



ScheduleAssist



Improved communication with children diagnosed with autism

Software Design Document

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Table of Contents

1. Introduction.....	2
1.1. Overview	2
1.2. Problem Description and Motivation	2
1.3. Goals	2
1.4. Scope	2
1.5. Glossary	3
2. System Architecture – System Context Diagram	4
3. Design	5
3.1. Data Design	5
3.2. Structural Design.....	6
3.3. Interaction Design	6
4. Software Architecture	7
5. Verification and Validation	7

1. Introduction

ScheduleAssist improve communication between parents and their children. Each child will have an interactive display customized and set by the child with his parents and every parents will get analysis report on their child including review per month on progress (if better communication achieved and how to improve it).



Picture 1.1 – Application view

1.1. Overview

ScheduleAssist is an app that simplify the communication and helps the children and express themselves in an easier way – pictures, and better understanding and OTG actions for parents. Every child will have a better way to express their desires and needs.

1.2. Problem Description and Motivation

Lack of understanding children with autism needs and desires.

The average child express their feelings and needs with tears and screaming which makes is hard for the parents to understand how to help and consume their children properly which leads to frustration on both sides – children and parents.

1.3. Goals

ScheduleAssist trying to embrace and children and their parent's moral by helping them dealing with daily struggles. The main goals are:

- Simplifying the children needs by communicating with pictures.
- Better understanding of the needs of the child by the parents.
- Self-monitoring analysis and reporting technology.
- Easy way to communicate with doctors, psychologist, and professional consultant that gets a report for the child and the data the professional needs in order to help properly and efficiently.
- Monthly report on the child's behavior and habits recommended to learn in order to embrace the child's confidence.

1.4. Scope

Our application lives in families that have diagnosed children with autism.

The scope of ScheduleAssist is the improve communication and translating the unexpressed needs and desires into pictures and learning new habits to improve the communication by AI.

The domain is application software.

1.5. Glossary

AI – Artificial Intelligence. The computer learns the user's behavior and by scenarios the computers learned, it can suggest a new and better behavior (reflects on our application).

OTG – On-The-Go actions.

App – Application on smartphones.

Spectrum – children with diagnosis of autism spectrum disorder.

Guideline – an easy way to describe what are the normal lines that should be at a child's with disorder, and red lights that describe for a distress signal.

HMO – Health maintenance organization.

DB – Database.

Debug mode – means that the default values are inserted and not of a user.

Personnel – the staff that works on the application – Engineering, developers, QA, Product manager etc.

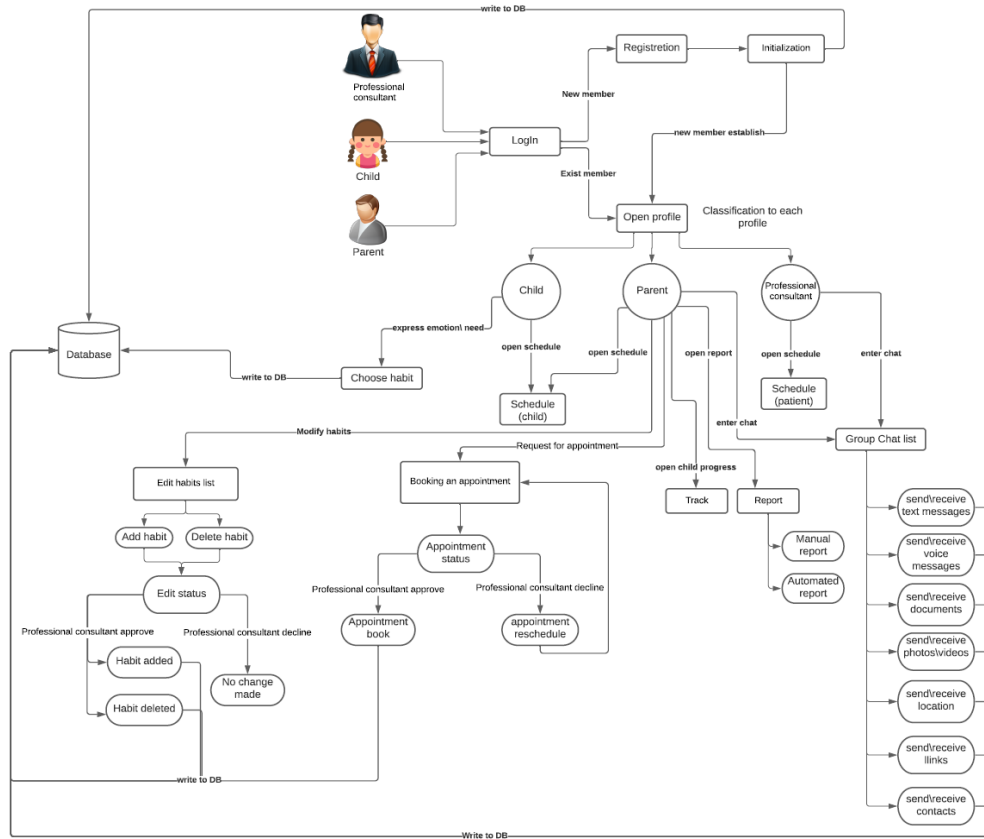
ANR – Application not responsive.

ASD – Autism spectrum disorder.

Patient – A patient is the parent and child together. All the logistics shall be arranged through the parent, and all the data is on the child.

2. System Architecture – System Context Diagram

A system context diagram (SCD) in engineering is a diagram that defines the boundary between the system, or part of a system, and its environment, showing the entities that interact.

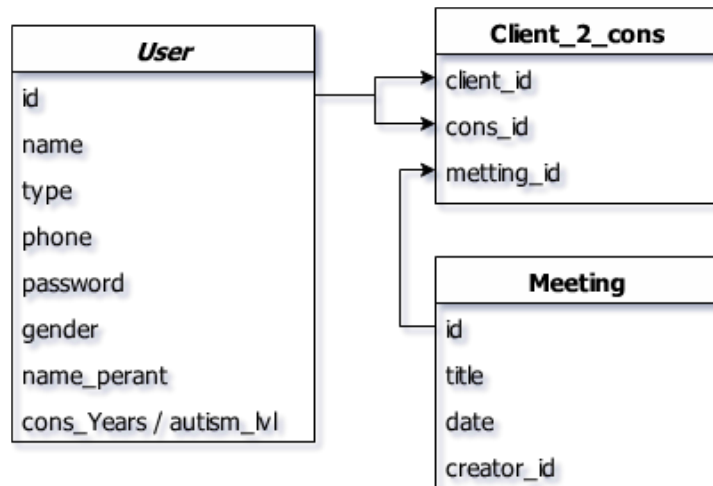


3. Design

Database design is the organization of data according to a database model. The designer determines what data must be stored and how the data elements interrelate. With this information, they can begin to fit the data to the database model.

The design of is divided to 3 structure: data, class, and sequence.

3.1. Data Design



Json Structure:

"Levels of autism"

```

{
  "1": {
    "title": "Requiring Support",
    "description": "A person with ASD level 1 usually is
able to speak in full sentences and communicate, but has trouble
engaging in back-and-forth conversation with others. They may try to
make friends, but not be very successful."
  },
  "2": {
    "title": "Requiring Substantial Support",
    "description": "A person diagnosed with ASD level 2
tends to speak in simple sentences and also struggles with nonverbal
forms of communication."
  },
  "3": {
    "title": "Requiring Very Substantial Support",
    "description": "A person with ASD level 3 will have a
very limited ability to speak intelligibly and will
rarely initiate interactions. When they do initiate
an interaction, they will do so awkwardly. Someone
with level 3 will also respond only to very direct
social approaches from tother people."
  }
}
  
```

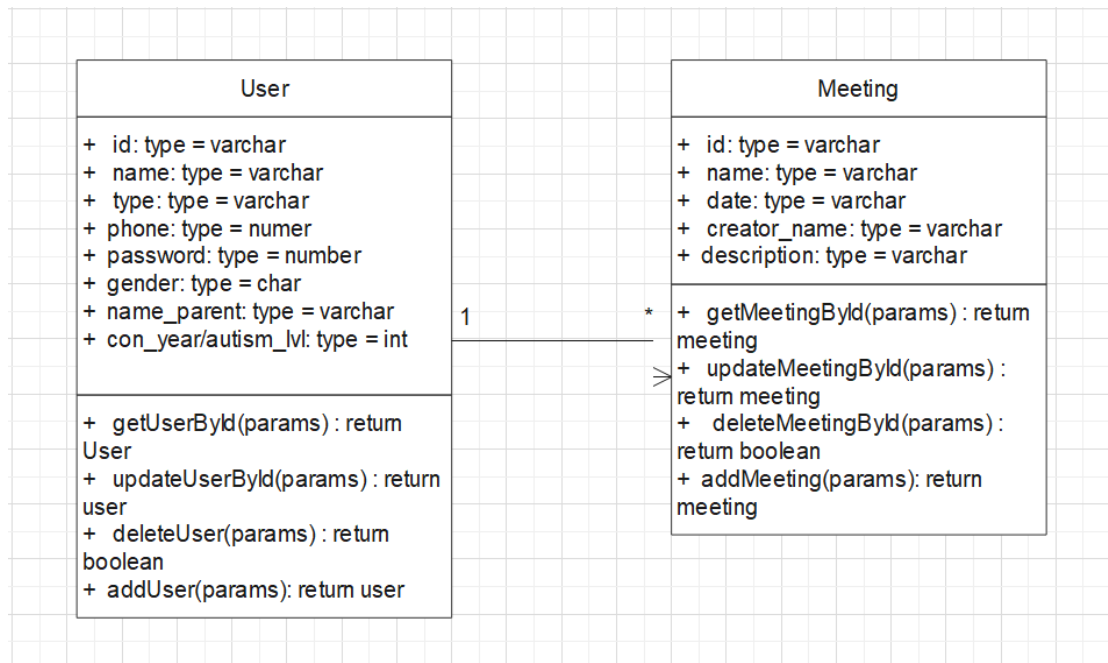
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    }
}

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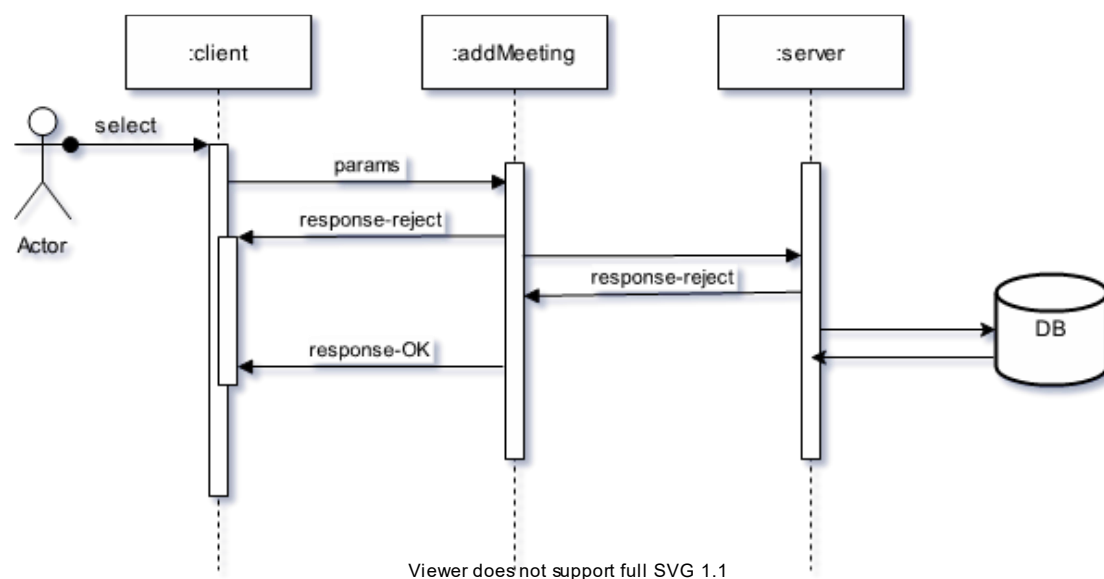
3.2. Structural Design

Class Diagram



3.3. Interaction Design

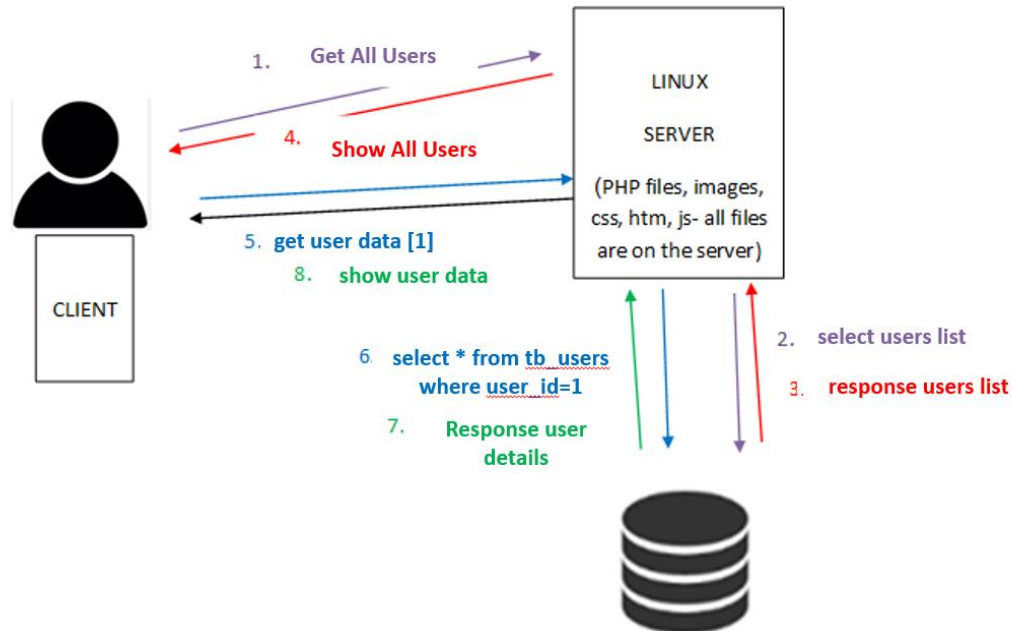
Sequence Diagram



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4. Software Architecture

Software architecture refers to the fundamental structures of a software system and the discipline of creating such structures and systems. Our main item is the users.



5. Verification and Validation

Verification and validation (also abbreviated as V&V) are independent procedures that are used together for checking that a product, service, or system meets requirements and specifications and that it fulfills its intended purpose.

1. Validate email format: include '@' and '.com'.
2. Validate name contains one space bar – first and surname.
3. Validate child user get child user, and the same for constant.
4. Validate login authentication – username and password is available on DB.
5. Validate all sub-menus appears on menu.
6. Validate all links are valid and leads to the correct webpage.