demo 2 – Building the UI

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

What is AWS Amplify?

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Develop with AWS Amplify:
Full-stack developer experience across 10 feature categories

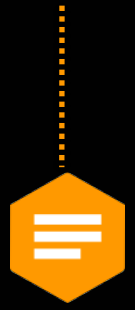
Develop

Configure AWS backends fast

Seamlessly connect frontends

CLI

Admin UI



Libraries & UI Components

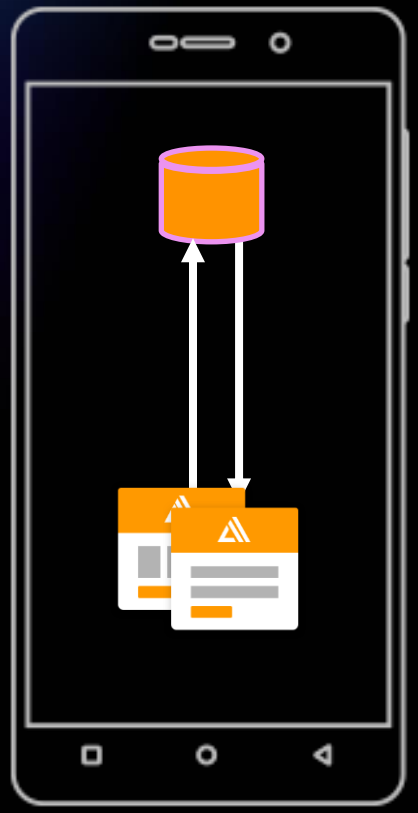
Feature categories

- Authentication
- DataStore
- Storage
- API (GraphQL & REST)
- Functions
- Analytics
- PubSub
- Predictions
- Interactions
- Notifications

Powered by AWS services such as
AWS AppSync (GraphQL API) and Amazon Cognito (Authentication)

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Amplify DataStore: Data flow (disconnected)



- Simple API
- Works on local datastore (SQLite)
- No backend connection needed

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Demo 3 – Offline persistence

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

The BLoC pattern

```dart
ElevatedButton(
            onPressed: () {
              BlocProvider.of<ShoppingListItemCubit>(context)
                  .createListItems(_itemNameController.text);
```

```dart
void createListItems(String itemName) async {
    await _shoppingListRepo.createListItems(itemName);
  }
```

```dart
Future<void> createListItems(String itemName) async {
    final item = ShoppingListItem(itemName: itemName, isComplete: false);
    try {
      await Amplify.DataStore.save(item);
    } catch (e) {
      throw e;
    }
  }
```

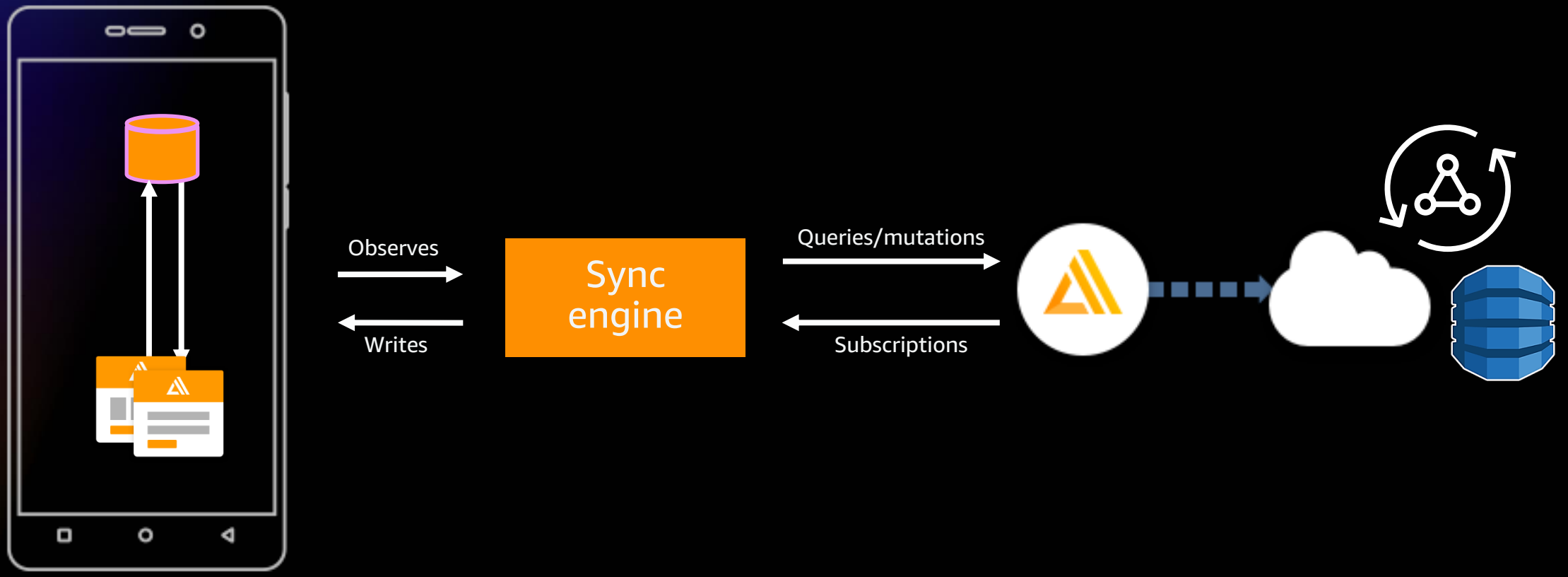
UI

BLoC

Repository

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Amplify DataStore: Data flow (connected)



© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Demo 4 – Creating the backend

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Application acceleration

- A single code base
- Connection state was abstracted from me
- Didn’t need to worry about glue code
- Data was synchronised between devices
- Concentrated on value add features

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Go build!

https://github.com/deekob/amplify_flutter_shoppinglist

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Visit the Modern Applications Resource Hub for more resources

Dive deeper with these resources to help you develop an effective plan for your modernization journey.

- Build modern applications on AWS e-book
- Build mobile and web apps faster e-book
- Modernize today with containers on AWS e-book
- Adopting a modern Dev+Ops model e-book
- Modern apps need modern ops e-book
- Determining the total cost of ownership: Comparing Serverless and Server-based technologies paper
- Continuous learning, continuous modernization e-book
- … and more!

https://bit.ly/3yfOvbK

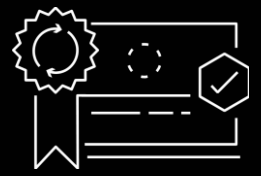
Visit resource hub »

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

AWS Training and Certification

Accelerate modernization with continuous learning

Free digital courses, including:
Architecting serverless solutions
Getting started with DevOps on AWS



Earn an industry-recognized credential:
AWS Certified Developer – Associate
AWS Certified DevOps – Professional

Hands-on classroom training (available virtually) including:
Running containers on Amazon Elastic Kubernetes Service (Amazon EKS)
Advanced developing on AWS

Create a self-paced learning roadmap
AWS ramp-up guide - Developer
AWS ramp-up guide - DevOps

Take Developer and DevOps training today

Learn more about Modernization training for you and your team

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Thank you for attending AWS Innovate Modern Applications Edition

We hope you found it interesting! A kind reminder to **complete the survey.**
Let us know what you thought of today's event and how we can improve the event experience for you in the future.

aws-apj-marketing@amazon.com

twitter.com/AWSCloud

facebook.com/AmazonWebServices

youtube.com/user/AmazonWebServices

slideshare.net/AmazonWebServices

twitch.tv/aws

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Thank you!

Derek Bingham

Senior Developer Advocate

Amazon Web Services

@deekob

© 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.