WEEK 1

Duration: Jan 31 - Feb 6

Name	Role
Ammar Hesham El-Sayed	Collect data set and cleaning it
Omar Maher Saker	Design database and class diagram
Alaa Abdel-Khalek	Design UI-UX and Use Case
Ahmed Asfor El-Sayed	Design UI-UX and Sequence diagrams
Eslam Gaber Ebrahim	Activity diagram and Documentation

clean_data.py ● | inspect_values.py | check_columns.py

frist_ai_model > clean_data.py > ...

```python
import pandas as pd
import os


input_file = 'autism_data.csv'
output_file = 'autism_data_clean.csv'


if not os.path.exists(input_file):
    print(f" Error: {input_file} not found!")
else:
    print(" Loading dataset...")
    df = pd.read_csv(input_file)
    df.columns = df.columns.str.strip()


    original_count = len(df)
    print(f" Loaded! Original Rows: {original_count}")



    df['Sex'] = df['Sex'].map({'m': 1, 'f': 0})


    lower_case_mapping = {'yes': 1, 'no': 0}

    if 'Jauundice' in df.columns:
        df['Jauundice'] = df['Jauundice'].map(lower_case_mapping)
        df.rename(columns={'Jauundice': 'Jaundice'}, inplace=True)

    if 'Family_ASD' in df.columns:
        df['Family_ASD'] = df['Family_ASD'].map(lower_case_mapping)
    upper_case_mapping = {'YES': 1, 'NO': 0}

    if 'Class' in df.columns:
        df['Class'] = df['Class'].map(upper_case_mapping)

    df.dropna(inplace=True)

    final_count = len(df)

    print("\n--------------------------------------------------")
    if final_count > 0:
        print(" SUCCESS! Data cleaned successfully.")
        print(f"Final Row Count: {final_count} (out of {original_count})")


        df.to_csv(output_file, index=False)
        print(f" Saved to: '{output_file}'")


        print("\nFirst 5 rows of clean data:")
        print(df.head())
    else:
        print(" WARNING: The file is empty after cleaning!")
        print("Please check if the mappings match the file values exactly.")
    print("--------------------------------------------------")
```

frist_ai_model > inspect_values.py > ...

```python
import pandas as pd
import os

filename = 'autism_data.csv'

if not os.path.exists(filename):
    print(f" Error: {filename} not found!")
else:

    df = pd.read_csv(filename)


    df.columns = df.columns.str.strip()

    print("----- UNIQUE VALUES IN EACH COLUMN -----")


    if 'Sex' in df.columns:
        print("\n[Sex] values found:")
        print(df['Sex'].unique())

    if 'Jauundice' in df.columns:
        print("\n[Jauundice] values found:")
        print(df['Jauundice'].unique())


    if 'Family_ASD' in df.columns:
        print("\n[Family_ASD] values found:")
        print(df['Family_ASD'].unique())


    if 'Class' in df.columns:
        print("\n[Class] values found:")
        print(df['Class'].unique())

    print("\n-----------------------------------------------")
```

Table of Contents

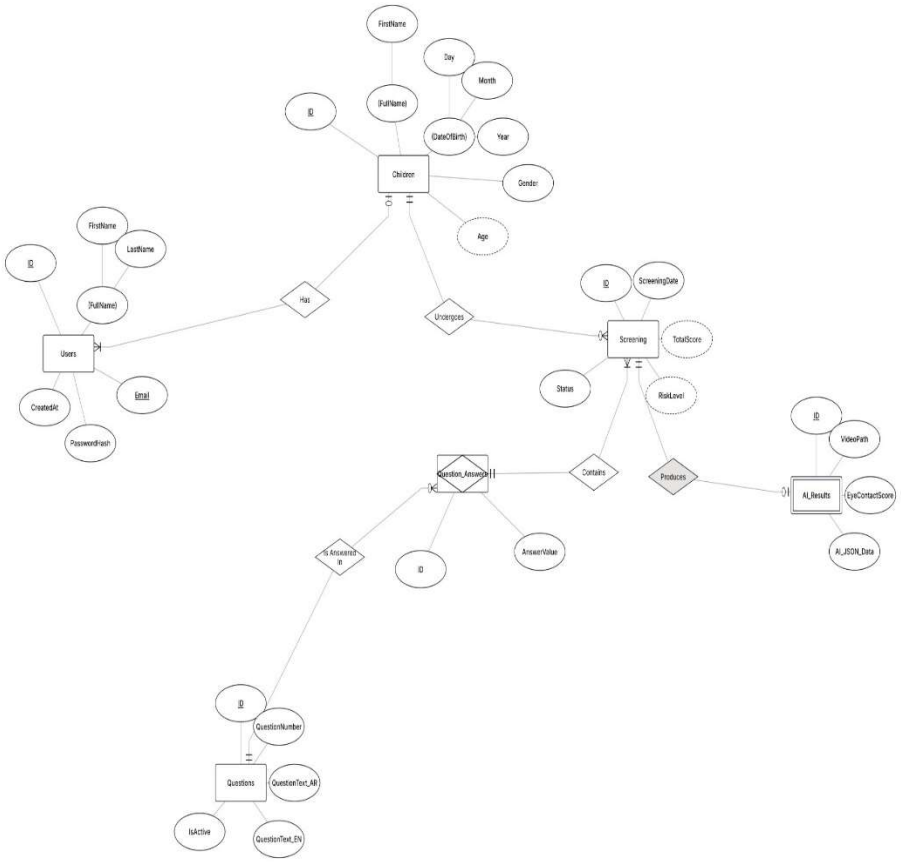
Examination Committee Page ..... **I**
Abstract ..... **II**
Acknowledgements ..... **III**
Table of Contents ..... **IV**
List of Figures ..... **VI**
List of Tables ..... **VIII**

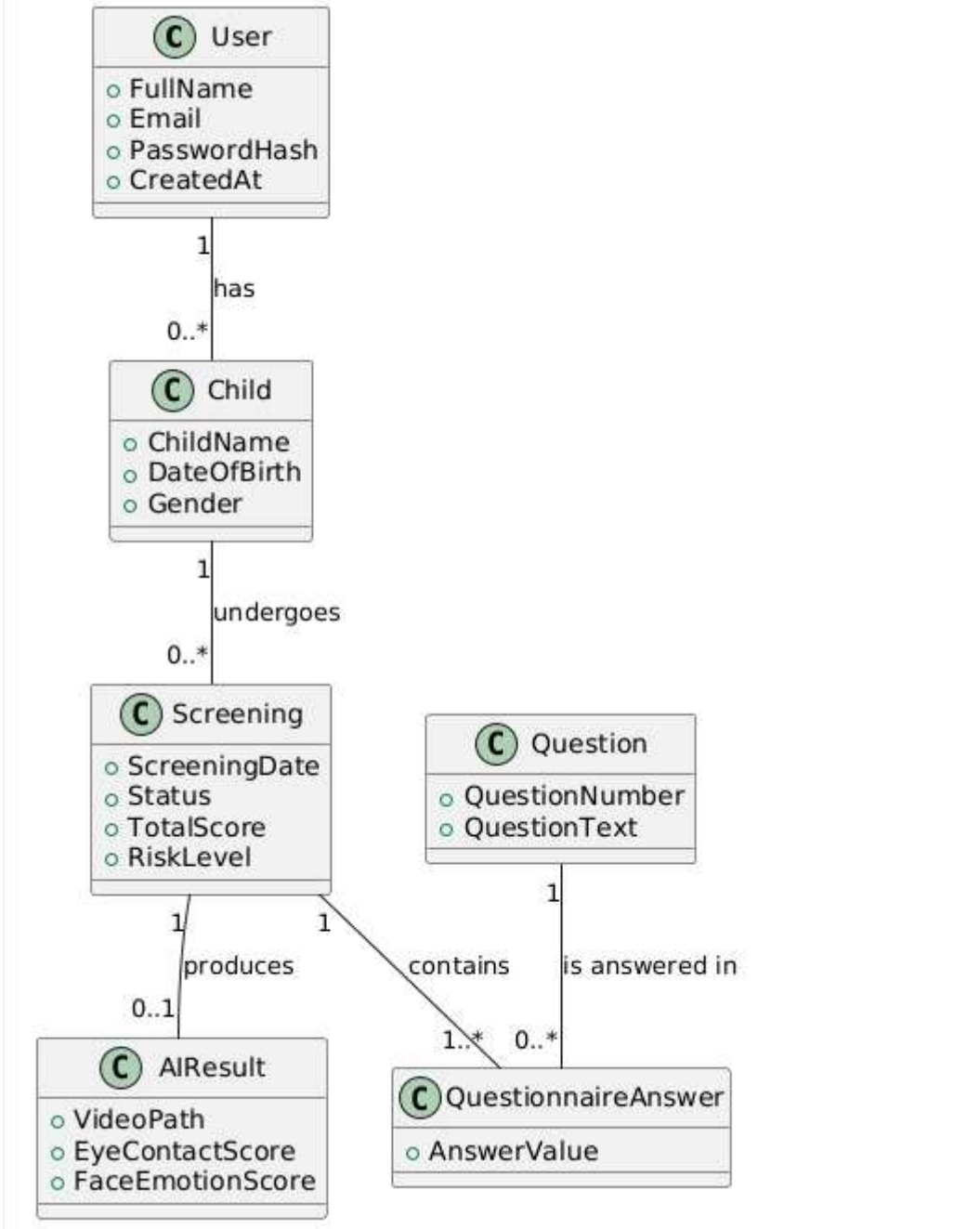
Chapter 1: Introduction
1.1 Overview and Background **1**
1.2 Motivation **2**
1.3 Problem Statement **3**
1.4 Project Objectives **4**
1.5 Proposed Solution **5**
1.6 Goal **6**
1.7 Critical Success Factors **7**
1.8 Expected Results **8**
1.9 Project Importance **9**
1.10 Analogues **10**

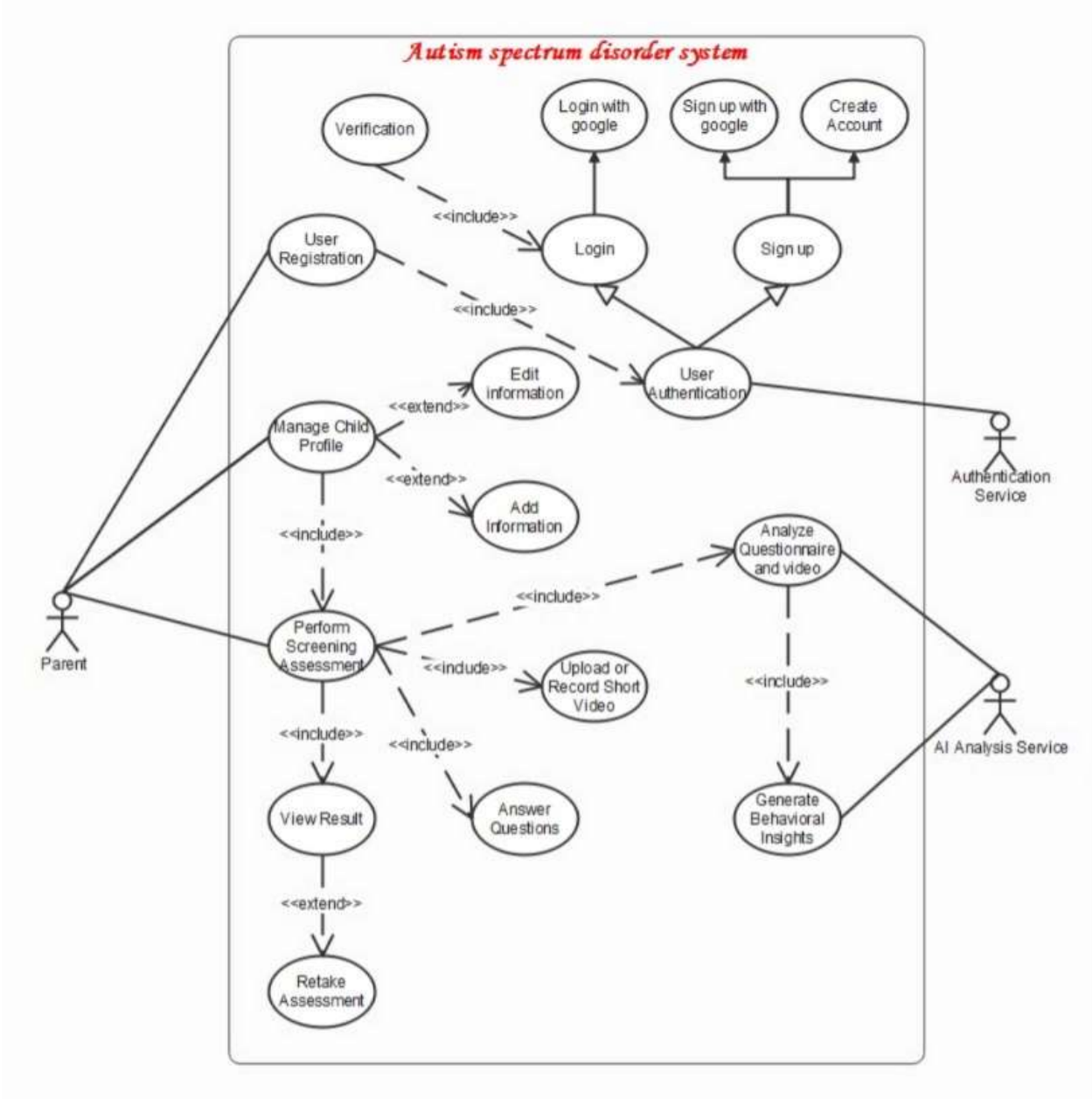
Chapter 2: System Analysis
2.1 Introduction **12**
2.2 Feasibility Study **13**
2.2.1 Technical Side **13**
2.2.2 Operational Side **14**
2.2.3 Economic Side **15**
2.3 Research Difficulties **16**
2.4 Risks and Limitations **17**
2.5 Project Plan **18**

Chapter 3: System Design
3.1 Introduction **20**
3.2 System Requirements **21**
3.2.1 Functional Requirements **21**
3.2.2 Non-Functional Requirements **23**
3.3 Diagrams **25**

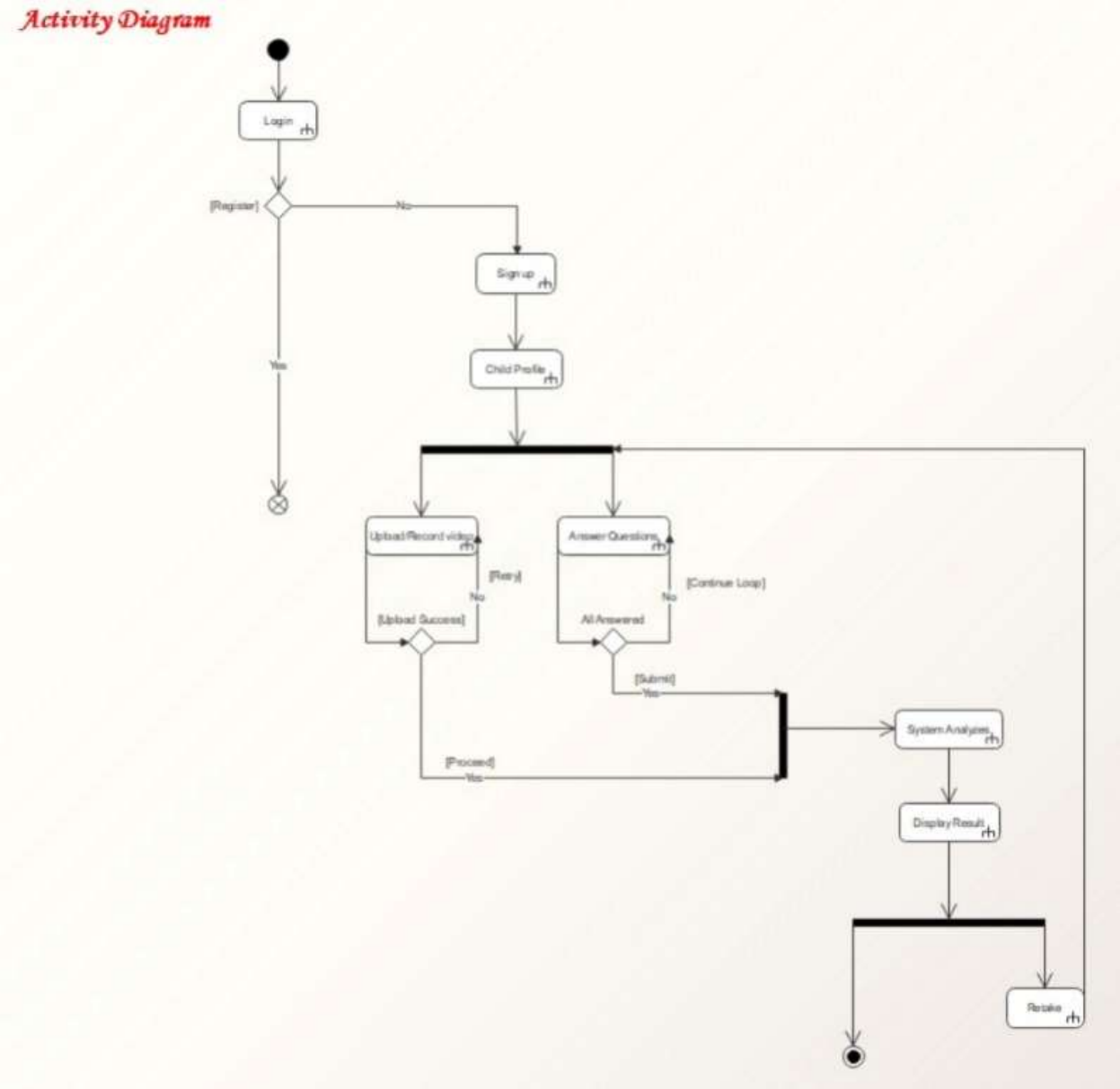
3.3.1 Data Flow Diagram (DFD) 25
3.3.2 Use Case Diagram 27
3.3.3 Sequence Diagram 29
3.3.4 Activity Diagram 31
3.3.5 Class Diagram 33
3.3.6 Entity Relationship Diagram (ERD) 35
3.4 Mobile Application UI Screens 37
3.4.1 Login Screens 37
3.4.2 Parent/User Screens 40
3.4.3 Admin Screens 45
3.5 Database Schema 50
3.6 UI & UX Design 52

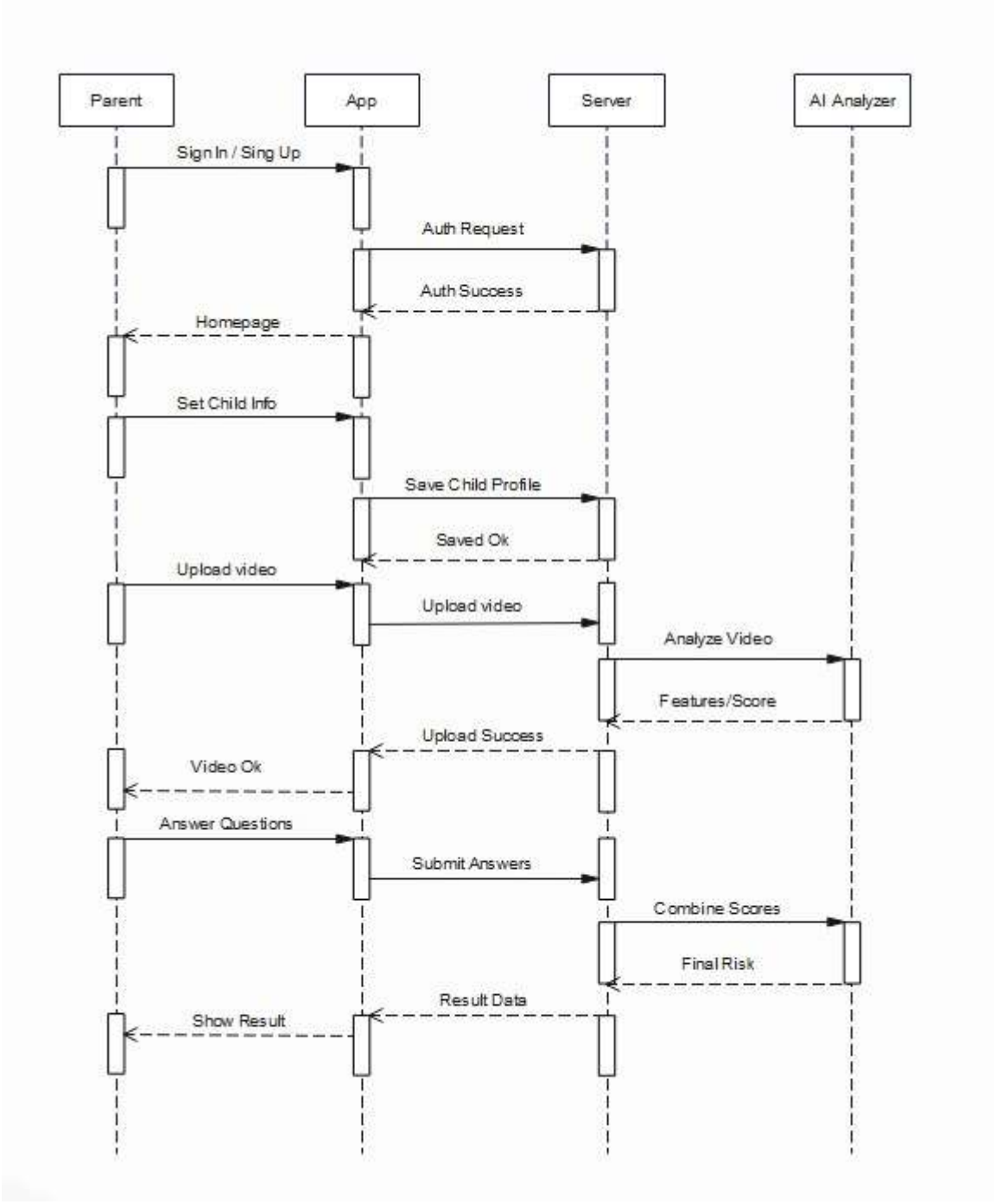

FirstName
Day
Month
ID
(FullName)
(DateOfBirth)
Year
Children
Gender
Age
FirstName
LastName
ID
(FullName)
Has
Undergoes
ID
ScreeningDate
Users
Screening
TotalScore
Email
Status
RiskLevel
CreatedAt
PasswordHash
ID
VideoPath
Question_Answers
Contains
Produces
AI_Results
EyeContactScore
Is Answered in
ID
AnswerValue
AI_JSON_Data
ID
QuestionNumber
Questions
QuestionText_AR
IsActive
QuestionText_EN

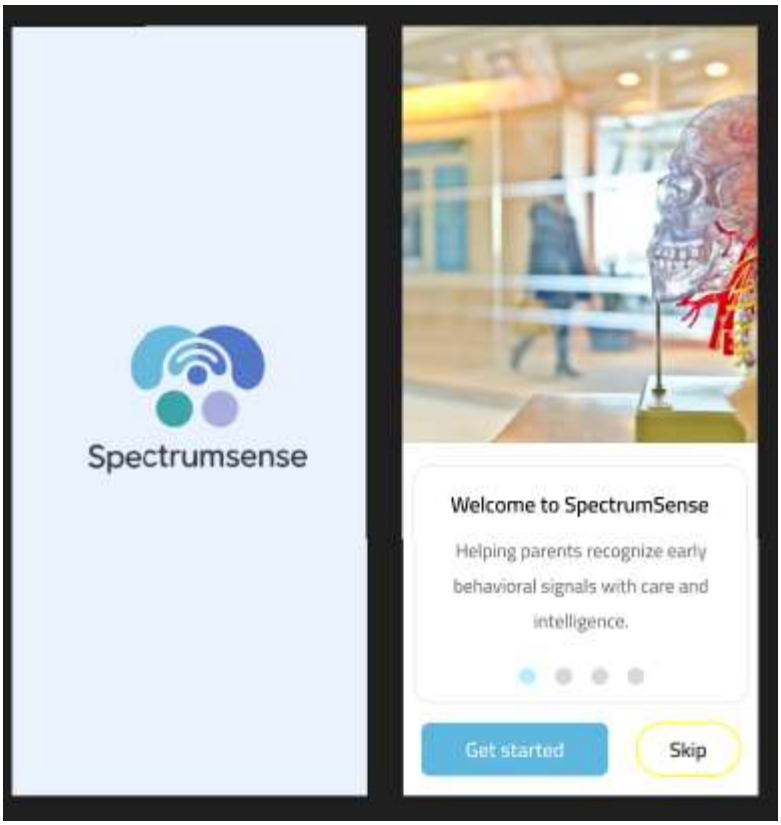

User
FullName
Email
PasswordHash
CreatedAt
1
has
0..*
Child
ChildName
DateOfBirth
Gender
1
undergoes
0..*
Screening
ScreeningDate
Status
TotalScore
RiskLevel
Question
QuestionNumber
QuestionText
1
produces
0..1
1
contains
1..*
1
is answered in
0..*
AIResult
VideoPath
EyeContactScore
FaceEmotionScore
QuestionnaireAnswer
AnswerValue

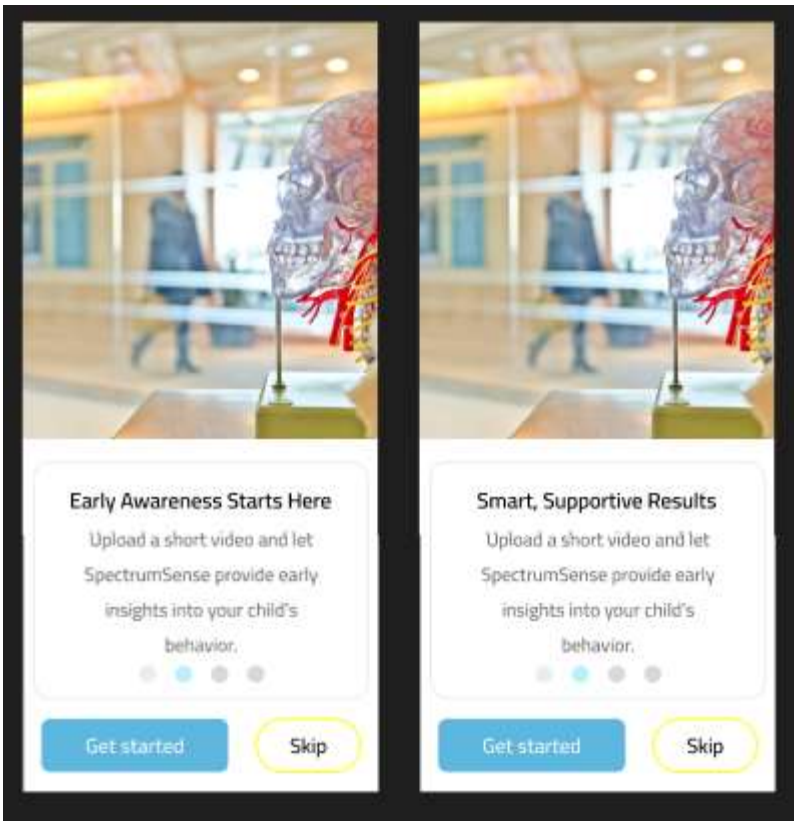

Autism spectrum disorder system
Verification
Login with google
Sign up with google
Create Account
<<include>>
Login
Sign up
User Registration
<<include>>
User Authentication
Edit information
<<extend>>
Manage Child Profile
<<extend>>
Add Information
Authentication Service
<<include>>
Analyze Questionnaire and video
<<include>>
Parent
Perform Screening Assessment
<<include>>
Upload or Record Short Video
<<include>>
AI Analysis Service
<<include>>
<<include>>
Answer Questions
View Result
Generate Behavioral Insights
<<extend>>
Retake Assessment

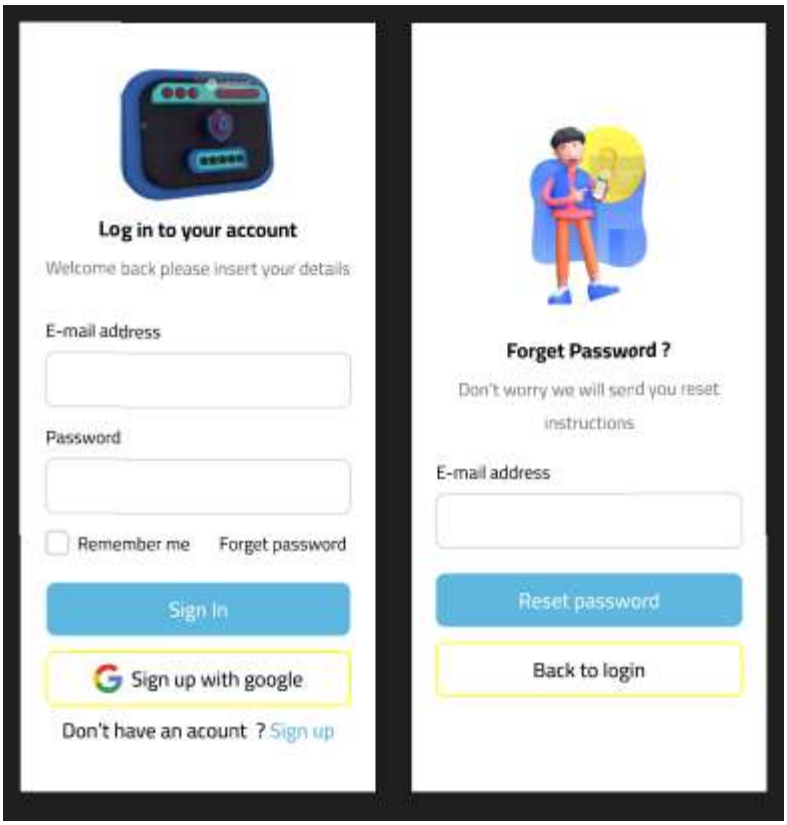
Activity Diagram

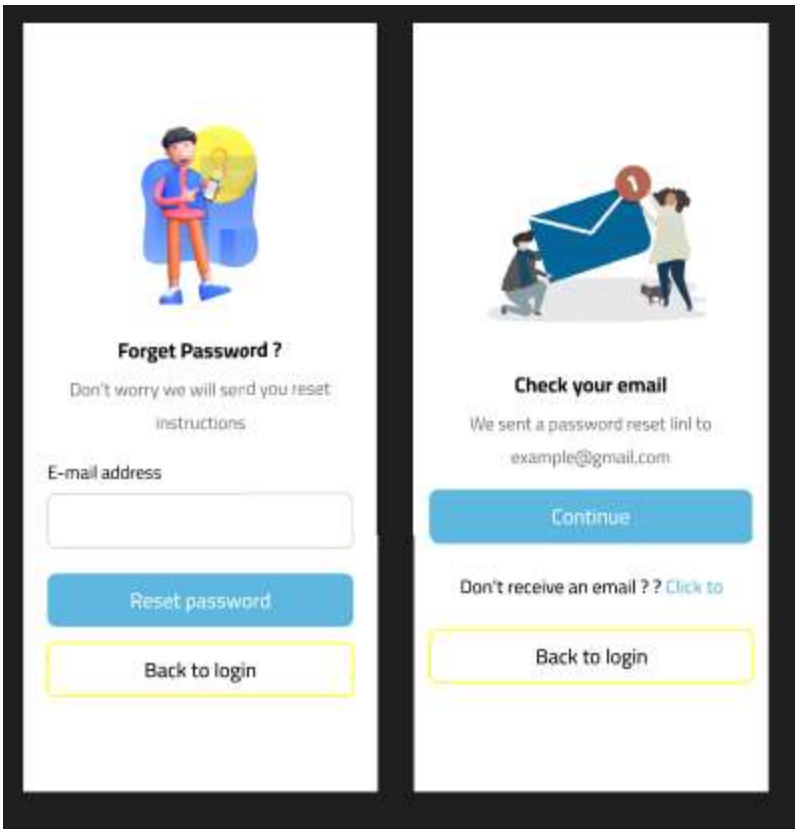


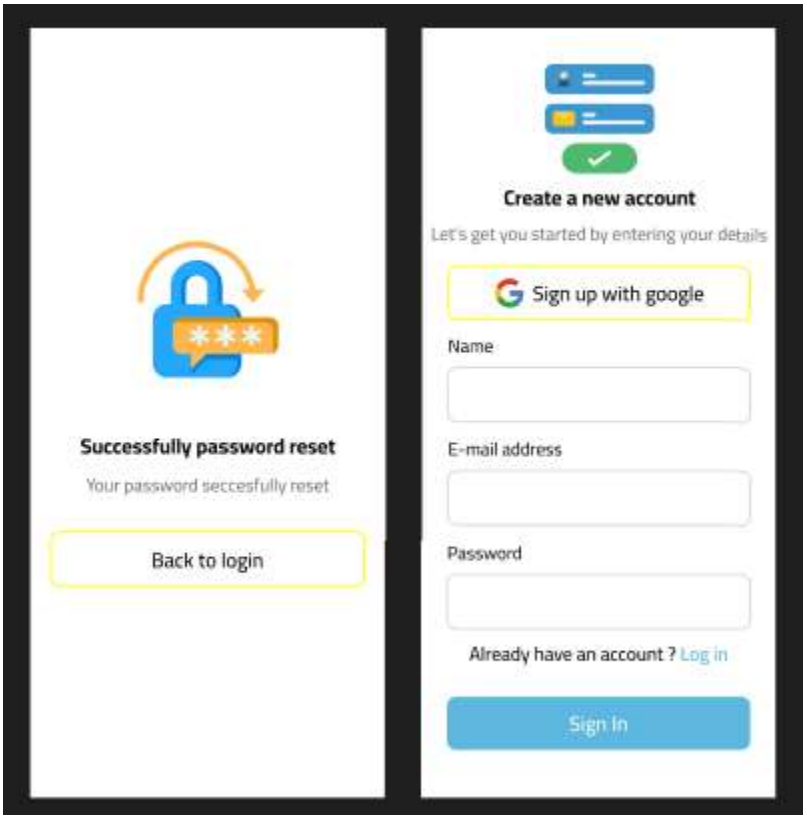

Parent
App
Server
AI Analyzer
Sign In / Sing Up
Auth Request
Auth Success
Homepage
Set Child Info
Save Child Profile
Saved Ok
Upload video
Upload video
Analyze Video
Features/Score
Upload Success
Video Ok
Answer Questions
Submit Answers
Combine Scores
Final Risk
Result Data
Show Result

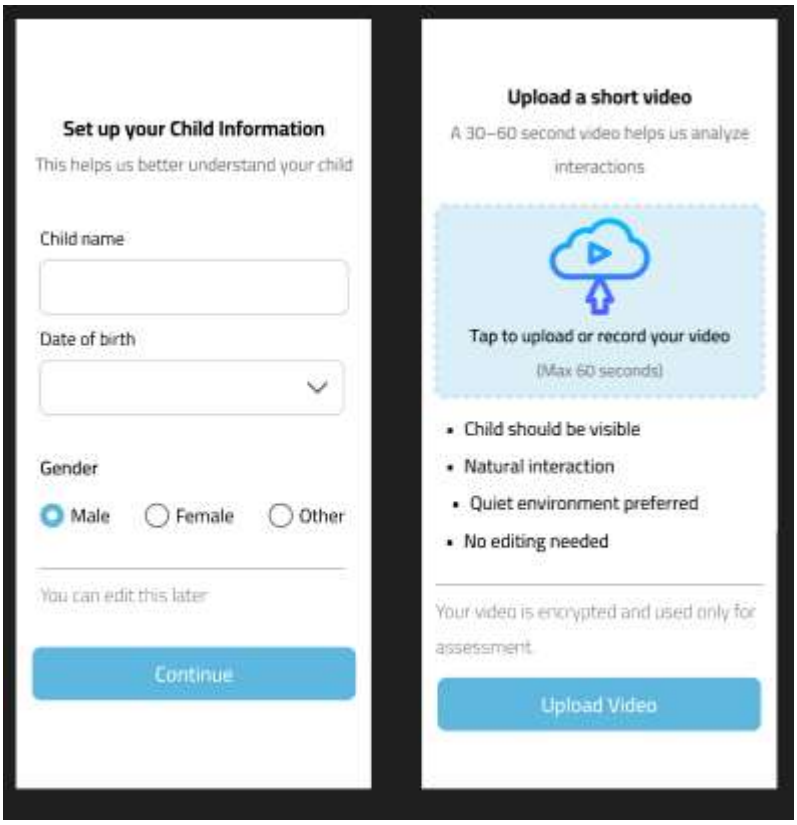

Spectrumsense
Welcome to SpectrumSense
Helping parents recognize early behavioral signals with care and intelligence.
Get started
Skip

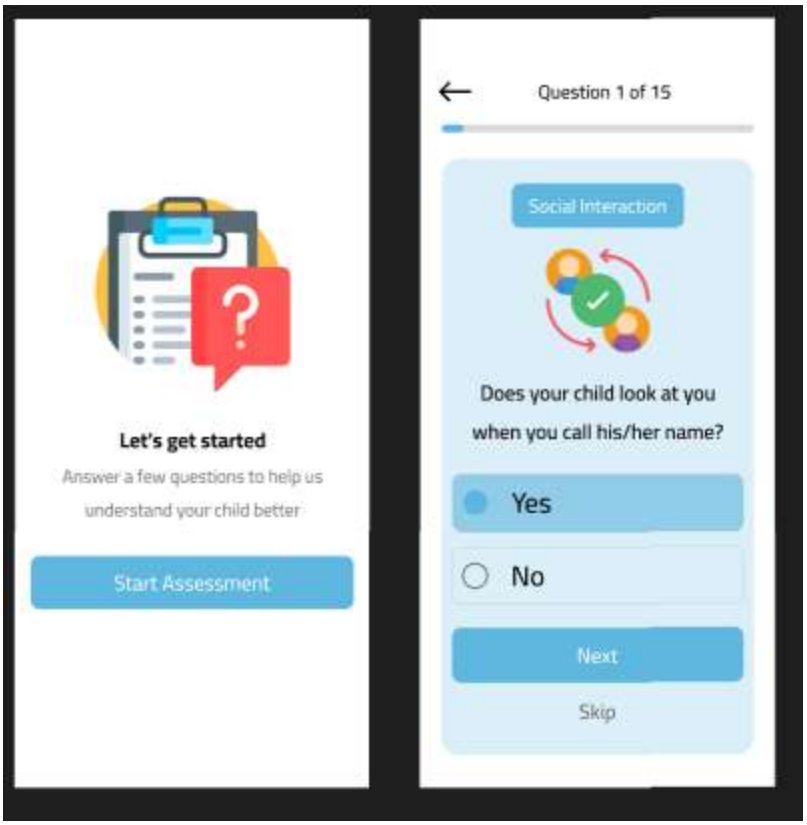

Early Awareness Starts Here
Upload a short video and let SpectrumSense provide early insights into your child's behavior.
Get started
Skip
Smart, Supportive Results
Upload a short video and let SpectrumSense provide early insights into your child's behavior.
Get started
Skip

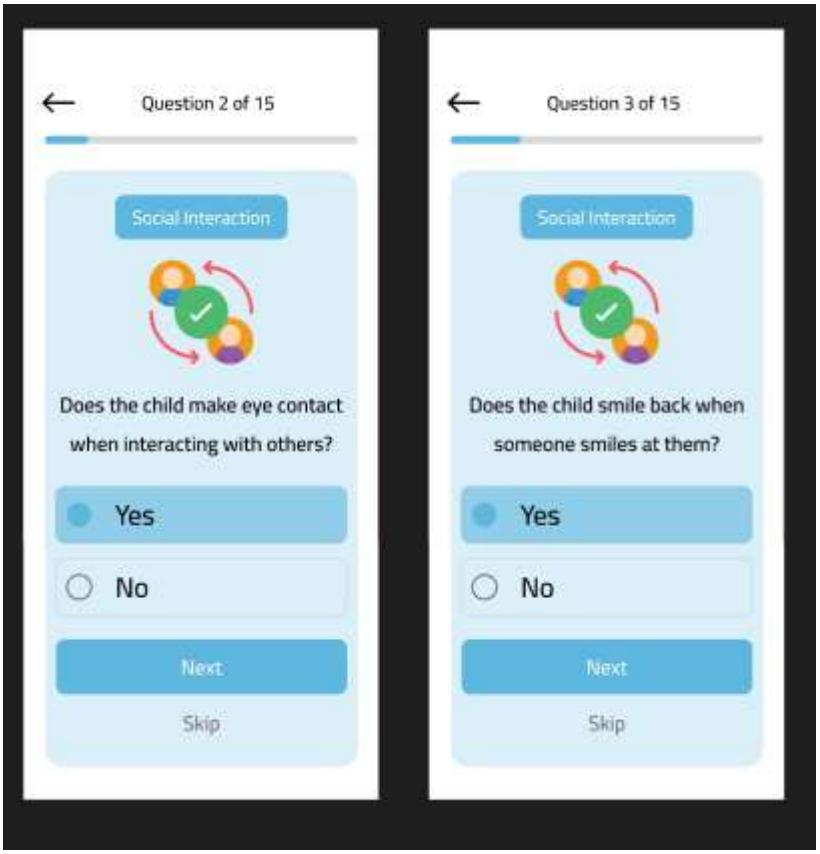

Log in to your account
Welcome back please insert your details
E-mail address
Password
Remember me
Forget password
Sign In
Sign up with google
Don't have an acount ? Sign up
Forget Password ?
Don't worry we will send you reset instructions
E-mail address
Reset password
Back to login


Forget Password ?
Don't worry we will send you reset instructions
E-mail address
Reset password
Back to login
Check your email
We sent a password reset linl to example@gmail.com
Continue
Don't receive an email ? ? Click to
Back to login

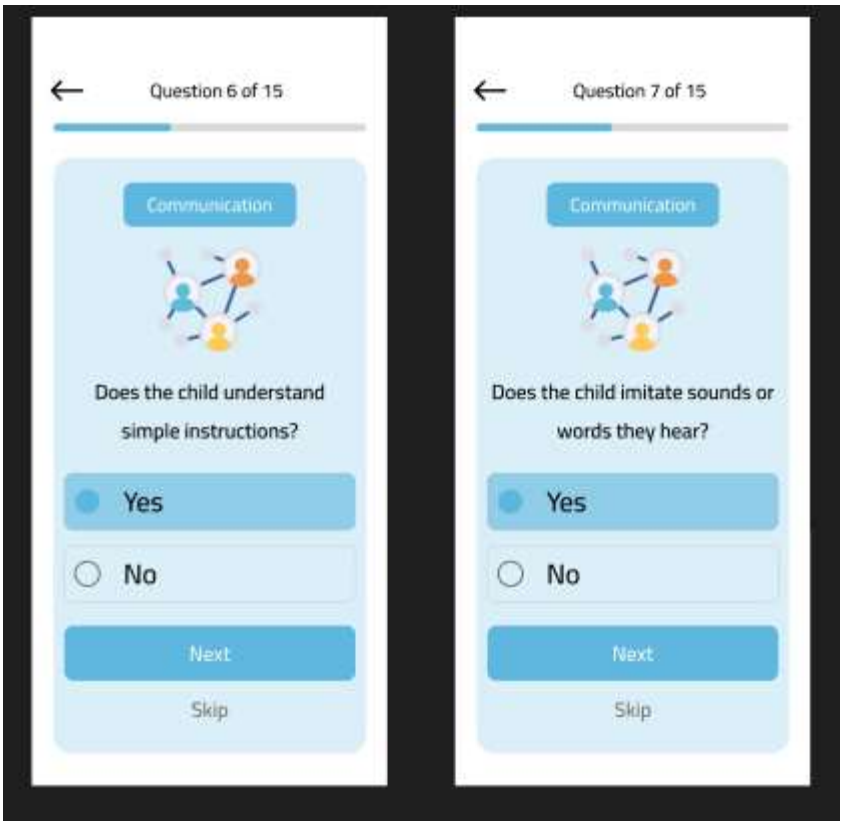

Successfully password reset
Your password seccesfully reset
Back to login
Create a new account
Let's get you started by entering your details
Sign up with google
Name
E-mail address
Password
Already have an account ? Log in
Sign In

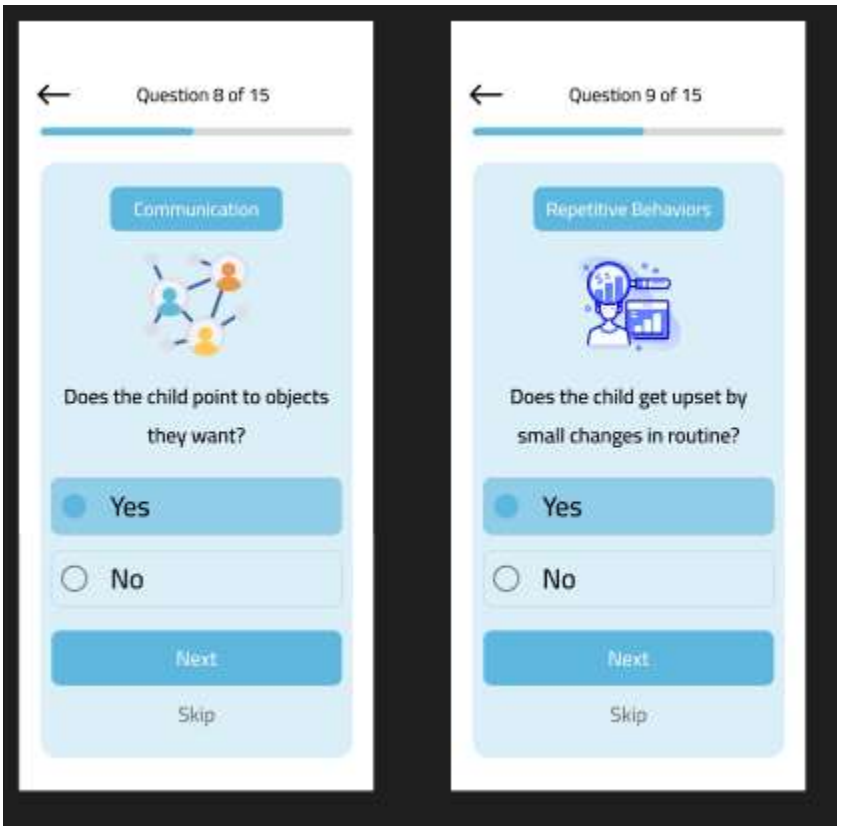

Set up your Child Information
This helps us better understand your child
Child name
Date of birth
Gender
Male
Female
Other
You can edit this later
Continue
Upload a short video
A 30–60 second video helps us analyze interactions
Tap to upload or record your video
(Max 60 seconds)
Child should be visible
Natural interaction
Quiet environment preferred
No editing needed
Your video is encrypted and used only for assessment
Upload Video

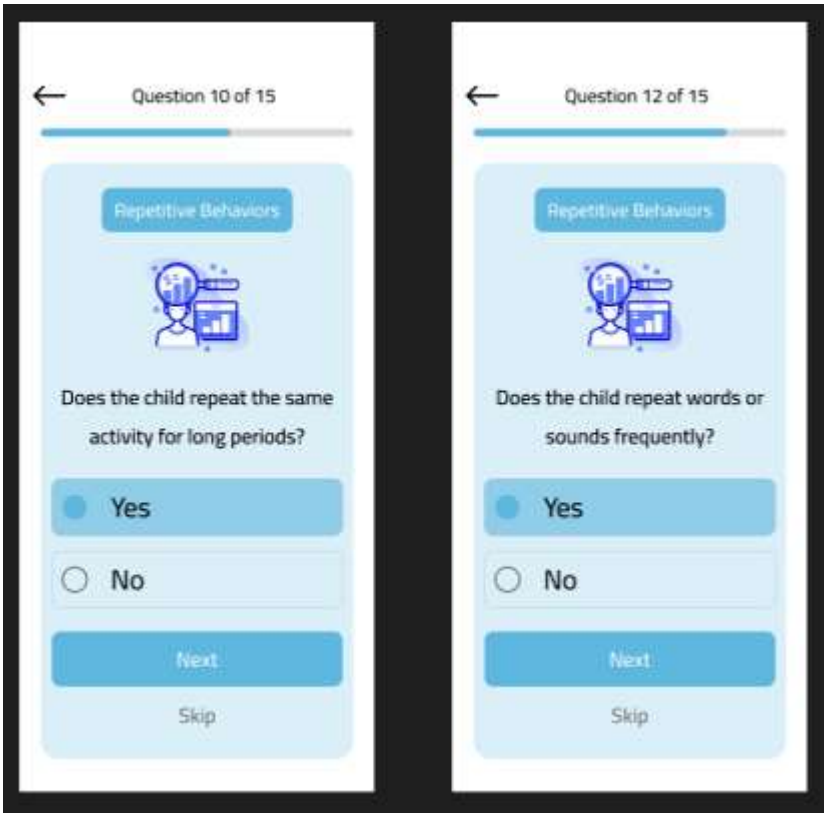

Let's get started
Answer a few questions to help us understand your child better
Start Assessment
Question 1 of 15
Social Interaction
Does your child look at you when you call his/her name?
Yes
No
Next
Skip

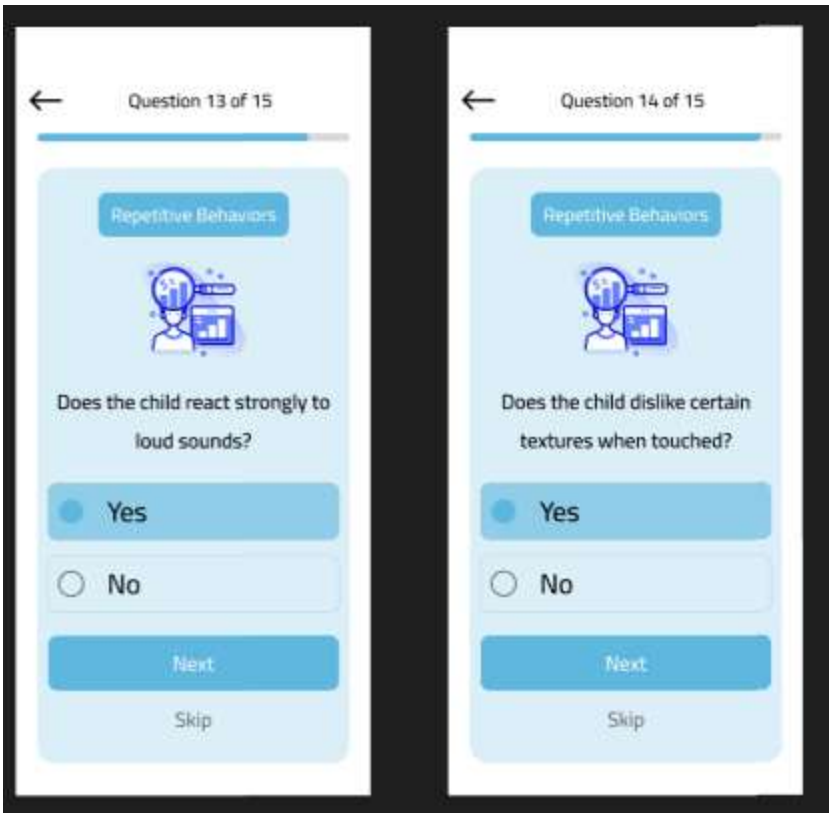

Question 2 of 15
Social Interaction
Does the child make eye contact when interacting with others?
Yes
No
Next
Skip
Question 3 of 15
Social Interaction
Does the child smile back when someone smiles at them?
Yes
No
Next
Skip

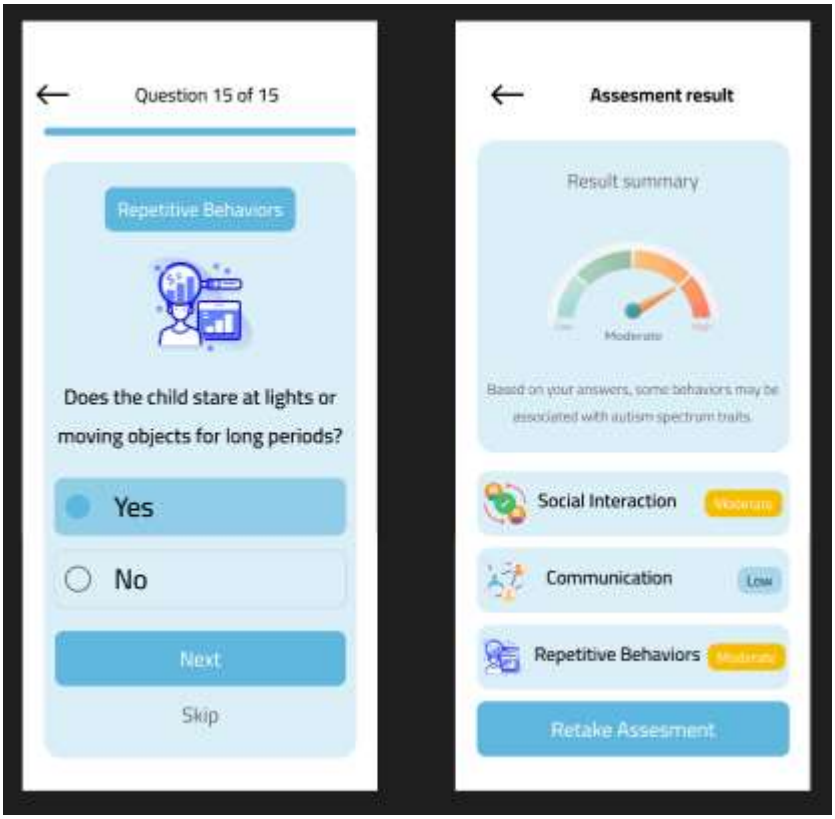
Question 4 of 15
Social Interaction
Does the child enjoy playing with other children?
Yes
No
Next
Skip
Question 5 of 15
Communication
Does the child use words or gestures to express needs?
Yes
No
Next
Skip


Question 6 of 15
Communication
Does the child understand simple instructions?
Yes
No
Next
Skip
Question 7 of 15
Communication
Does the child imitate sounds or words they hear?
Yes
No
Next
Skip


Question 8 of 15
Communication
Does the child point to objects they want?
Yes
No
Next
Skip
Question 9 of 15
Repetitive Behaviors
Does the child get upset by small changes in routine?
Yes
No
Next
Skip


Question 10 of 15
Repetitive Behaviors
Does the child repeat the same activity for long periods?
Yes
No
Next
Skip
Question 12 of 15
Repetitive Behaviors
Does the child repeat words or sounds frequently?
Yes
No
Next
Skip


Question 13 of 15
Repetitive Behaviors
Does the child react strongly to loud sounds?
Yes
No
Next
Skip
Question 14 of 15
Repetitive Behaviors
Does the child dislike certain textures when touched?
Yes
No
Next
Skip


Question 15 of 15
Repetitive Behaviors
Does the child stare at lights or moving objects for long periods?
Yes
No
Next
Skip
Assesment result
Result summary
Moderate
Based on your answers, some behaviors may be associated with autism spectrum traits.
Social Interaction
Communication
Low
Repetitive Behaviors
Retake Assesment