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Introduction to
Mobile Development

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Different Types of Mobile Applications - Native, Hybrid and Web Apps

Native App

Hybrid App

Web App

What are Web Apps?

1-Built using HTML/CSS/JavaScript
2-Runs inside a browser
3-Built like a regular website or web app
4-Designed to look good on mobile devices

Advantages

1-Easy to built
2-Easy to maintain
3-Use any technology/language
4-Cheaper than native and hybrid apps
5-Single app for all phones

Disadvantages

1-Need to run in a browser
2-Slower than Native app
3-Less interactive
4-NO icon on desktop
5-Cannot be submitted to app store
6-Cannot interact with device utilities

What are Native Apps?

1-Most common type of mobile app
2-Built for specific platforms
3-Built using native programming languages

Advantages

1-Very fast
2-Built to run on specific platform
3-Distributed in app stores
4-Interact with device utilities

Disadvantages

1-Single Platform
2-Very expensive

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What is Android Development?

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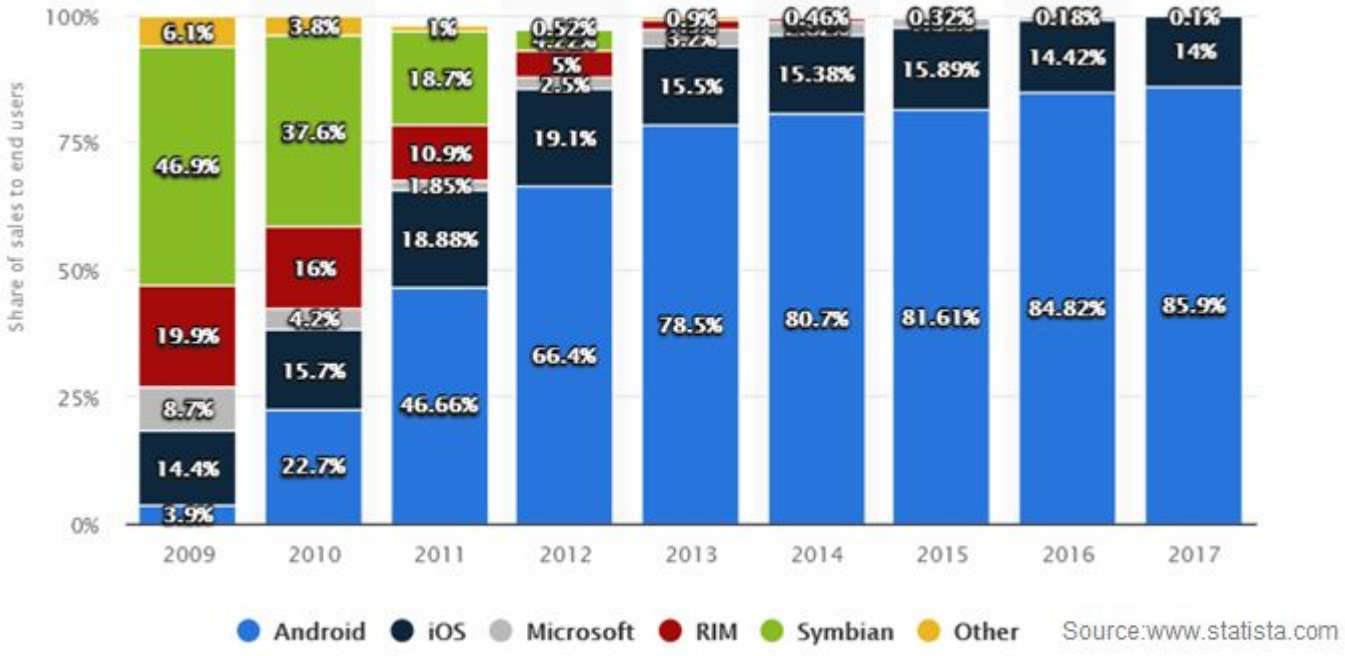
Why Android Development ?



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Where to start Android Development?

Which is Better?

```java
public final class User {
  private final String firstName;
  private final String lastName;
  private final int age;

  public User(String firstName, String lastName, int age) {
    this.firstName = firstName;
    this.lastName = lastName;
    this.age = age;
  }

  public String getFirstName() {
    return firstName;
  }

  public String getLastName() {
    return lastName;
  }

  public int getAge() {
    return age;
  }

  @Override public boolean equals(Object o) {
    if (this == o) return true;
    if (o == null || getClass() != o.getClass()) return false;
    User user = (User) o;
    return age == user.age
        && Objects.equals(firstName, user.firstName)
        && Objects.equals(lastName, user.lastName);
  }

  @Override public int hashCode() {
    return Objects.hash(firstName, lastName, age);
  }

  @Override public String toString() {
    return "User{"
        + "firstName='"
        + firstName
        + '\''
        + ", lastName='"
        + lastName
        + '\''
        + ", age="
        + age
        + '}';
  }
}
```



```kotlin
data class User(
    val firstName: String,
    val lastName: String,
    val age: Int
)
```

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Dart

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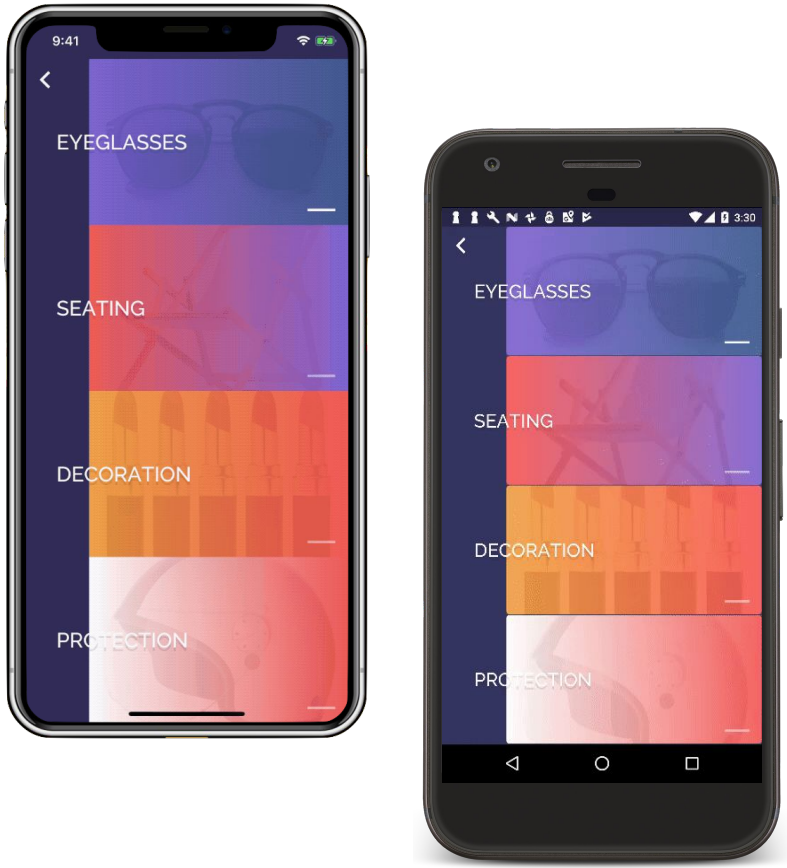
Flutter is Google's portable UI toolkit for building beautiful, native apps from a single codebase .



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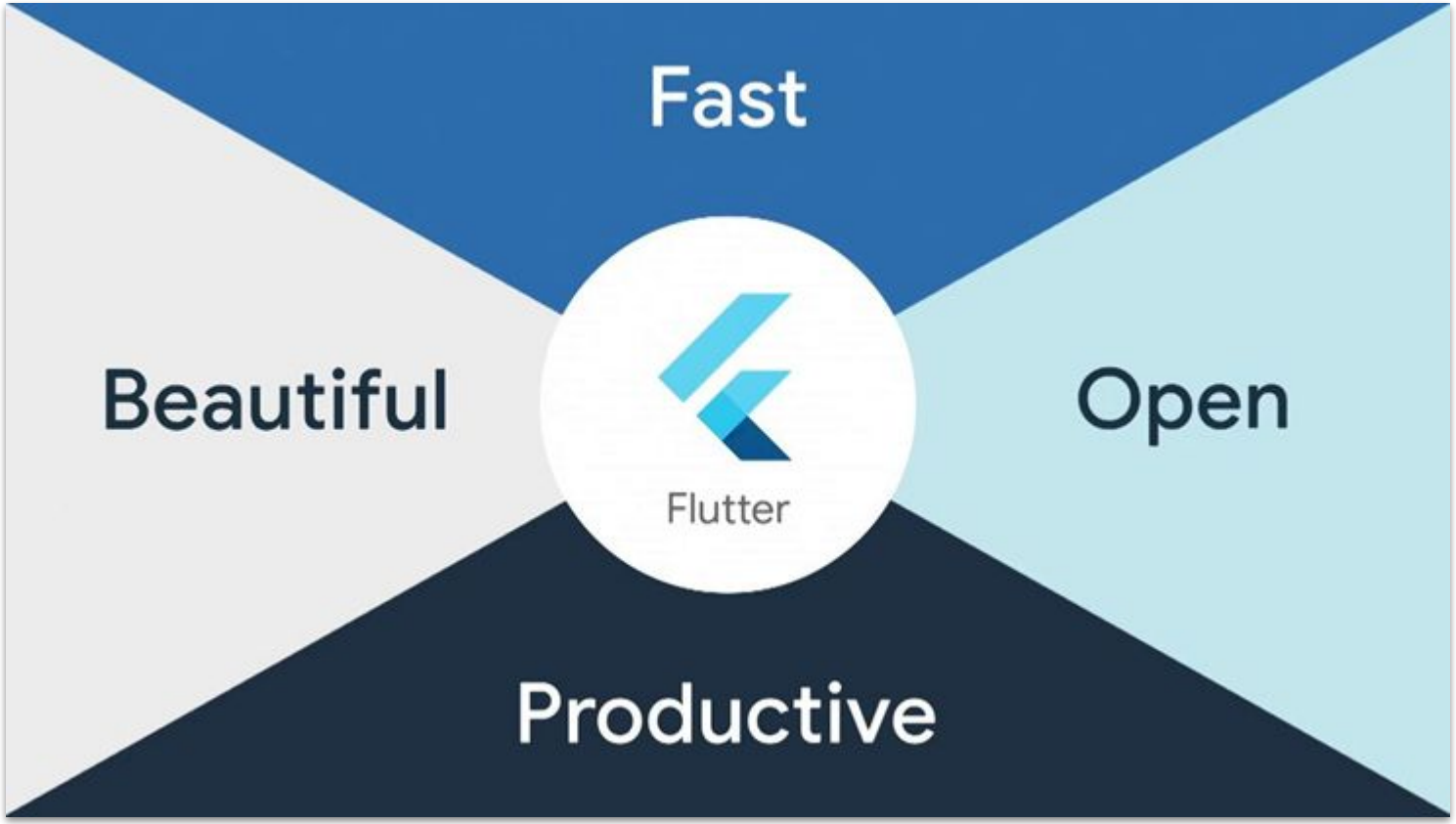

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Beautiful

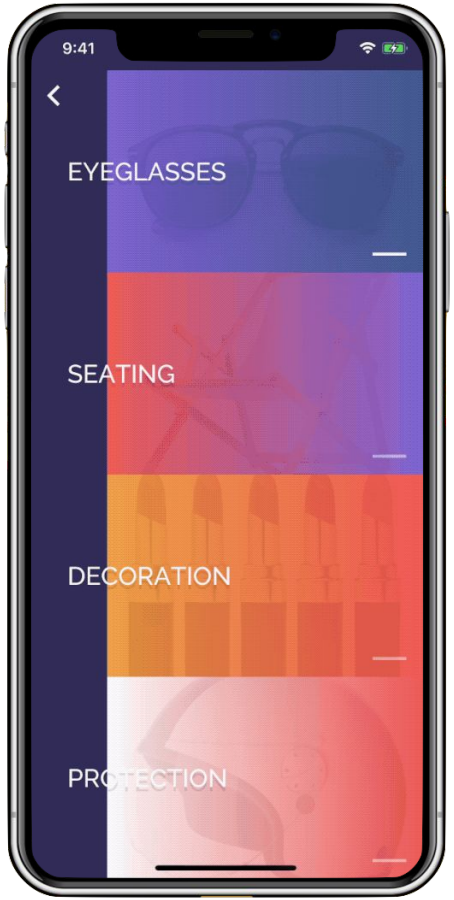
Control every pixel on the screen

Make your brand come to life

Never say "no" to your designer

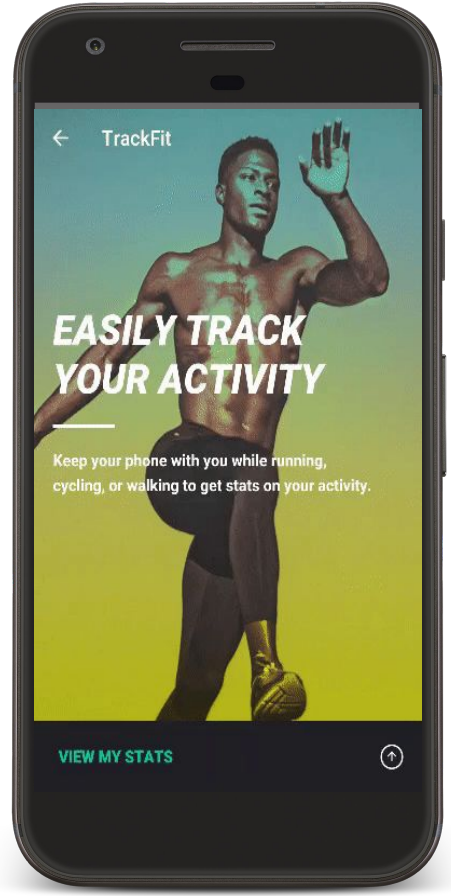
Stand out in the marketplace

Win awards with beautiful UI



Fast

Flutter seamlessly combines user interface widgets with 60fps animated graphics generated in real time, with the same code running on iOS and Android



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Productive

Sub-second reload times

Paint your app to life

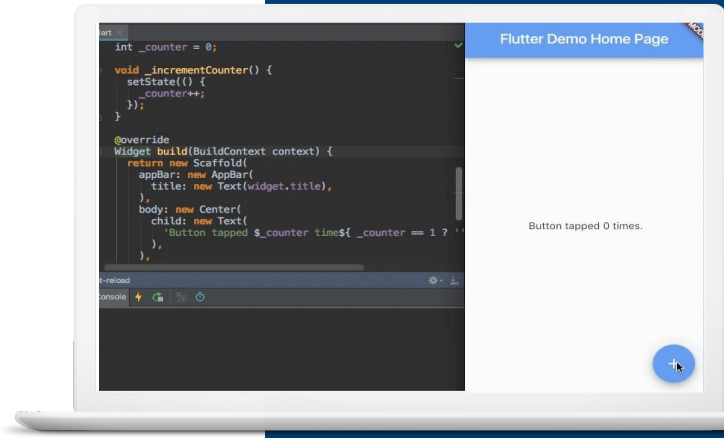
Iterate rapidly on features

Test hypotheses quicker than ever

More time to experiment & test features

Single-codebase for faster collab

3X Productivity Gains



What makes Flutter unique?

No markup language (only Dart)

Who use Dart?

Google AdWords

Adobe

Google internal CRM

Google Fuchsia

Google Fiber

Google internal sales tool

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Works with popular tools and platforms

Android Studio

Xcode

VS Code

Firebase

3rd-party Android SDKs

Android APIs

iOS APIs

Material Design

Redux

3rd-party iOS SDKs

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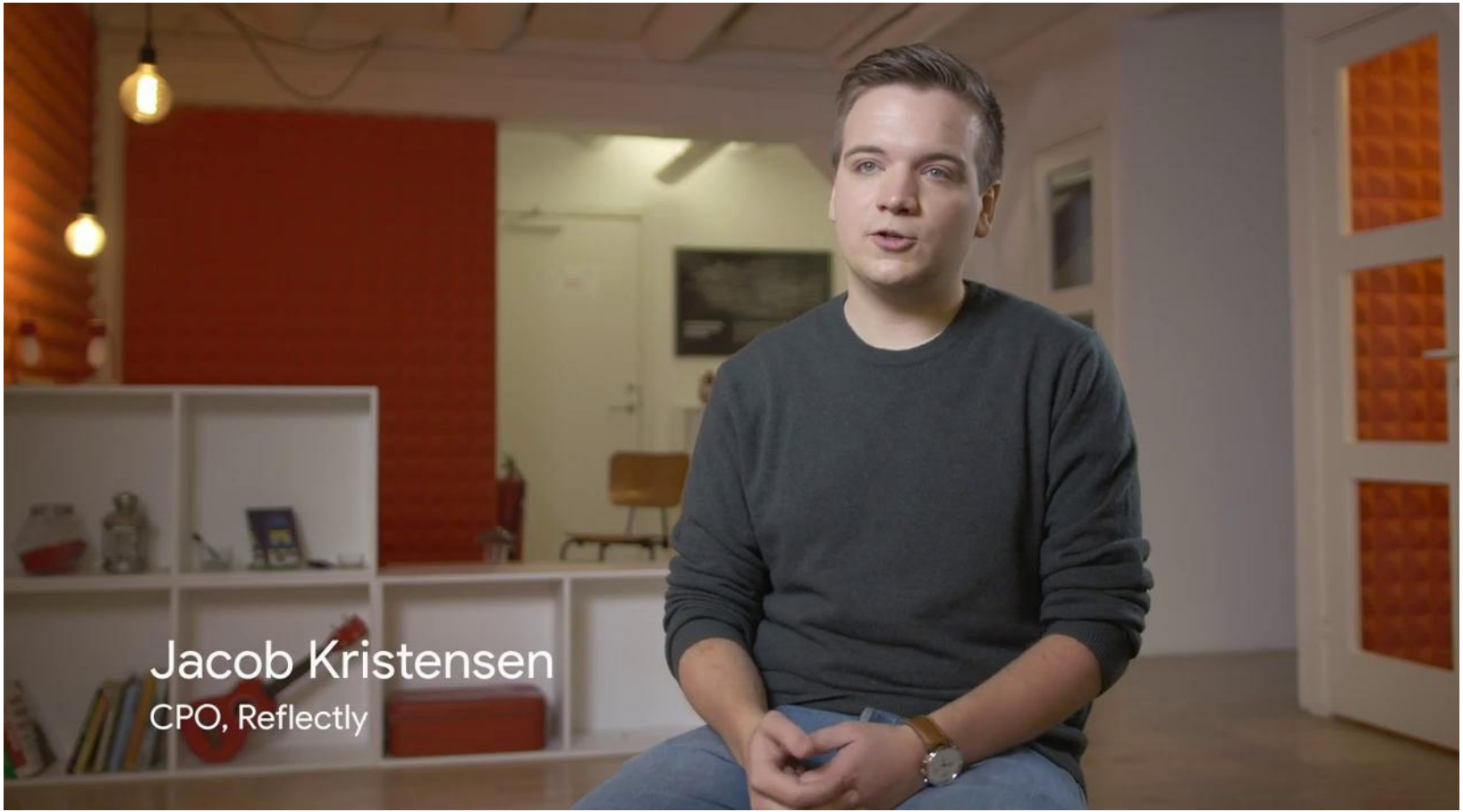

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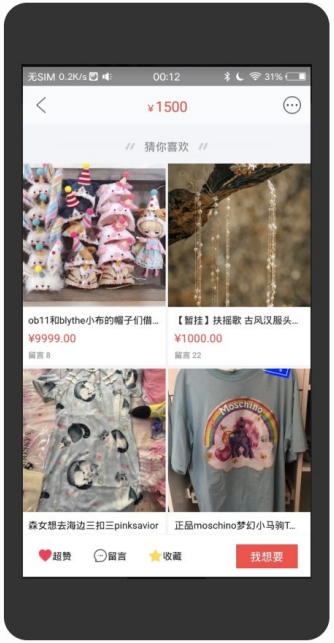
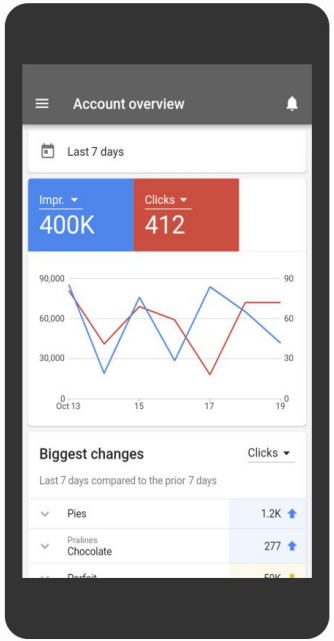
Flutter Showcase

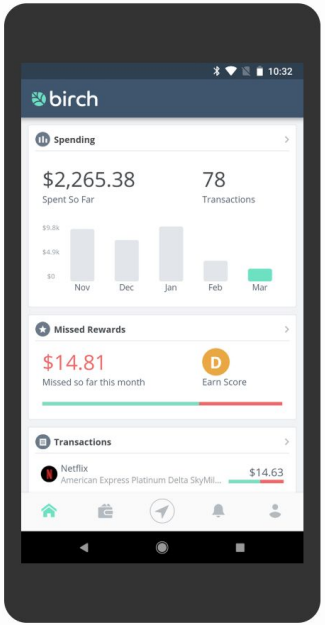
Alibaba



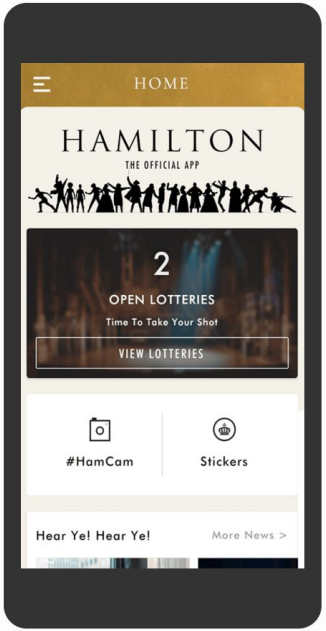
Google AdWords



Birch Finance



Hamilton Music



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Thank you

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