

Group 1  
Second Pitch  
27/11/2023

Real-life  
use case  
illustrated  
by DALL-E





**Baby Guardian**

A collection of fresh blueberries is scattered across the white background, arranged in a loose circular pattern that frames the central text. The berries are vibrant blue with some natural white bloom and small dark spots at the stem. 

# **Baby Guardian**

— Smart IoT Bassinet



The background of the entire slide is decorated with numerous blueberries of varying sizes and focus. Some are sharp and in the foreground, while others are blurred in the background, creating a sense of depth. The blueberries are scattered across the white background, framing the central text.

# **Introducing Baby Guardian**

**Integrating GPT4 contextual understanding and physical sensors for stress, emotion, temperature, air quality, diaper wetness, breath rate and heart rate monitoring to ensure baby's comfort and health, all connected in a comprehensive parents companion app.**

The background of the slide is a white surface with several blueberries scattered across it. Some blueberries are in sharp focus, while others are blurred, creating a sense of depth. The blueberries are a deep blue color with a slight white bloom on their surface.

# Smart Features and relevant sensors

Diaper Wetness Detection -----

Non-Invasive Health Monitoring,

Emotion and Cry Reason Classification -----

Environment Monitoring -----

Cradle to Aid Sleep -----

Adaptive Noise and Lullaby to Aid Sleep -----

Companion App for Parental Health Monitoring ---

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Adaptive Noise and Lullaby to Aid Sleep -----  
Companion App for Parental Health Monitoring ---

Camera  
Mic  
Thermopile Sensor  
CO2 sensor  
Humidity sensor



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Camera  
Mic  
Thermopile Sensor  
CO2 sensor  
Humidity sensor  
Electrical Motors  
Speaker

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Camera

Mic

Thermopile Sensor

CO2 sensor

Humidity sensor

Electrical Motors

Speaker

Via Bluetooth




The background of the slide is a white surface with several blueberries scattered across it. Some blueberries are in sharp focus, while others are blurred, creating a sense of depth. The blueberries are a vibrant blue color with a small white stem at the top.

# **Project Goals Alignment with SDGs**

## **Relevant SDGs:**

- **Target 3.2: End preventable deaths of newborns and children under 5 years**
- **Target 3.4: Reduce premature mortality and promote mental health**
- **Target 3.9: Reduce deaths/illnesses from hazardous chemicals and pollution**

The background of the slide is white and decorated with several blueberries. Some blueberries are in sharp focus, while others are blurred, creating a sense of depth. They are scattered across the slide, with a higher concentration around the title and bottom right.

# **Project Goals and Alignment with SDGs**

## **Core Contributions:**

- **Breath Rate, Cry Detection, Temperature Monitoring (Target 3.2)**
- **Stress Index, Heart Rate Monitoring (Target 3.4)**
- **Air Quality, Humidity Monitoring (Target 3.9)**



# **Team Organisation**

- **Outlook Groups to set goals, schedule and assign individual tasks**
- **Weekly Teams meeting for progress control**
- **Current tasks allocation :**
  - 1. Weicheng – App development**
  - 2. Ian and Esther – Vision and Audio classification**
  - 3. Kei and John – Hardware design and equipment ordering**



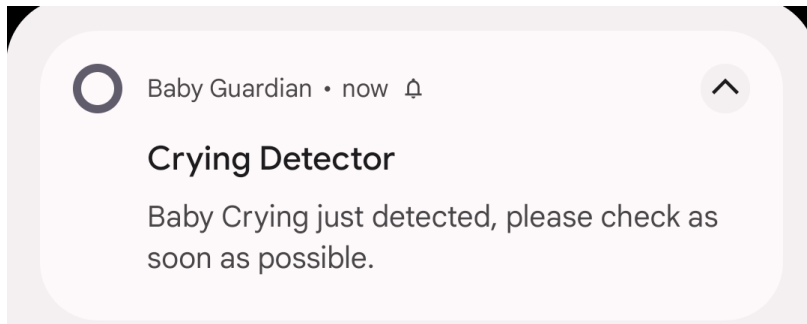
# Mobile App (Android) 1/4

We have adopted **Jetpack Compose** for building our Android user interface.

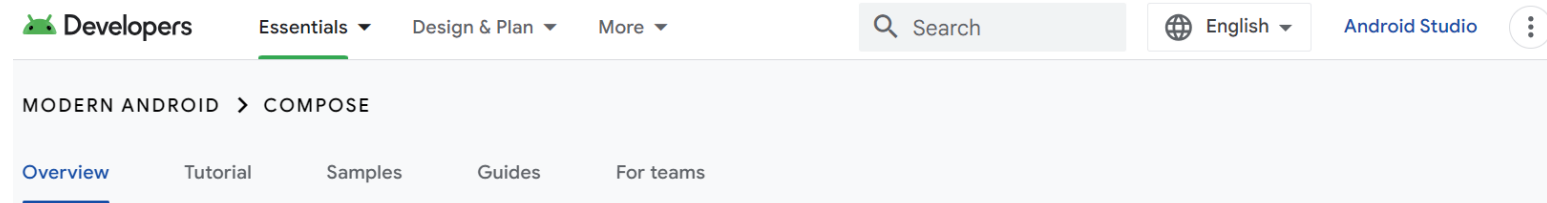
Compose is a modern, fully declarative UI toolkit for building native Android applications.

We choose Android first as there are more Android devices than IOS devices.

## Notifications

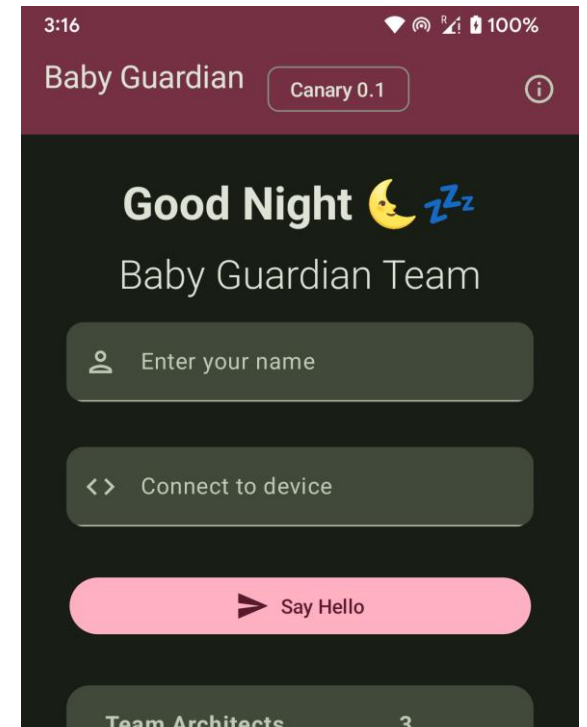
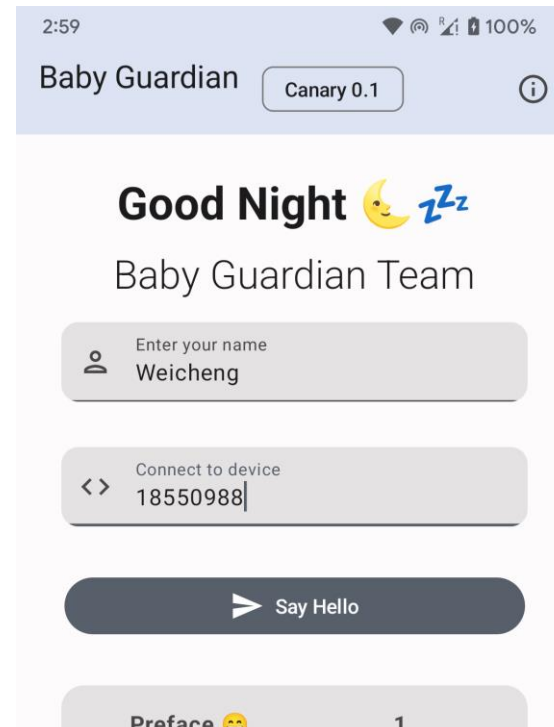


Light OR **Dark** Mode?  
No! Easy Choice:  
Light **AND** **Dark** Mode.



## Build better apps faster with Jetpack Compose

Jetpack Compose is Android's recommended modern toolkit for building native UI. It simplifies and accelerates UI development on Android. Quickly bring your app to life with less code, powerful tools, and intuitive Kotlin APIs.



# Mobile App (Android) 2/4

Thinking in  
Material Design Language  
Way.

Building Beautiful Apps  
Without a glimpse.

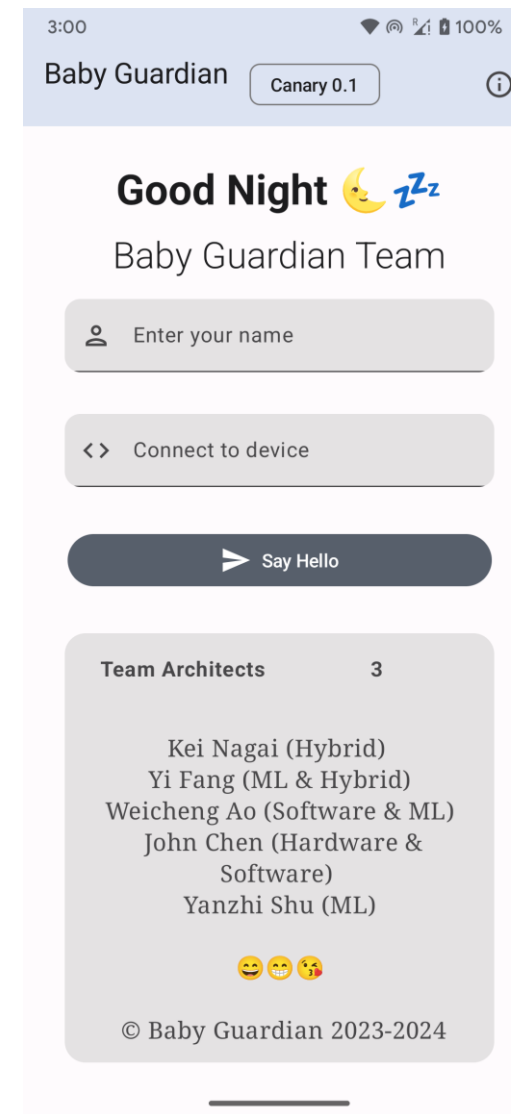
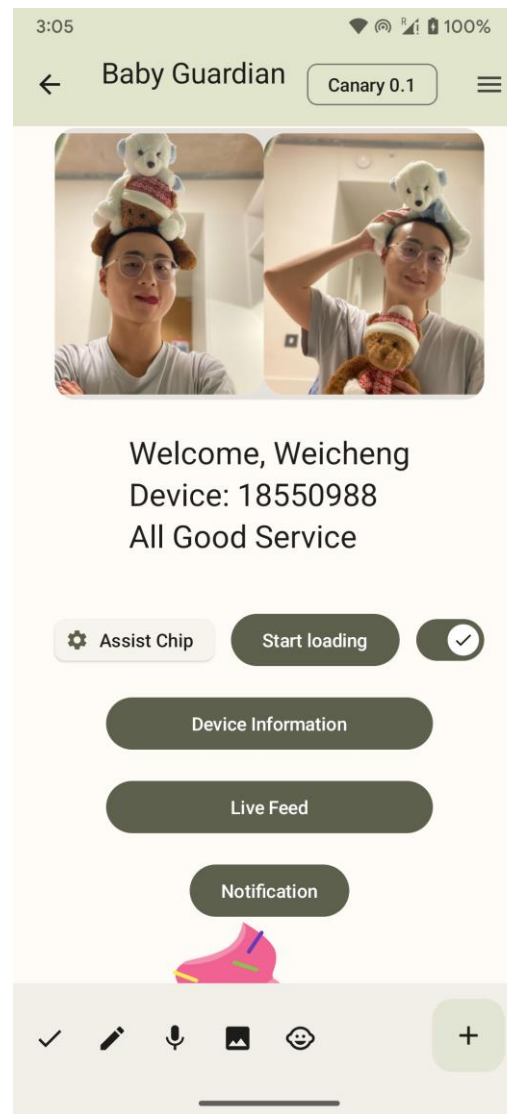
Truly Material You here.  
Best Practices, a Positive Way.

App info



Baby Guardian

team.baby.guardian



## Material Design

Material 3 is the latest version of Google's open-source design system. Design and build beautiful, usable products with Material 3.

Android

manifests

AndroidManifest.xml

java

team.baby.guardian

data

DataSource

OrderUiState

ui

components

CommonUi.kt

theme

Color.kt

Theme.kt

Type.kt

utils

LoginScreen.kt

OrderViewModel

SelectOptionScreen.k

StartOrderScreen.kt

SummaryScreen.kt

BabyScreen.kt

MainActivity

NewAppWidget.kt

Resource Manager

Project

Commit

Full Requests

Bookmarks

Build Variants

Structure

File Edit View Navigate Code Refactor Build Run Tools Git Window Help

Baby Guardian - LoginScreen.kt [Baby\_Guardian.app.main]

C:\Users\weicheng\Desktop>Baby-Guardian

anydp\ic\_launcher.xml ic\_launcher\_foreground.xml AndroidManifest.xml MainActivity.kt LoginScreen.kt

Code Split Design

Running Devices: Pixel 7 Pro API UpsideDownCakePriva...

Up-to-date

https://github.com/Yenchk/Baby-Guardian/tree/android

Weicheng783 Add architecture components and a lot stuff 55227f5 51 minutes ago 5 comm

.idea Start Android UI development yesterday

android Add architecture components and a lot stuff 51 minutes ago

README.md Start Android UI development yesterday

README.md

Baby-Guardian

Baby Bassinet Project for COMP183

Kei Nagai; Yi Fang; Weicheng Ao; John Chen; Yanzhi Shu.

Software (Android): Implementation Part

This section covers the Android implementation details for the "Baby-Guardian" project. We are utilizing Jetpack Compose along with the latest best practices in Android development.

LoginScreenPreview

Good Night 🌙💤

Baby Guardian Team

Enter your name

Connect to device

Say Hello

Preface 🥰 1

"Elevating baby care with the seamless embrace of modern technology through a smart baby bassinet underscores the paramount importance of nurturing our little ones in the digital age."

Swipe Left for more

Baby Guardian Canary 0.1

Good Night 🌙💤

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Enter your name

Connect to device

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Swipe Left for more

Git Log Console

HEAD (Current Branch)

Local

android

main

Remote

origin

android

Add architecture components and a lot stuff origin & android Weicheng Ao 50 minutes ago

Add navigation and refine architecture Weicheng Ao Yesterday 16:33

Pack a signed APK for testing Weicheng Ao Yesterday 1:50

Start Android UI development Weicheng Ao Yesterday 1:35

Initial commit origin & main Yenchk\* 2023/10/30 13:40

Start Android UI development

In this commit, codebase for Android App is initialised, main screen for authentication is drafted, but the code

Git Run Profiler Logcat App Quality Insights Build TODO Problems Terminal Services App Inspection

Layout Inspector

Install successfully finished in 471 ms. (moments ago)

236:16 LF UTF-8 4 spaces android



# Mobile App (Android) 4/4

We write code into reusable, manageable code snippets with comments, clear commit messages.

Also following industrial practices of writing documentation & tests.

## Commit

### Start Android UI development

In this commit, codebase for Android App is initialised, main screen for authentication is drafted, but the code needs to be more refactored. The understanding of passing global variables in Composable is required more.

android

Weicheng783 committed yesterday

Showing 51 changed files with 1,427 additions and 1 deletion.

```

@OptIn(ExperimentalMaterial3Api::class)
@Composable
fun GenericTextField(name: String, icon: ImageVector, t
    TextField(
        value = name,
        onValueChange = { onChange(it) },
        modifier = Modifier
            .fillMaxWidth()
            .background(MaterialTheme.
            .padding(16.dp)
            .clip(MaterialTheme.shapes

```

README.md

### Software (Android): Getting Started

To run the Android part of the "Baby-Guardian" project

- 1. Clone the repository:

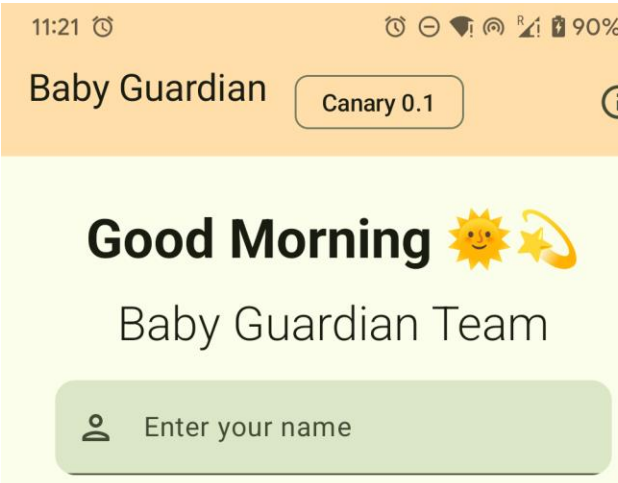
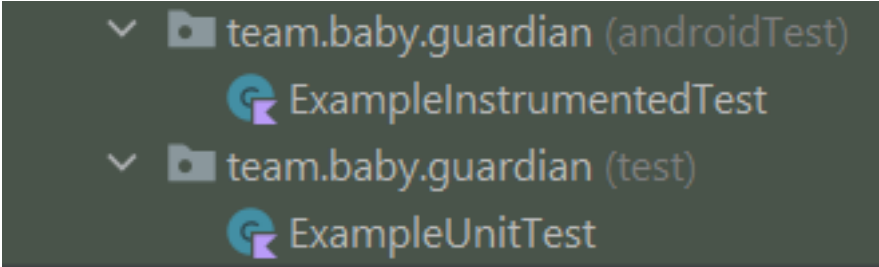
```
git clone git@github.com:Yenchk/Baby-Guardian.
git checkout android
```

- 2. Open the project in Android Studio.
- 3. Build and run the project using the latest version of

```

if (!isButtonClicked) {
    GenericTextField(name = name, icon = Icons.
        keyboardType = KeyboardType.Text,
        imeAction = ImeAction.Next
    ),)
    GenericTextField(name = deviceCode, icon =
        keyboardType = KeyboardType.Number,
        imeAction = ImeAction.Send
    ),)
}

```







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