ChildConnect

SC2006 SCEZ Group 4
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The Rise of iPad Kids

Yes, it is alarming

Alivia Banerjee · Follow
Published in Modern Women · 3 min read · Mar 11, 2024

The Guardian   Int

Sport   Culture   Lifestyle

Health & fitness   Home & garden   Women   Men   Family   Travel   Money

This article is more than 1 year old

Kids are on their phones more than ever. We asked parents what they're doing about it

Most viewed

Live FTSE 100 plunges to one-year low amid market turmoil, as Goldman Sachs raises chances of US
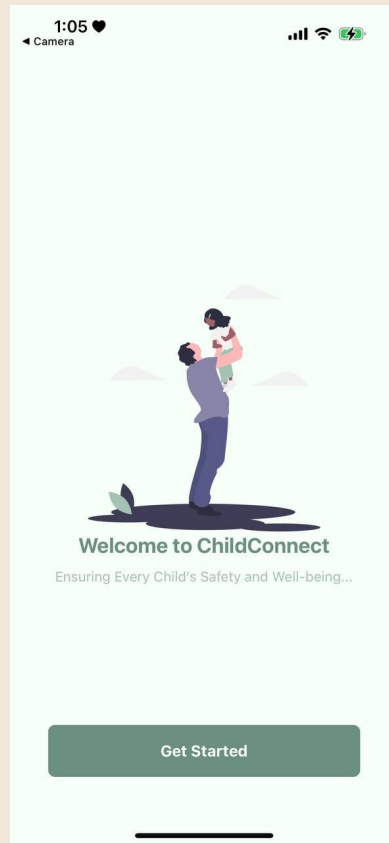
Main Issues

Growing Disconnect in Children

Safety concerns due to lack of real-time updates

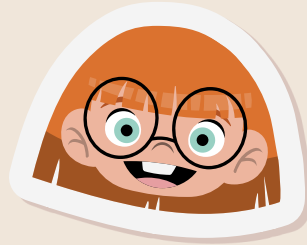Lack of **awareness** about a child's school activities

ChildConnect

Welcome to ChildConnect

Ensuring Every Child's Safety and Well-being...

Get Started

Welcome Back!

Announcements

School Sports Day on 11 April
Class: 1A
Teacher: Sivaguruanathan Keerthivasan
For: Edwin Tan
Anderson Primary Schools annual sports day will be held on 11 April
Be sure to come to school in PE attire at 11am

Reminder for Isaac to wear shoes tomorrow
Class: 1A
Teacher: Sivaguruanathan Keerthivasan
For: Edwin Tan
he might come in slippers

Home | Children | Chats | Profile

ChildConnect

1

Strengthens teacher-parent connection

2

Assist teachers to share updates, track safety and keep parents informed

3

Allows parents to feel close and aware of their child's well-being

Feature List

Administrative Features

- Login System
- Registration System
- Forget Password System
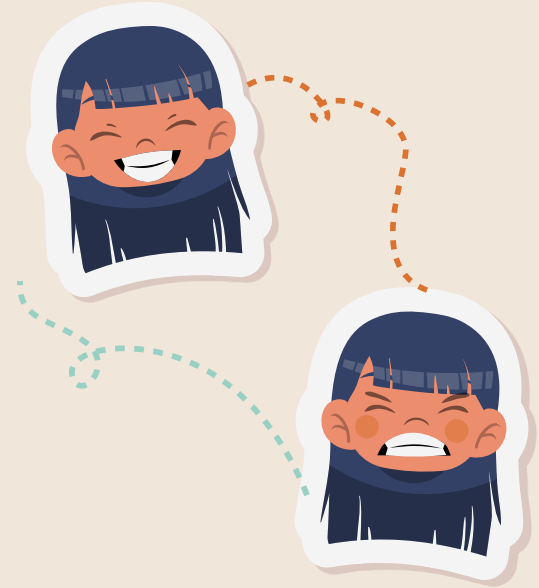
Class Management Features

- Class list
- Attendance taking (w/o photo)
- Documentation transfer
- Homework assignment
- Announcements
- Grades

Chat Features

- Unread chat system
- Chat translation
- Text to Audio
- Audio to Chat
- Photo transfer

Parental Features

- Child mode
- Child tracking
- School information

Live Demo!

Showcasing ChildConnect...

Key APIs
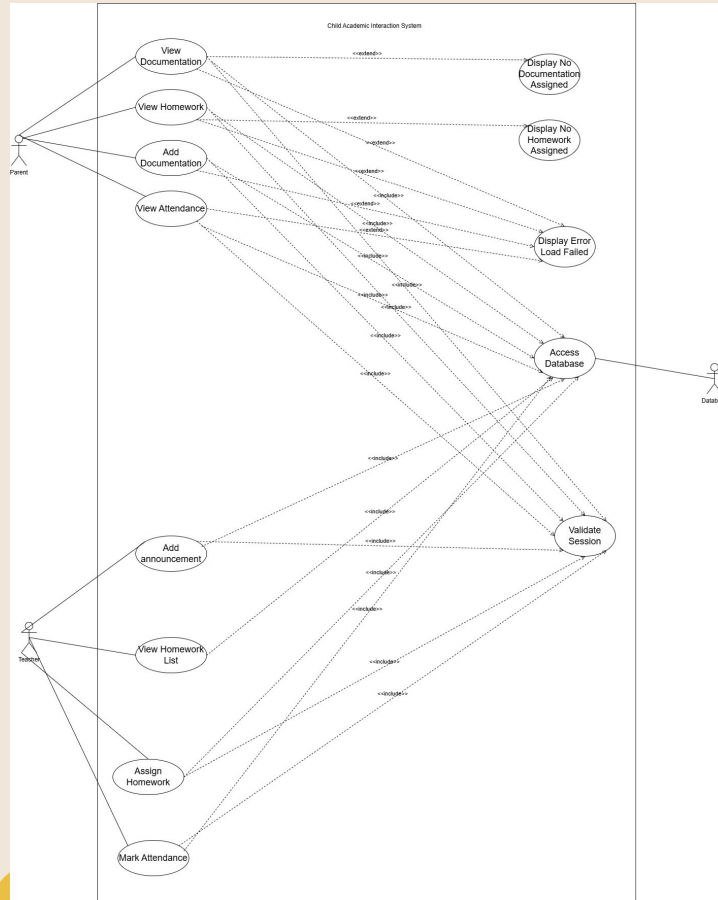
1 Singapore Schools API

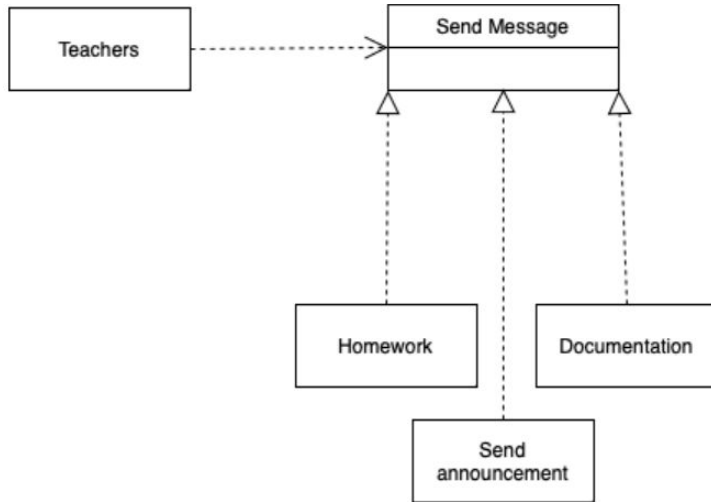**2** Cloudinary API

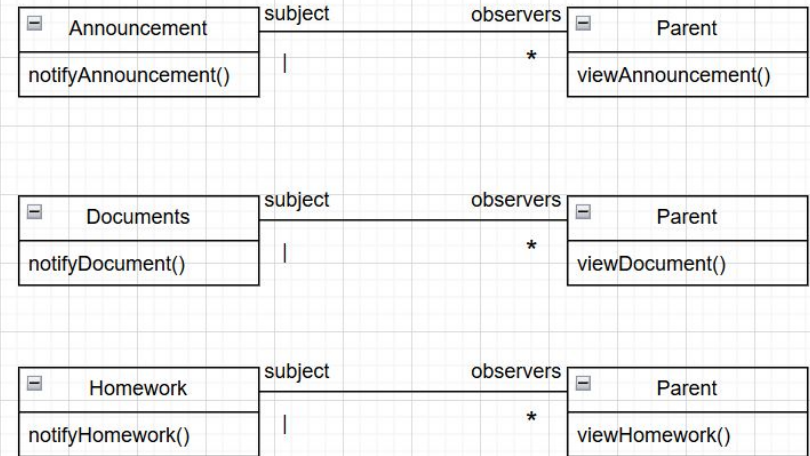**3** Firebase API

4 Google Cloud APIs

Use Case Diagram

Child Academic Interaction System

Parent

- View Documentation
- View Homework
- Add Documentation
- View Attendance

Teacher

- Add announcement
- View Homework List
- Assign Homework
- Mark Attendance

Database

- Display No Documentation Assigned
- Display No Homework Assigned
- Display Error Load Failed
- Access Database
- Validate Session

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Design Patterns

Strategy & Factory Pattern

Teachers ----> Send Message

Send Message
△ △ △
Homework   Documentation
Send announcement

Observer Pattern

Announcement	subject	observers	Parent
notifyAnnouncement()		*	viewAnnouncement()

Documents	subject	observers	Parent
notifyDocument()		*	viewDocument()

Homework	subject	observers	Parent
notifyHomework()		*	viewHomework()

Strategy & Factory Pattern

```python
class MessageFactory:
    @staticmethod
    def get_message_strategy(message_type: str) -> MessageStrategy:
        if message_type == "homework":
            return HomeworkMessage()
        elif message_type == "documentation":
            return DocumentationMessage()
        elif message_type == "announcement":
            return AnnouncementMessage()
        else:
            raise ValueError(f"Unknown message type: {message_type}")
```

```python
class HomeworkMessage(MessageStrategy):
    def send(self, content: str):
        print(f"Sending homework: {content}")

class DocumentationMessage(MessageStrategy):
    def send(self, content: str):
        print(f"Sending documentation: {content}")

class AnnouncementMessage(MessageStrategy):
    def send(self, content: str):
        print(f"Sending announcement: {content}")
```
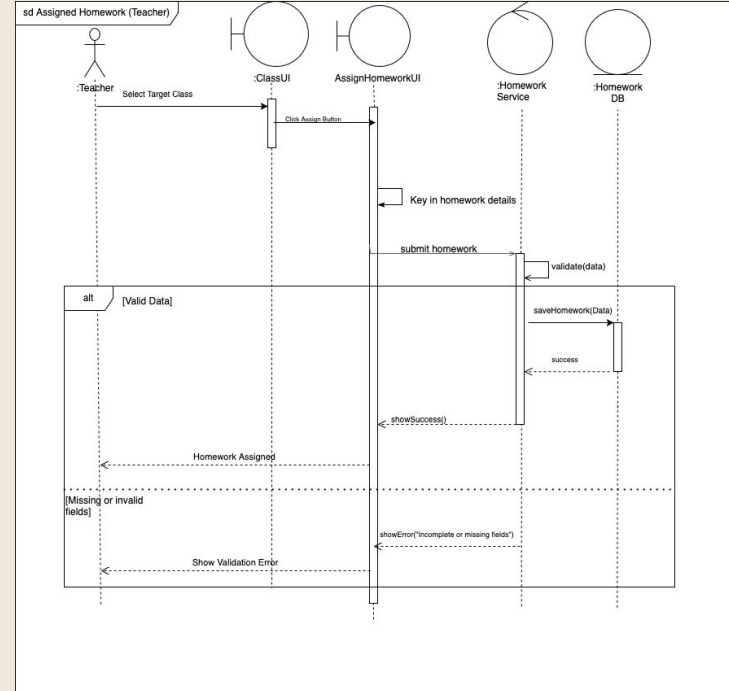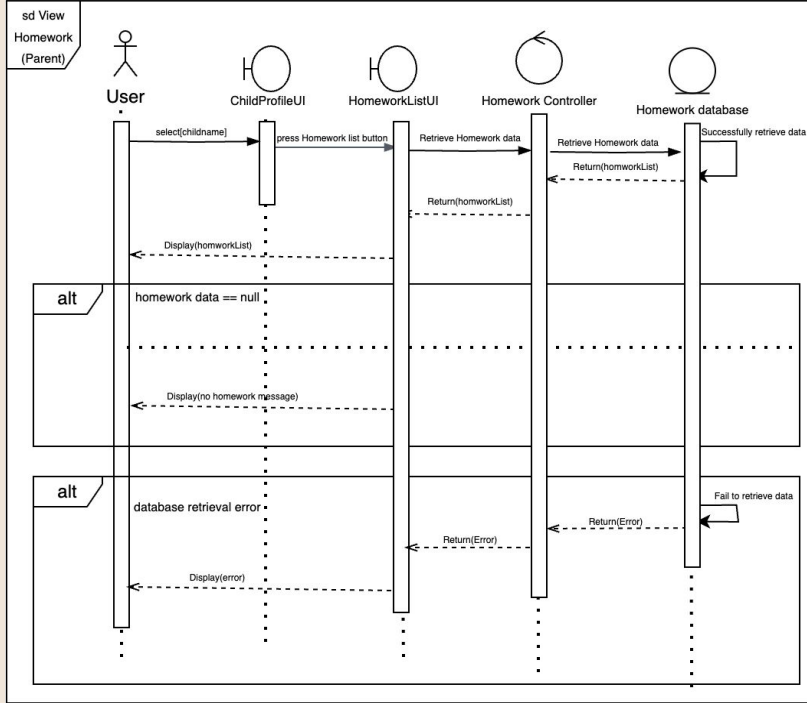
Observer Pattern

```python
1   class Announcement(Subject):
2       def notifyAnnouncement(self, message: str):
3           self.notify(f"Announcement: {message}")
4
5   class Document(Subject):
6       def notifyDocument(self, message: str):
7           self.notify(f"Document: {message}")
8
9   class Homework(Subject):
10      def notifyHomework(self, message: str):
11          self.notify(f"Homework: {message}")
12
```

Sequence Diagrams

TechStack

Frontend

 Expo

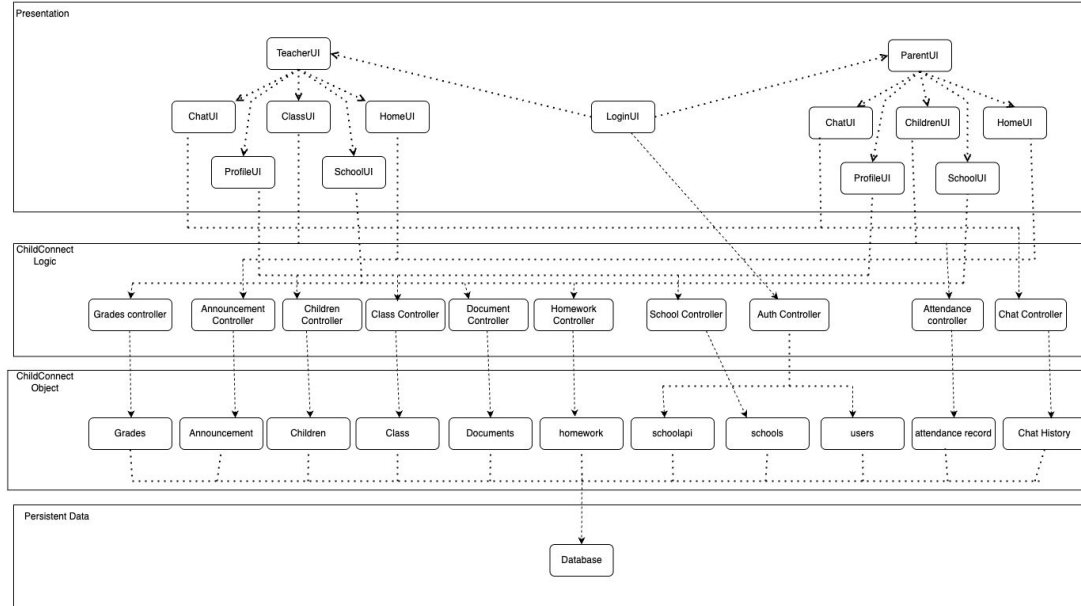 React-Native

Backend

 FastAPI

Database

 Firestore

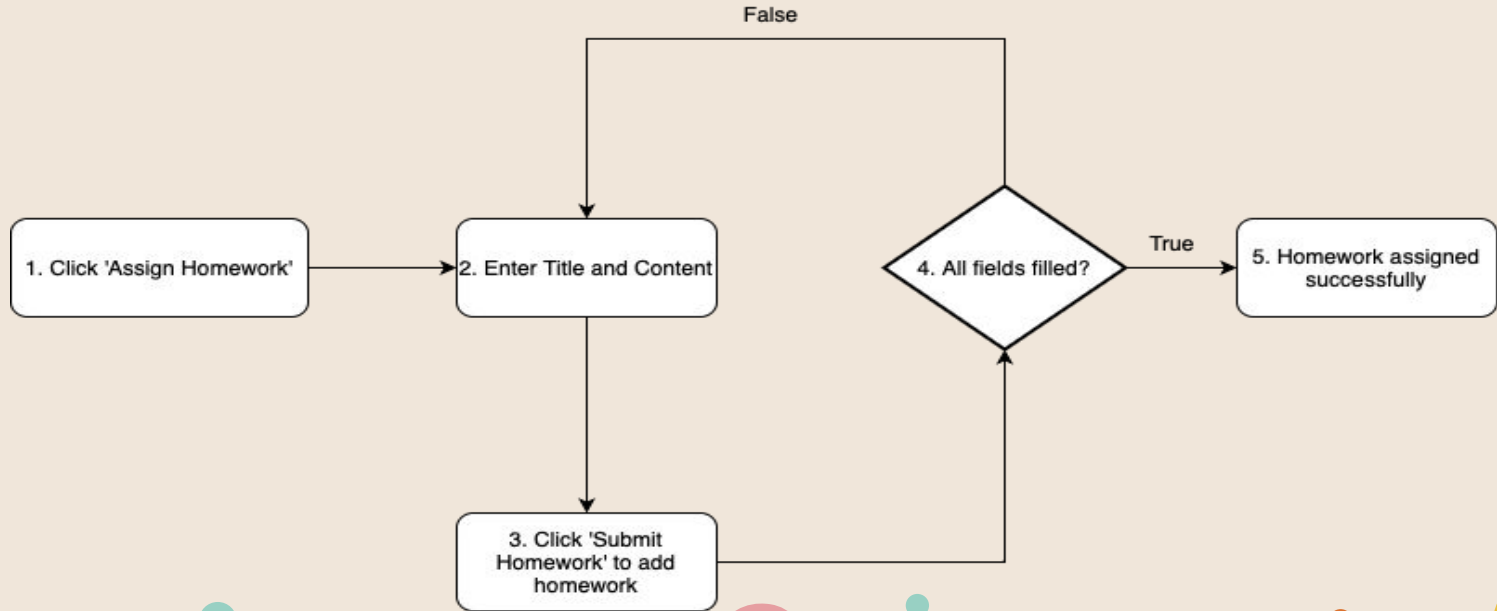Restful APIs

System Architecture

Testing

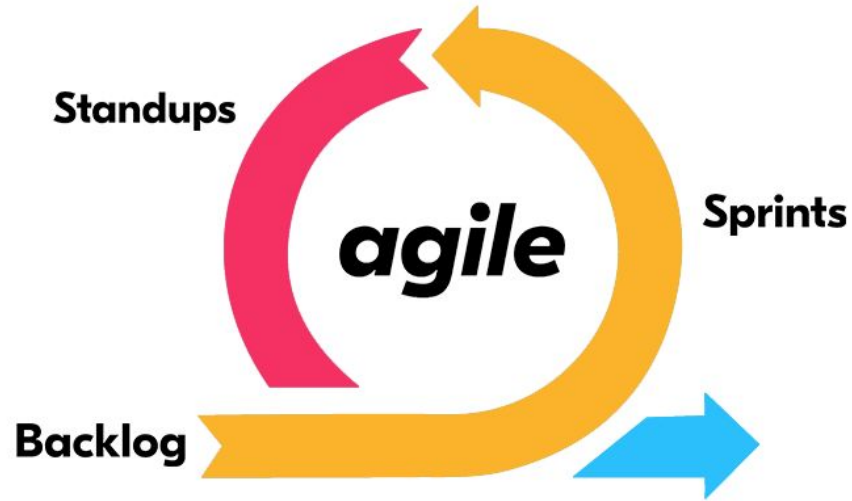| Test Case Name	Test Scenarios	Expected Output	Actual Output	Test Result
Class-1	Click into "1E4"	Homework List Announcement List Assign Homework Add Announcement Search Bar Display of student name and attendance Individual profile button for each student	Homework List Announcement List Assign Homework Add Announcement Search Bar Display of student name and attendance Individual profile button for each student	Pass
Class-2	Click Homework List	Math Homework Math TYS page 2 Subject: Math Due: 27 March 2025 Status: open	Math Homework Math TYS page 2 Subject: Math Due: 27 March 2025 Status: open	Pass
Class-3 (Homework)	Click Assign Homework	Assign Homework Title: Content: Due Date: Subject:	Assign Homework Title: Content: Due Date: Subject:	Pass

Testing

White Box Testing (Homework Assignment)

CC Value = 1 + 1 = 2

Testing

White Box Testing (Homework Assignment)

Path Taken	Test Cases	Expected	Actual	Passed
1,2,3,4,5 (Baseline)	fields_filled = True,	Toast: "Homework assigned successfully OK" Redirect to class page	Toast: "Homework assigned successfully OK" Redirect to class page	**Pass**
1,2,3,4,2,3,4,5	fields_filled = False, fields_filled = True,	Toast: "Missing Fields Please fill in all fields. OK" Toast: "Homework assigned successfully OK" Redirect to class page	Toast: "Missing Fields Please fill in all fields. OK" Toast: "Homework assigned successfully OK" Redirect to class page	**Pass**

Agile Methodology

THANK YOU!