Software Design Document

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1. Introduction

1.1 Purpose

This software design document describes the architecture and system design of our project.

1.2 Scope

- The system is made to make purchases in the grounds of the school only, in other words a kid cannot use his points outside the school.
- The system is targeting only the parents.

1.3 Overview

This document provides the base layer of our system overall view

1.4 Definitions and Acronyms

RFID - Radio-frequency identification uses electromagnetic fields to automatically identify and track tags attached to objects, kids will be able to make purchases via their RFID card.

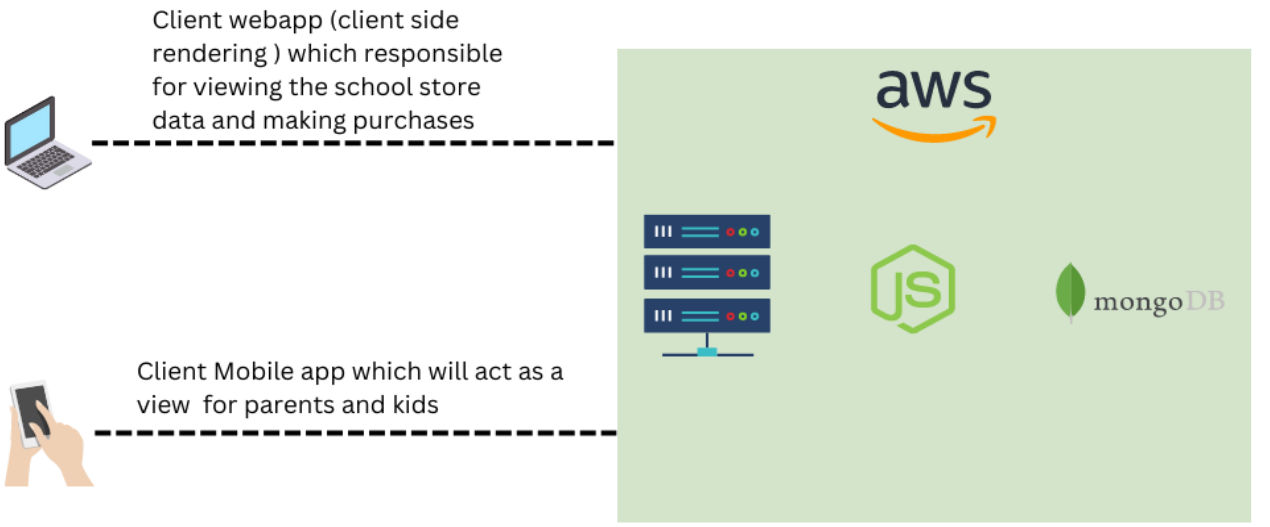
2. System Overview

A system that makes kids make purchases from school cafeteria with their own RFID card, each card filled with points that parents can recharge via the main application, parents can also enable limits on the spending of the kid, add allergens, track kid location.

3. System Architecture

3.1 Architectural Design

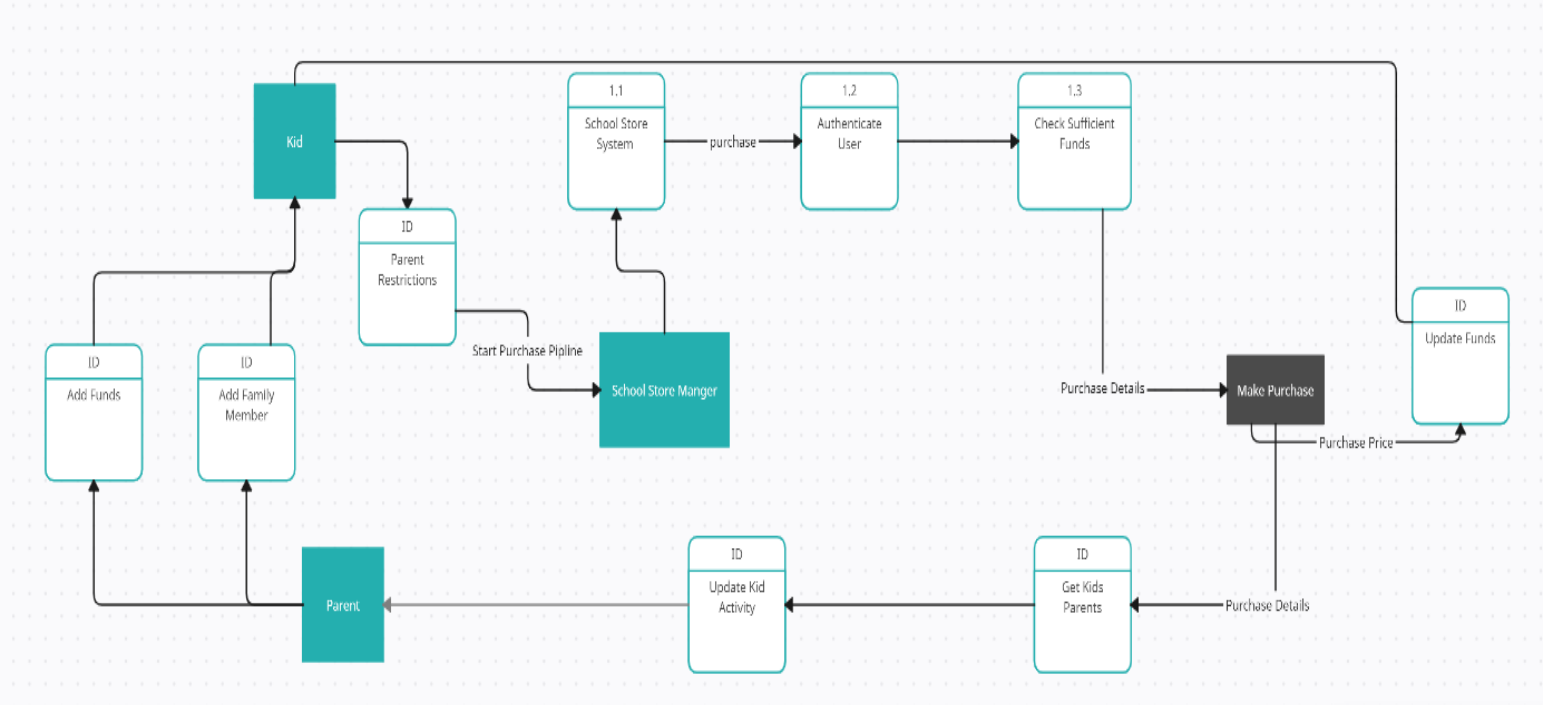
We decided to go with 3Tier architectural design,



A remote served server , That gets clients requests and process them accordingly , The server will use a (remote or local) mongodb database

3.2 Decomposition Description

DFD - Data Flow Diagram



3.3 Design Rationale

A 3 tier system allows us to connect different client side applications , like mobile , web , etc… , Additionally in this kind of architecture the system logic will be concentrated at only one place , this allows us to build the system in a way that makes it robust and consistent across all client apps , and no logic code duplication.

4. Data Design

4.1 Data Description

All the system information will be stored in a remote Mongodb database in json format , and it will be processed by a node js server before entering mongodb .

4.2 Data Dictionary

1. Parent Restrictions , Parameters: Kids ID
2. Authenticate User , Parameters: User Token
3. Check Sufficient Funds : Parameters: Kids ID , Purchase Price
4. Get Kid Parents : Parameters: Kids ID
5. Update Kid Activity : Parameters: Kids ID , Activity
6. Add Family Member : Parameters: Kids ID
7. Add Funds : Parameters: Kids ID
8. Update Funds : Parameters: Kids ID

5. Component Design

Our system is divided into 2 parts :

web-application:- cafeteira/school interface
mobile-application:- parents interface

6. Human Interface Design

6.1 Overview of User Interface

In this section we will describe the functionality of the system from the user's point of view.

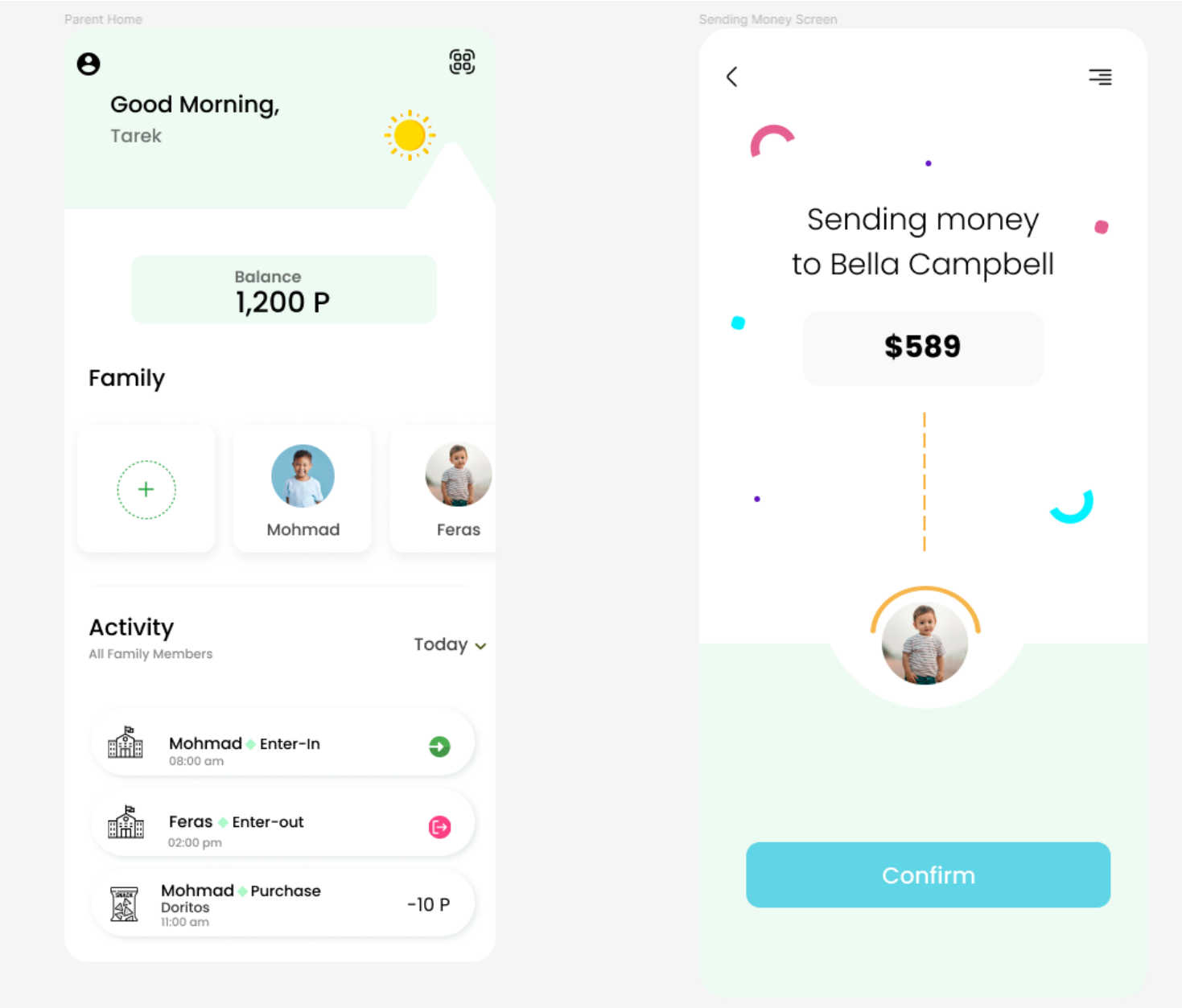
Home screen: the user can see amount of family balance, also the activities for all family members, also the user can add new family members.

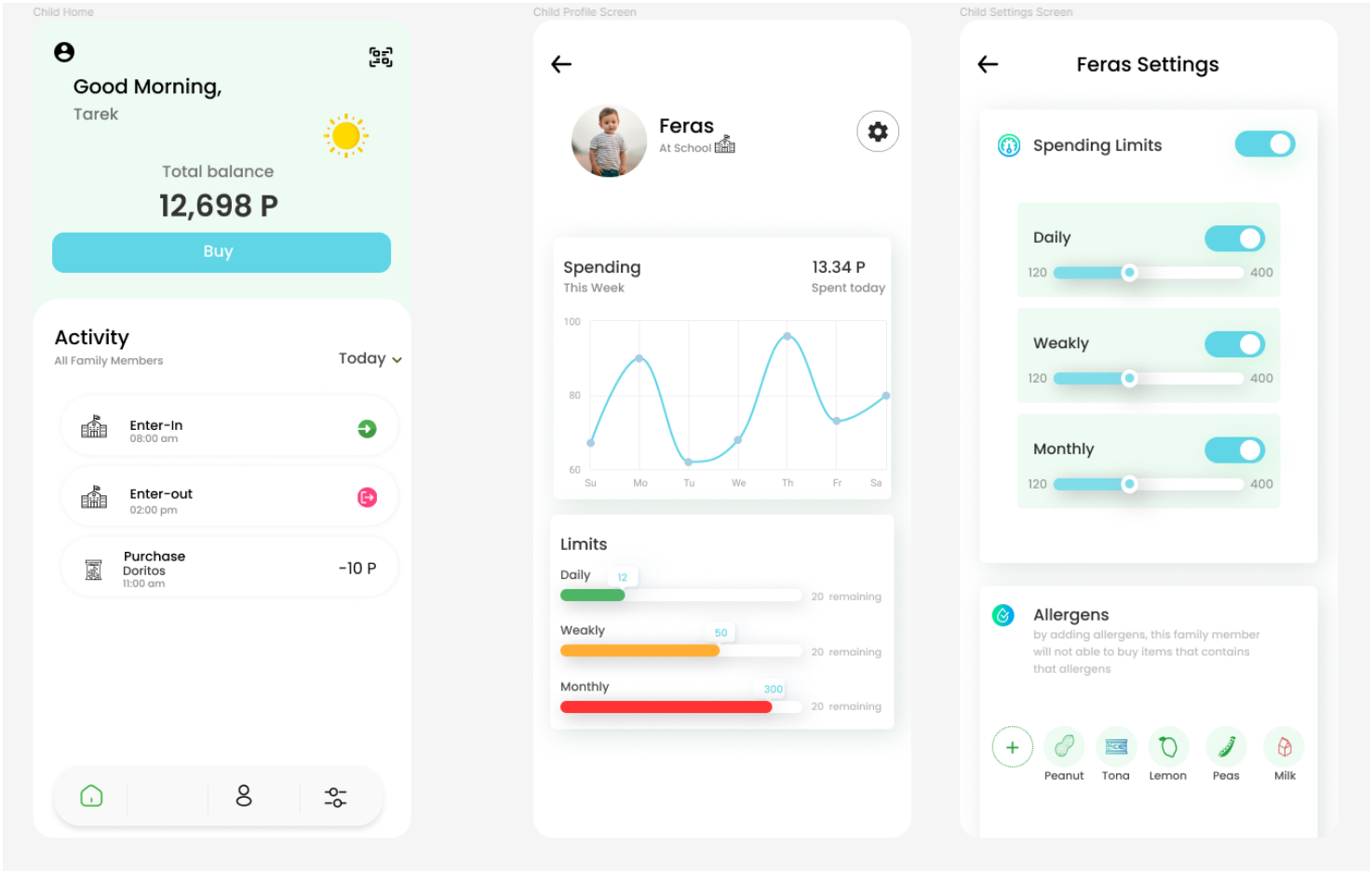
Child screen: the user can see the spending of his child during the week, also how much the child spends from his limits.

Home screen: the user can add limits to the child spendings, and also can add allergens.

Child home screen: the user can add points to the child, and also can see his activities.

6.2 Screen Images




Child Home
Good Morning,
Tarek
Total balance
12,698 P
Buy
Activity
All Family Members
Today
Enter-In
08:00 am
Enter-out
02:00 pm
Purchase
Doritos
11:00 am
-10 P
Child Profile Screen
Feras
At School
Spending
This Week
13.34 P
Spent today
100
80
60
Su
Mo
Tu
We
Th
Fr
Sa
Limits
Daily
12
20 remaining
Weakly
50
20 remaining
Monthly
300
20 remaining
Child Settings Screen
Feras Settings
Spending Limits
Daily
120
400
Weakly
120
400
Monthly
120
400
Allergens
by adding allergens, this family member will not able to buy items that contains that allergens
Peanut
Tona
Lemon
Peas
Milk

Home

Dashboard

Settings

Logout

Menu Category

search for food

Snack

Cold

Hot

Snack

Choose Order

Green Doritos
5.99 P

Nacho Doritos
5.99 P

Beasley Grill
2.99 P

Beasley Falafel
2.99 P

Bamba
3.99 P

Bamba Nougat
6.99 P

Order Menu

Nacho Doritos
5.99 P
x2
11.98 P

Bamba
3.99 P
x1
3.99 P

Charge 15.97 P

7. Requirements Matrix

Requirement	Which component meets the requirement
A way that identifies child, and also can make purchase in school with	RFID card
UI & UX	Using FIGMA
Parents interaction with the system	Building a phone application with the help of react-native
School cafeteria interface	Building Web-app with the help of react

8. Division Of Responsibilities Among Team Members

Wissam – Webapp , Nodejs , Mongodb
Tarik - Mobileapp , Nodejs , Mongodb