KIDCOIN

2024-2025

Software Process Modeling

Team Members:

- Bouthainh AlGarni | 2211249
- Dimah Aloufi | 2210094
- Joud Mozahem | 2212477
- Joud Bahkali | 2210859
- Shahad AlGhamdi | 2210076
- Israa Bamarouf | 2211682

Instructors:

- Dr. Latifah Alharthi
- Dr. Muna aldhurawi

KIDCOIN

Project Description

In today's challenging world, teaching children financial literacy is essential for their future success. Many families struggle with imparting these skills, leaving children unprepared for managing money as they grow older. This project aims to address this gap by creating an interactive app designed to teach children key financial concepts such as budgeting, saving, and responsible spending. Through engaging activities, and games. The app will provide a fun, age-appropriate learning experience, empowering children to develop essential money management skills early on.

We have chosen to adopt the Agile methodology for our project, and specifically, we will be utilizing the **Scrum** framework

Problem Definition

Children today often lack financial literacy, which is a vital skill for their future. Many families struggle to effectively teach money management, leaving children unprepared for financial responsibilities as they grow older

Proposed Solution

KidCoin, an interactive app designed for children can bridge this gap by teaching financial concepts through engaging activities, games, and real-life simulations. This app would empower children to learn budgeting, saving, and spending habits in a fun, age-appropriate way, helping them develop essential financial skills early on

Scope & Users

The app will target **children** aged between 9 to 14, offering a range of features designed to teach fundamental financial concepts like saving, budgeting, and smart spending. It will include interactive games and helpful features. **Parents** can monitor their child's progress and set goals to reinforce lessons. The app will focus on simplicity and fun, ensuring that complex financial ideas are presented in a way that is easy for children to understand and apply. This application is dedicated to Android Users

KIDCOIN

SPRINT #0

KIDCOIN

Task Allocation – Sprint #0

Student Name	Accomplished Tasks
Dimah Aloufi	Search for a project idea Write the Functional Requirements Review/correct other member's works Set up needed tools
Bouthainh AlGarni	Search for a project idea Write Project description/Problem definition/Proposed solution/Scope/Users Review/correct other member's works Set up needed tools
Israa Bamarouf	Search for a project idea Write the Non-Functional Requirements Review/correct other member's works Set up needed tools
Joud Muzahum	Search for a project idea Draw the Use Case diagram Review/correct other member's works Set up needed tools
Joud Bahkali	Search for a project idea Draw the Use Case diagram Review/correct other member's works Set up needed tools
Shahad Alghamdi	Search for a project idea Draw the Class Diagram Review/correct other member's works Set up needed tools

KIDCOIN

Functional Requirements for Sprint #0

Component Name: Parent Login
Story Name: User Authentication for Parents
Story Sequence No: 001
Story Short Description: Parents can log in to the app using their information
Story Long Description: Parents shall be able to log in to the app using their email and password via a dedicated login page, The system shall handle and authenticate the login information

---

Component Name: Child Registration
Story Name: Registering a New Child
Story Sequence No: 002
Story Short Description: Parents can register a new child
Story Long Description: Parents shall add a new child by entering the child's name, date of birth, and gender

---

Component Name: Unique ID Generation
Story Name: Automatic Child ID Generation
Story Sequence No: 003
Story Short Description: A unique ID is generated for each registered child
Story Long Description: The Backend system shall automatically generate a unique ID for each child upon successful registration by the parent.

Component Name: Child Login
Story Name: Login for Children
Story Sequence No: 004
Story Short Description: Children can log in using their unique ID
Story Long Description: Children shall log in to the app using the unique ID generated during their registration by the parent

Component Name: Budget List Generation
Story Name: Child Budget List Creation
Story Sequence No: 005
Story Short Description: Generate a budget list for children
Story Long Description: The system shall generate a budget list for each child, divided into predefined. spending categories: Food and Snacks, Entertainment, Needs, and Savings.

Component Name: Money Management
Story Name: Delete Child Spending Management
Story Sequence No: 006
Story Short Description: Children track their spending
Story Long Description: Children shall track their spending by selecting the appropriate category when making a purchase or spending within the app. The system shall handle and update the budget list accordingly.

Component Name: Space Game Access
Story Name: Accessing & Unlocking Levels in Space Game
Story Sequence No: 007
Story Short Description: Children access a Space Game
Story Long Description: Children shall access a Space Game within the app, where new levels unlock based on their progress in managing money. The system shall handle game access and level progression

---

Component Name: Money Management Tips
Story Name: Generating Money Management Tips
Story Sequence No: 008
Story Short Description: Provide tips for better money management
Story Long Description: The system shall generate helpful tips to encourage children to improve their money management skills and spend responsibly

---

Component Name: Reward Setup
Story Name: Parent Reward Setup
Story Sequence No: 009
Story Short Description: Parents set up rewards for their children
Story Long Description: Parents shall be able to set up to 5 rewards per child each month

Component Name: Reward Selection

Story Name: Child Reward Selection

Story Sequence No: 010

Story Short Description: Children select rewards each month

Story Long Description: Children shall be able to select one reward per month based on their progress

---

Component Name: Child Progress Report

Story Name: Viewing Child Progress Report

Story Sequence No: 011

Story Short Description: Parents can view a detailed progress report for each registered child

Story Long Description: Parents shall be able to view a detailed progress report for each registered child. The system shall handle and retrieve the child's progress data from the database and display it in a user-friendly format on the parent's dashboard

KIDCOIN

Non-Functional Requirements for Sprint #0

Component Name: **Security**
Story Name: Data Encryption and Privacy
Story Sequence No: **001**
Story Short Description: Secure storage and encryption of user data
Story Long Description: All user data, including login credentials, child information, and financial data, must be securely encrypted and stored. The system shall protect user privacy and prevent unauthorized access to sensitive information

---

Component Name: **Availability**
Story Name: Basic App Availability
Story Sequence No: **002**
Story Short Description: Keep the app available most of the time
Story Long Description: The app should be available for users most of the time, with occasional planned maintenance. Any downtime should be kept short to ensure users can access the app without long interruptions

---

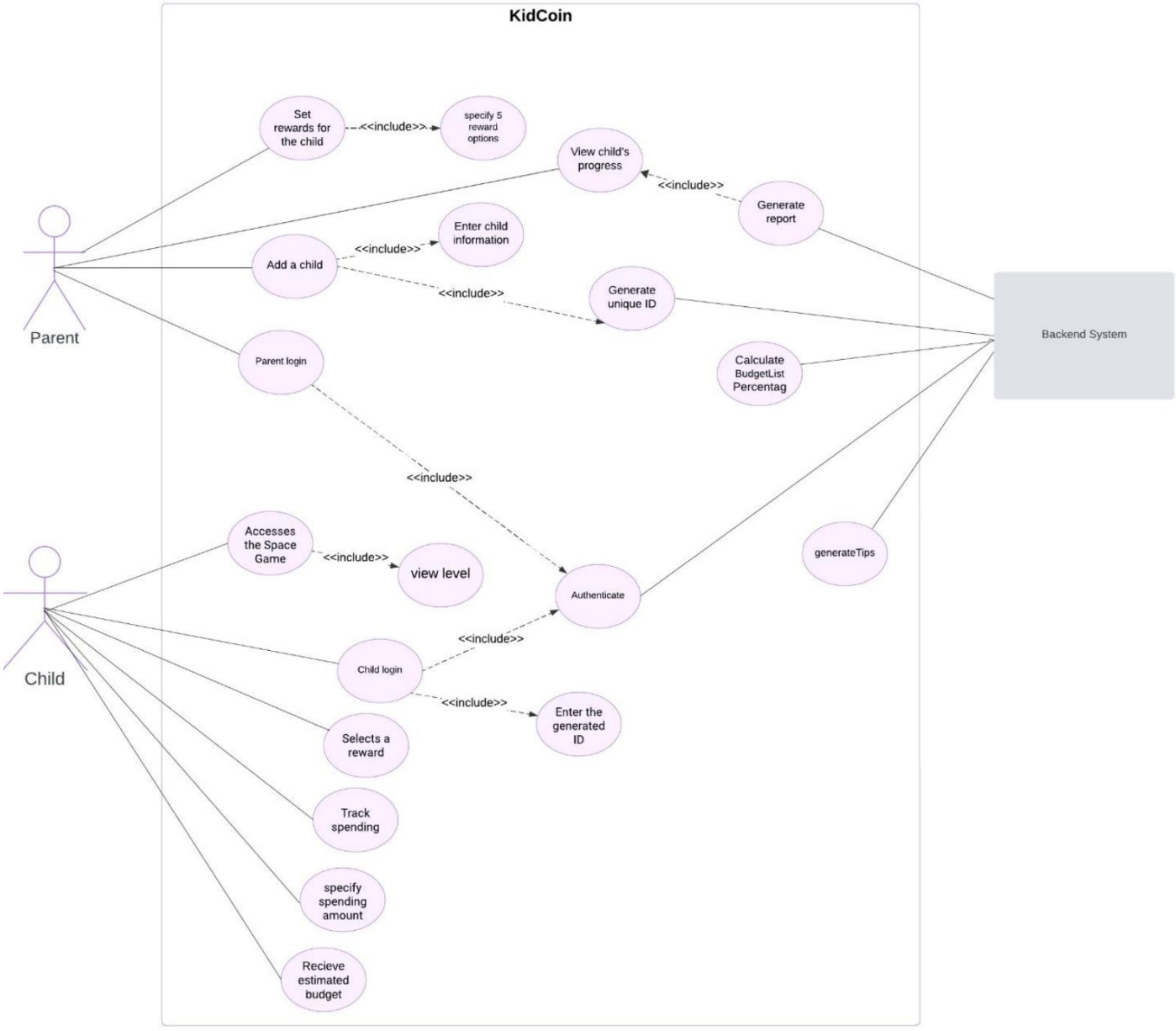
Component Name: **Performance**
Story Name: App Responsiveness
Story Sequence No: **003**
Story Short Description: Fast loading times for seamless user experience.
Story Long Description: The app shall be optimized for quick response times, ensuring a smooth and seamless experience for users, even during periods of high usage

Component Name: **Scalability**
Story Name: Software Scalability for Game Levels
Story Sequence No: **004**
Story Short Description: Scalable architecture for future game-level expansions
Story Long Description: The software architecture shall be designed to support easy scalability, allowing the system to accommodate higher levels in the kid's Space Game, as well as additional features, without affecting performance. This ensures that as children progress in their money management skills, new game levels can be added seamlessly.

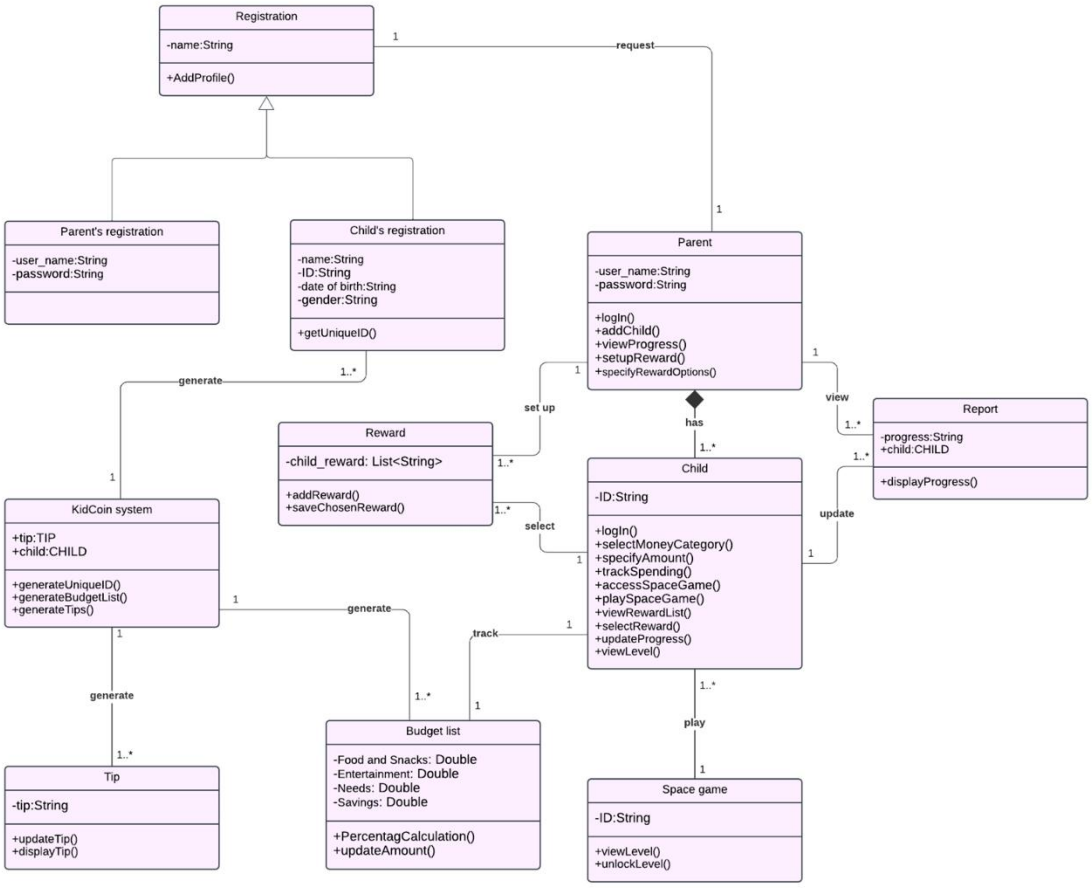
Component Name: **User Interface**
Story Name: User-Friendly Interface
Story Sequence No: **005**
Story Short Description: Intuitive and visually appealing interface
Story Long Description: The app shall provide an intuitive, easy-to-navigate interface that is visually appealing to both parents and children. This will promote user engagement and satisfaction.

Sprint #0 - Diagrams

1. Use Case



2. Class Diagram



KIDCOIN

SPRINT #1

KIDCOIN

Story Backlog – Sprint #1

Features made for Sprint #1

Component Name: Parent Sign Up
Story Name: User Registration for Parents
Story Sequence No: 001
Story Short Description: Parents can sign up using their email and password
Story Long Description: Parents shall be able to create an account in the app using their email address and a secure password via a dedicated registration page. The system shall validate the registration information and store it securely in the database, allowing parents to log in and access their account

---

Component Name: Parent Login
Story Name: User Authentication for Parents
Story Sequence No: 002
Story Short Description: Parents can log in to the app using their information
Story Long Description: Parents shall be able to log in to the app using their email and password via a dedicated login page, The system shall handle and authenticate the login information

---

Component Name: Child Registration
Story Name: Registering a New Child
Story Sequence No: 003
Story Short Description: Parents can register a new child
Story Long Description: Parents shall add a new child by entering the child's name, date of birth, and gender

---

Component Name: Unique Child ID Generation
Story Name: Automatic Child ID Generation
Story Sequence No: 004
Story Short Description: A unique ID is generated for each registered child
Story Long Description: The Backend system shall automatically generate a unique ID for each child upon successful registration by the parent.

Component Name: View Registered Children
Story Name: View All Registered Children
Story Sequence No: 005
Story Short Description: Parents can view all registered children
Story Long Description: Parents shall be able to view a list of all their registered children within the app. The list will display key information for each child, such as name, date of birth, a unique child ID, and gender

---

Component Name: Update Child Information
Story Name: Update Children's Information by Parents
Story Sequence No: 006
Story Short Description: Parents can update their children's information
Story Long Description: Parents shall be able to update their children's information through a dedicated form in the app. The system shall retrieve the current information for each child and allow parents to edit details such as name, date of birth, and gender. Upon submission, the updated information will be securely stored in the database

---

Component Name: Delete Child Information
Story Name: Delete Children's Information by Parents
Story Sequence No: 007
Story Short Description: Parents can delete their children's information
Story Long Description: Parents shall have the option to delete their children's information from the app. The system will retrieve each child's information and provide the option for parents to delete it. Upon confirmation, the system will permanently remove the child's record from the database.

Component Name: Budget List Generation
Story Name: Child Budget List Creation
Story Sequence No: 008
Story Short Description: Generate a budget list for children
Story Long Description: The system shall generate a budget list for each child, divided into predefined. spending categories: Food and Snacks, Entertainment, Needs, and Savings.

KIDCOIN

Prioritize stories and define sprints:

Sprint #1:

Component name	Priorities
1. Budget List Generation	High
2. Parent Sign Up	High
3. Parent Login	High
4. Child Registration	High
5. Unique Child ID Generation	High
6. View Registered Children	High
7. Update Child Information	Low
8. Delete Child Information	Low

Sprint #1 - Meeting(s)

Project Name: KidCoin

Project Members:

- Dimah Aloufi
- Bouthainh AlGarni
- Israa Bamarouf
- Joud Mozahem
- Joud Bahkali
- Shahad Alghamdi

Sprint #*1*: Stand up Meeting 1# [6/10/2024]

Sprint Duration: 2 Weeks

Scrum Master: Dimah

Client: Dr. Latifah Alharthi

Pair Programmers:

- Bouthainh AlGarni & Shahad Alghamdi
- Dimah Aloufi & Joud Bahkali
- Israa Bamarouf & Joud Mozahem

Sprint #*1*: Final Sprint Meeting #2 [8/10/2024]

Sprint Duration: 2 Weeks

Scrum Master: Dimah

Client: Dr. Latifah Alharthi

Pair Programmers:

- Bouthainh AlGarni & Shahad Alghamdi
- Dimah Aloufi & Joud Bahkali
- Israa Bamarouf & Joud Mozahem

Stories: **All stories for Sprint #1**

Component Name	Story Sequence Number	Use Cases (e.g., functionalities)
Budget List Generation	001	The system shall generate a budget list for each child
Parent Sign Up	002	Parents should be able to sign up using their email and password
Parent Login	003	Parents shall be able to log in to the app using their email and password
Child Registration	004	Parents shall be able to add a new child
Unique Child ID Generation	005	The backend system shall automatically generate a unique ID for each child
View Registered Children	006	Parents can view all registered children
Update Child Information	007	Parents can update their children's information
Delete Child Information	008	Parents can delete their children's information

Follow-up meeting questions

1. **What has been completed since the last meeting?**

   We solved Flutter and GitHub, Firebase Problems and we started writing the methods for each feature above, we also implemented these features to enhance the app's functionality and improve the user experience for parents managing their children's information

KIDCOIN

2. What are you going to be working on next?

Next, we will develop the Budget Management and Money Management features. This includes creating functionalities that allow parents to effectively manage their children's budgets, track spending, and provide money management tips. Our goal is to ensure that these features are user-friendly and provide valuable insights to parents in managing their children's financial literacy

---

3. Do you have any issues/impediments?

We are encountering challenges related to the various operating systems on the programmers' devices. These differences may require additional time and effort to ensure compatibility and smooth operation across the team’s development environments. Currently, we do not have any major issues or impediments, but we recognize that integrating the budget management features with Firebase will require careful attention to ensure data consistency and performance

Sprint #1 - Test Cases(s)

Sprint #1 Test Cases - [10/7/2024]

Test Case Name: Sprint 1 – Parent Sign Up

Test Case ID: KidCoin – Parent Sign Up

Test Case No.	Test Case Description	Expected Results	Outcome (Pass/Fail/Other (Comments))
TC001	User leaves the email and password fields blank and submits	The system should show a message: "Please fill in all field."	Pass
TC002	User enters a valid email but leaves the password field blank and submits	The system should show a message: "Please fill in all field."	Pass
TC003	User enters a valid password but leaves the email field blank and submits	The system should show a message: "Please fill in all field."	Pass
TC004	User enters a valid email, password, and a different confirm password, and submits	The system should show a message: "Passwords do not match."	Pass
TC005	User enters a valid email and matching password and confirm password and submits	The system should create the account, display a success message: "Sign Up successful!" and navigate to the Parent Login page	Pass
TC006	User enters a valid email and password, but the sign-up fails (e.g., email already in use)	The system should show a message: "Sign Up failed: [error message from Firebase]."	Pass
TC007	User clicks on "Already have an account? Log In" link.	The system should navigate back to the Parent Login page without any errors	Pass

Sprint #1 Test Cases - [10/7/2024]

Test Case Name: Sprint 1 – Parent Login

Test Case ID: KidCoin – Parent Login

Test Case No.	Test Case Description	Expected Results	Outcome (Pass/Fail/Other (Comments))
TC001	User leaves the email and password fields blank and submits	The system should show a message: “Please enter both email and password”	Pass
TC002	User enters a valid email but leaves the password field blank and submits	The system should show a message: “Please enter both email and password”	Pass
TC003	User enters a valid password but leaves the email field blank and submits	The system should show a message: “Please enter both email and password”	Pass
TC004	User enters valid credentials (existing email and password) and submits	The system should log the user in and display a success message: "Login successful!" and navigate to the Child Registration page	Pass
TC005	User enters valid email and incorrect password and submits	The system should show a message: "Login failed: [error message from Firebase]."	Pass
TC006	User clicks on "Don’t have an account? Sign Up" link	The system should navigate to the Sign-Up page without any errors	Pass
TC007	User enters valid email and password and waits for the login process to complete (e.g., network delay)	The system should still show the loading indicator and navigate appropriately once the login is successful	Pass
TC008	User interacts with the email and password fields (e.g., enters text, then clears it)	The system should correctly handle the changes in input and display the input fields without any errors	Pass

Sprint #1 Test Cases - [10/7/2024]

Test Case Name: Sprint 1 – Child Registration

Test Case ID: KidCoin – Child Registration

Test Case No.	Test Case Description	Expected Results	Outcome (Pass/Fail/Other (Comments))
TC001	User leaves all fields blank on registration screen	User should be shown a message "Please enter the child's name," "Please enter date of birth," "Please enter gender"	Pass
TC002	User tries to enter numbers or special characters in the name field (e.g., "123")	The user should be unable to input any numbers or special characters, as the input is restricted to alphabets only	Pass
TC003	User enters valid name and leaves date of birth field blank	The user should be shown a message "Please enter date of birth"	Pass
TC004	User enters a valid name and date of birth but does not select a gender	The user should be shown a message "Please select a gender"	Pass
TC005	User enters valid name, valid date of birth, and selects a gender	The form should successfully be submitted and saved, and a success message "Child saved successfully!" should be displayed	Pass

Sprint #1 Test Cases - [10/7/2024]

Test Case Name: Sprint 1 – Child Unique ID Generation

Test Case ID: KidCoin – Child Unique ID Generation

Test Case No.	Test Case Description	Expected Results	Outcome (Pass/Fail/Other (Comments))
TC001	Generate Unique ID for a new child	A unique ID of 6 characters (e.g., "AB123C") is generated successfully	Pass
TC002	Ensure Unique ID does not exceed specified length	Length of the generated ID should be exactly 6 characters	Pass
TC003	Check if Unique ID contains uppercase letters	The generated ID contains at least one uppercase letter	Pass
TC004	Validate uniqueness of Unique IDs generated from multiple requests	All generated IDs across multiple requests should be unique	Pass
TC005	Ensure Unique ID does not contain special characters	The generated ID does not include any special characters (e.g., @, #, $, %, etc.)	Pass

Sprint #1 Test Cases - [10/7/2024]

Test Case Name: Sprint 1 – View Registered Children

Test Case ID: KidCoin – View Registered Children

Test Case No.	Test Case Description	Expected Results	Outcome (Pass/Fail/Other (Comments))
TC001	User is logged in and has children registered	The list of children should be displayed correctly, showing their names, child IDs, date of birth	Pass
TC002	User has no children registered	A message should be displayed: "No children registered."	Pass
TC003	User clicks the delete button on a child	The child should be removed from the list, and a message "Child deleted" should appear	Pass
TC004	User clicks the update button for a child	The parent can enter a new child info and when clicking “Register a child” the new info will be registered	Pass
TC005	User with multiple children registered interacts with the UI	Each child in the list should be clickable, and the UI should handle multiple interactions (editing and deleting) smoothly without crashes or errors	Pass

Sprint #1 Test Cases - [10/7/2024]

Test Case Name: Sprint 1 – Update Child Information

Test Case ID: KidCoin – Update Child Information

Test Case No.	Test Case Description	Expected Results	Outcome (Pass/Fail/Other (Comments))
TC001	User opens the registration form for editing a child's information	The form should populate with the child's existing data (name, date of birth, Child ID)	Pass
TC002	User submits the form with valid updated information	The child information should be updated in Firestore, and a message "Child saved successfully!" should be displayed	Pass
TC003	User submits the form with a blank name field	The form should show an error message indicating "Please enter the child's name."	Pass
TC004	User submits the form with an invalid date format	The form should show an error message indicating "Invalid date format."	Pass
TC005	User opens the registration form for editing a child, but cancels	The form should close, and no changes should be saved	Pass

Sprint #1 Test Cases - [10/7/2024]

Test Case Name: Sprint 1 – Delete Child Information

Test Case ID: KidCoin – Delete Child Information

Test Case No.	Test Case Description	Expected Results	Outcome (Pass/Fail/Other (Comments))
TC001	User clicks the delete button for a child	Child info will be deleted successfully	Pass
TC002	User confirms the deletion of a child	The child should be removed from Fire store, and a message "Child deleted" should be displayed	Pass
TC003	User cancels the deletion of a child	The child should remain in the list, and no deletion message should be displayed	Pass
TC004	User refreshes the child list after deletion	The child list should update correctly, confirming the deletion by not showing the deleted child	Pass

Sprint #1 Test Cases - [10/7/2024]

Test Case Name: Sprint 1 – Child Budget List Creation

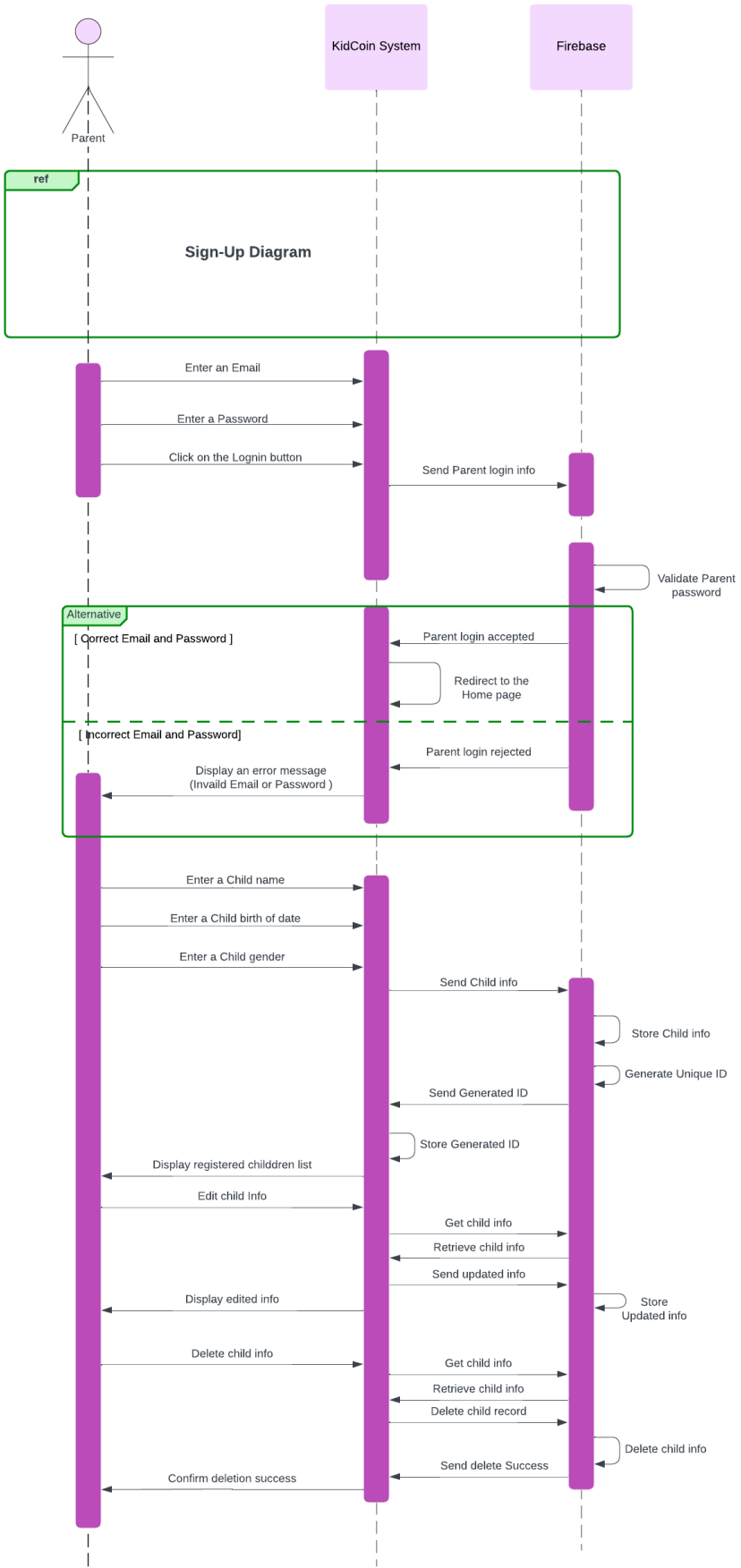
Test Case ID: KidCoin – Child Budget List Creation

Test Case No.	Test Case Description	Expected Results	Outcome (Pass/Fail/Other (Comments))
TC001	The system applies the specified categories on the given Budget	The system should divide the total amount into predefined categories: Food and Snacks (30%), Entertainment (20%), Needs (40%), and Savings (10%)	Pass
TC002	The system by default set the budget to 100$	For a total of 100, the categories should be: Food and Snacks = 30, Entertainment = 20, Needs = 40, Savings = 10	Pass

Sprint #1 - Diagrams

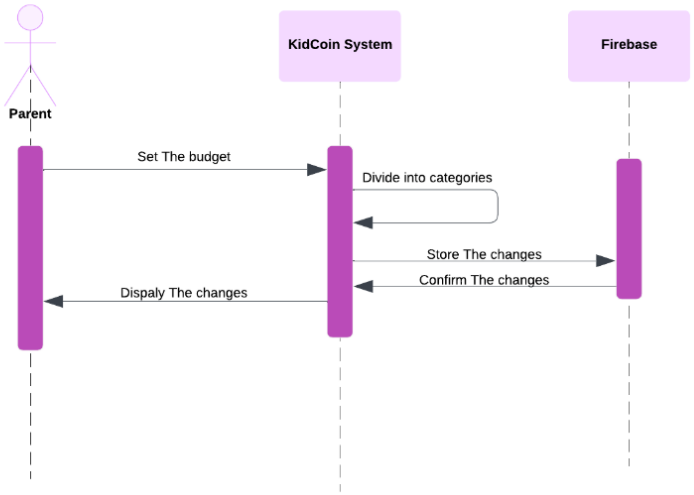
1. Parent Sign-Up Sequence Diagra

2. Parent Login & Register and Manage child Sequence Diagram

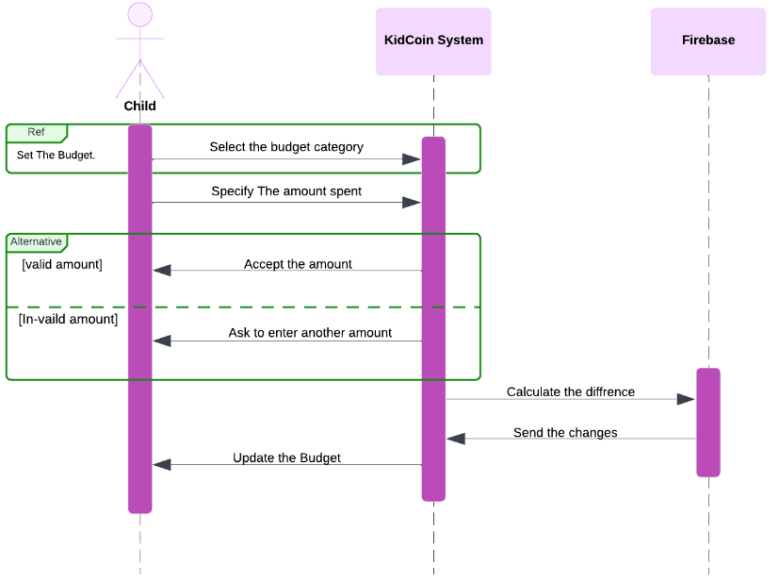


3. Budget Sequence Diagram

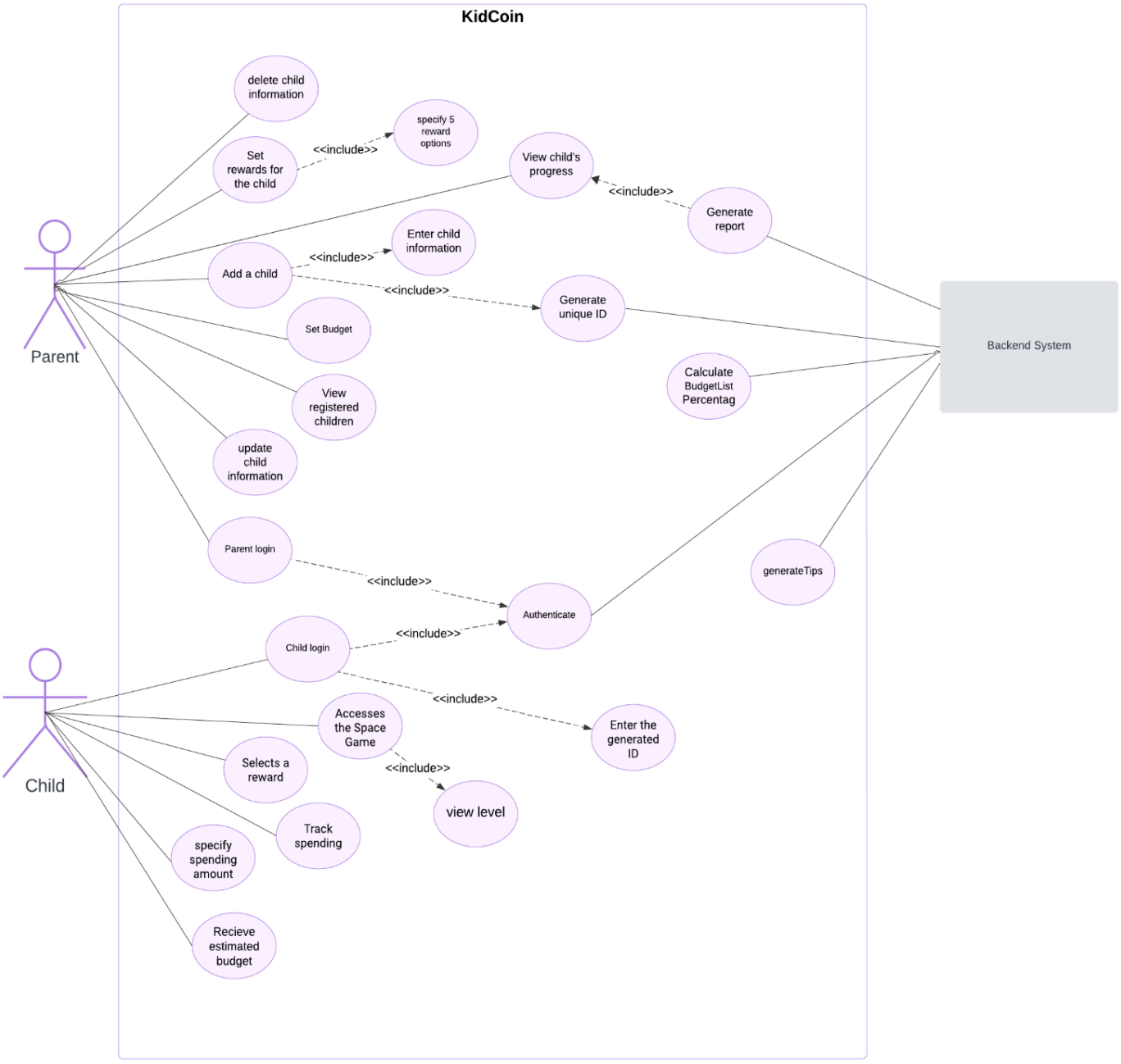
Set The Budget



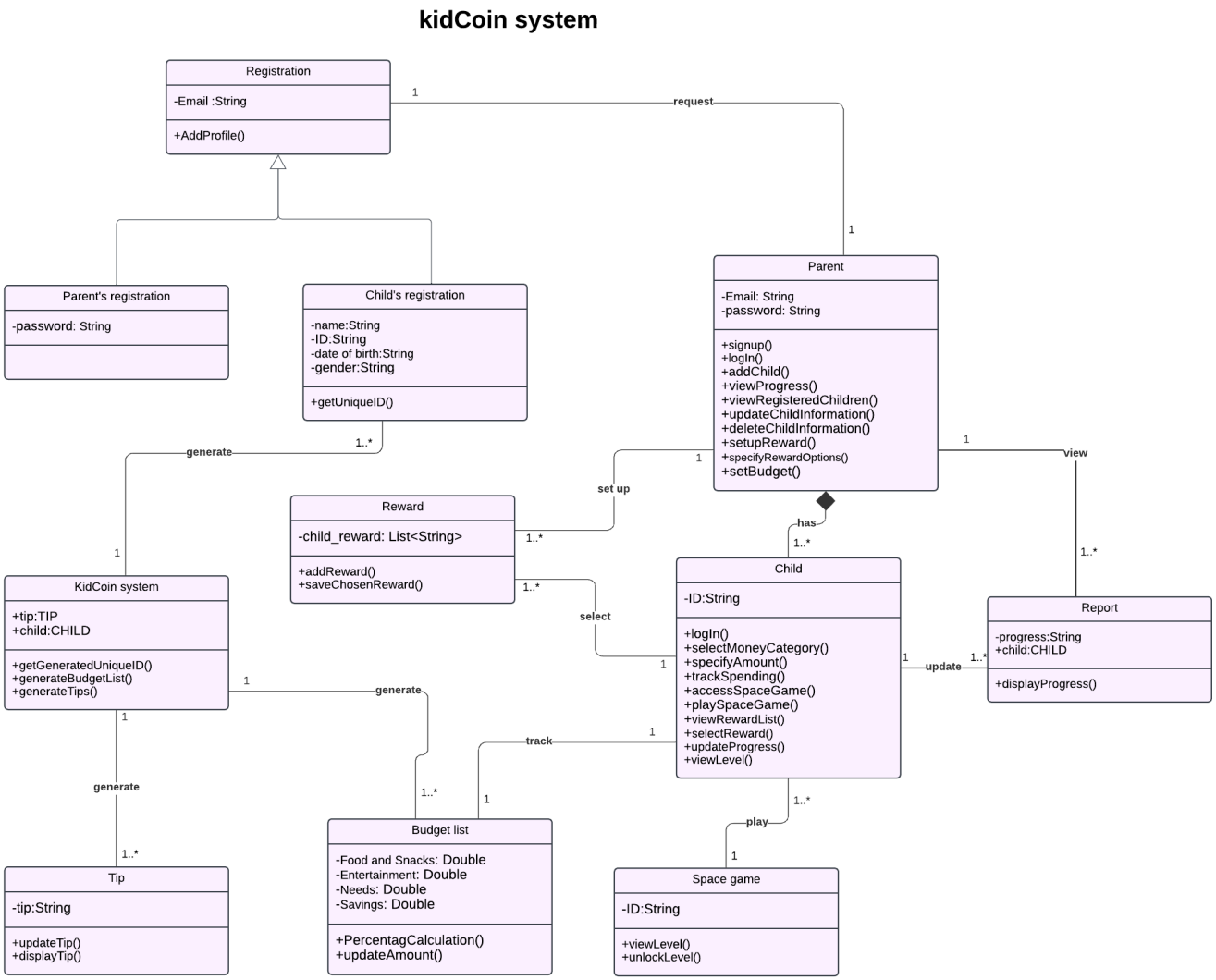
Spend end The Budget



4. Updated Use Case



5. Updated Class Diagram



KIDCOIN

SPRINT #2

Story Backlog – Sprint #2

Features made for Sprint #2

Component Name: Set Budget
Story Name: Setting up the Budget for the children
Story Sequence No: 009
Story Short Description: Parents can set the budget for the child, while registration
Story Long Description: In the "Set Budget" component, parents can assign a specific budget for each child during registration. This budget is linked to the child's profile, stored in firebase, and accessible on the child's profile page for tracking spending against the set limit. Parents can update the budget as needed to adjust financial goals over time

---

Component Name: Set Mood
Story Name: Setting up the budgeting mood for the children
Story Sequence No: 010
Story Short Description: Parents can set the budgeting mood for the child, while registration
Story Long Description: In the "Set Mood" component, parents can select a budgeting mood for each child during registration, such as "Captain Saver," "Captain Balanced," "Captain Funster," or "Captain Essential, "or "Captain Foodie." Each mood represents a unique budgeting approach, influencing how the child prioritizes spending across categories. The selected mood is saved to the child's profile and can be updated later to reflect evolving financial goals

---

Component Name: Child Login
Story Name: Login for Children
Story Sequence No: 011
Story Short Description: Children can log in using their unique ID
Story Long Description: Children shall log in to the app using a unique ID generated by the system during the registration process. This ID, visible only to the parent, provides secure access for the child and ensures a smooth, authenticated experience. The child simply enters the provided unique ID to access their own profile, minimizing friction and enhancing security. This process ensures that only authorized users gain access to the child's profile, allowing them to engage safely and independently within the app

Component Name: Money Management
Story Name: Child Spending Management
Story Sequence No: 012
Story Short Description: Children track their spending
Story Long Description: Children shall track their spending by selecting the appropriate category when making a purchase or spending within the app. The system shall handle and update the budget list accordingly

---

Component Name: Money Management Tips
Story Name: Generating Money Management Tips
Story Sequence No: 013
Story Short Description: Provide tips for better money management
Story Long Description: The system shall generate helpful tips to encourage children to improve their money management skills and spend responsibly

---

Prioritize stories and define sprints:

Sprint #2:

Component name	Priorities
1. Child login	High
2. Set Budget	High
3. Set Mood	High
4. Money Management	High
5. Money Management Tips	Low

Sprint #2 - Meeting(s)

Project Name*:* KidCoin

Project Members:

- Dimah Aloufi
- Bouthainh AlGarni
- Israa Bamarouf
- Joud Mozahem
- Joud Bahkali
- Shahad Alghamdi

Sprint #*2:* Stand up Meeting *1#* [26/10/2024]

Sprint Duration: 1 Week

Scrum Master: Shahad

Client: Dr. Latifah Alharthi

Pair Programmers:

- Bouthainh AlGarni & Shahad Alghamdi
- Dimah Aloufi & Joud Bahkali
- Israa Bamarouf & Joud Mozahem

Sprint #*2:* Final Sprint Meeting #2 [29/10/2024]

Sprint Duration: 1 Week

Scrum Master: Bouthainh

Client: Dr. Latifah Alharthi

Pair Programmers:

- Bouthainh AlGarni & Shahad Alghamdi
- Dimah Aloufi & Joud Bahkali
- Israa Bamarouf & Joud Mozahem

Stories: **All stories for Sprint #2**

Component Name	Story Sequence Number	Use Cases (e.g., functionalities)
Set Budget	009	Parents can set the budget for the child, while registration
Set Budgeting Mood	010	Parents can set the budgeting mood for the child, while registration
Child Login	011	Child can log into the app using the unique ID generated during their registration by the parent
Money Management	012	Children shall track their spending by selecting the appropriate category when making a purchase or spending within the app. The system shall handle and update the budget list accordingly
Money Management Tips	013	The system shall generate helpful tips to encourage children to improve their money management skills and spend responsibly

Follow-up meeting questions:

1. **What has been completed since the last meeting?**

   Since the last meeting, we have continued to develop the app by adding new features, thoroughly examining their functionality to ensure a seamless user experience, and implementing a child login to enhance engagement and drive the app's growth in alignment with our vision.

2. What are you going to be working on next?

Next, we will continue implementing more desired features while also starting the development of the space game. Additionally, we will focus on structuring the interfaces correctly to enhance usability and overall user experience.

---

3. Do you have any issues/impediments?

We welcome any challenge with passion and enthusiasm. Recently, we faced some difficulties displaying each child's budget due to the absence of a dedicated login page for kids. However, we successfully developed the child login feature, and we're happy to report that everything is now working as expected, ensuring smoother functionality throughout the system.

2. What are you going to be working on next?

Next, we will continue implementing more desired features while also starting the development of the space game. Additionally, we will focus on structuring the interfaces correctly to enhance usability and overall user experience.

---

3. Do you have any issues/impediments?

We welcome any challenge with passion and enthusiasm. Recently, we faced some difficulties displaying each child's budget due to the absence of a dedicated login page for kids. However, we successfully developed the child login feature, and we're happy to report that everything is now working as expected, ensuring smoother functionality throughout the system.

KIDCOIN

Task Allocation

Student Name	Accomplished Tasks	Hours Completed for Each Task
Dimah Aloufi	○ **Tips class** code ○ Creating/Test all test cases for **Tips class** code	○ **4 hours** for coding ○ **3 hours** for trying all the test cases
Bouthainh AlGarni	○ **Set Budget** Code ○ **Set Mood** code ○ Modeling a sequence diagram for **Set Budget** class ○ Creating/Test all test cases for **Set Budget** code	○ **8 hours** for coding ○ **1 hours** for modeling the sequence diagram ○ **1 hours** for trying all the test cases
Israa Bamarouf	○ **Child login** class code ○ Modeling a sequence diagram for **Child login** class	○ **6 hours** for coding ○ **2 hours** for modeling the sequence diagram
Joud Muzahum	○ **Child login** code ○ Creating/Test all test cases for **Child login** code	○ **6 hours** for coding ○ **3 hours** for trying all the test cases
Joud Bahkali	○ **Tips class** code ○ Modeling a sequence diagram for **Tips** class	○ **4 hours** for coding ○ **2 hours** for modeling the sequence diagram
Shahad Alghamdi	○ **Money Management** Code ○ **Set Mood** code ○ Modeling a sequence diagram for **Money Management** class ○ Creating/Test all test cases for **Money Management** code	○ **9 hours** for coding ○ **2 hours** for modeling the sequence diagram ○ **2 hours** for trying all the test cases

Sprint #2 - Test Cases(s)

Sprint #*1* Test Cases - [10/28/2024]

Test Case Name: Sprint #2 – Child Login

Test Case ID: KidCoin – Child Login

Test Case No.	Test Case Description	Expected Results	Outcome (Pass/Fail/Other (Comments))
TC001	Child enters the correct unique ID generated by the system during registration and clicks the login button	The child is successfully logged in, and the KidCoin budget dashboard is displayed (That includes welcoming the child and display of budget and categories)	Pass
TC002	Child enters an incorrect or non-existent unique ID and clicks the login button	An error message appears stating, "Incorrect unique ID" access is denied	Pass
TC003	Child leaves the unique ID field empty and clicks the login button	An error message appears “Please enter your unique ID” prompting the child to enter the unique ID	Pass

Sprint #2 Test Cases - [10/28/2024]

Test Case Name: Sprint #2 – Child Spending Management

Test Case ID: KidCoin – Money Management

Test Case No.	Test Case Description	Expected Results	Outcome (Pass / Fail / Other (Comments))
TC001	Child spends money from one of the categories and checks the total remaining budget	The app should show the updated total remaining budget based on the spending in each category	Pass
TC002	Child spends an amount exceeding the available balance in a category (e.g., trying to spend $50 on Food & Snacks)	The system should display an error message: “Insufficient funds in this category”	Pass
TC003	Child spends $0 in any category	The system should not update the amounts in any category and should display a message: “No spending amount entered”	Pass
TC004	Child attempts to spend a negative amount (e.g., -$10) in any category	The system should display an error message: “Amount cannot be negative”	Pass

Sprint #2 Test Cases - [10/28/2024]

Test Case Name: Sprint #2 –

Test Case ID: KidCoin – Set mood

Test Case No.	Test Case Description	Expected Results	Outcome (Pass / Fail / Other (Comments))
TC001	Parent selects the mood from one of the provided five moods	The system should assign a budget with the suitable percentage based on the selected mood	Pass
TC002	Parent selects "captain saver" mood and then changes it to "captain funster" mood	The system should recalculate the budget allocation according to the new mood	Pass
TC003	Parent leaves the mood selection blank and submits a total budget	The system should display an error message “please select a mood” prompt the parent to select a mood before proceeding with budget allocation	Pass

Sprint #2 Test Cases - [10/28/2024]

Test Case Name: Sprint #2 –

Test Case ID: KidCoin – Set budget

Test Case No.	Test Case Description	Expected Results	Outcome (Pass / Fail / Other (Comments))
TC001	Parent enters total amount and submits, ensuring the system calculates the correct amount for each category	System should divide the total correctly based on the chosen mood	Pass
TC002	Parent enters total amount of 0 for the child and submits	The system should display an error message" please enter valid budget"	Pass
TC003	Parent try's to enters a negative total amount (e.g., -50) for the child	The system allow only numbers	Pass
TC004	Parent leaves the total amount blank and submits	The system should display a message: "Please enter a budget"	Pass
TC005	Parent updates the total amount	The system should recalculate the categories based on the updated total amount	Pass
TC006	Parent enters an unusually large total amount (e.g., 1,000,000) for the child and submits	The system should handle large amounts correctly and divide them into categories	Pass

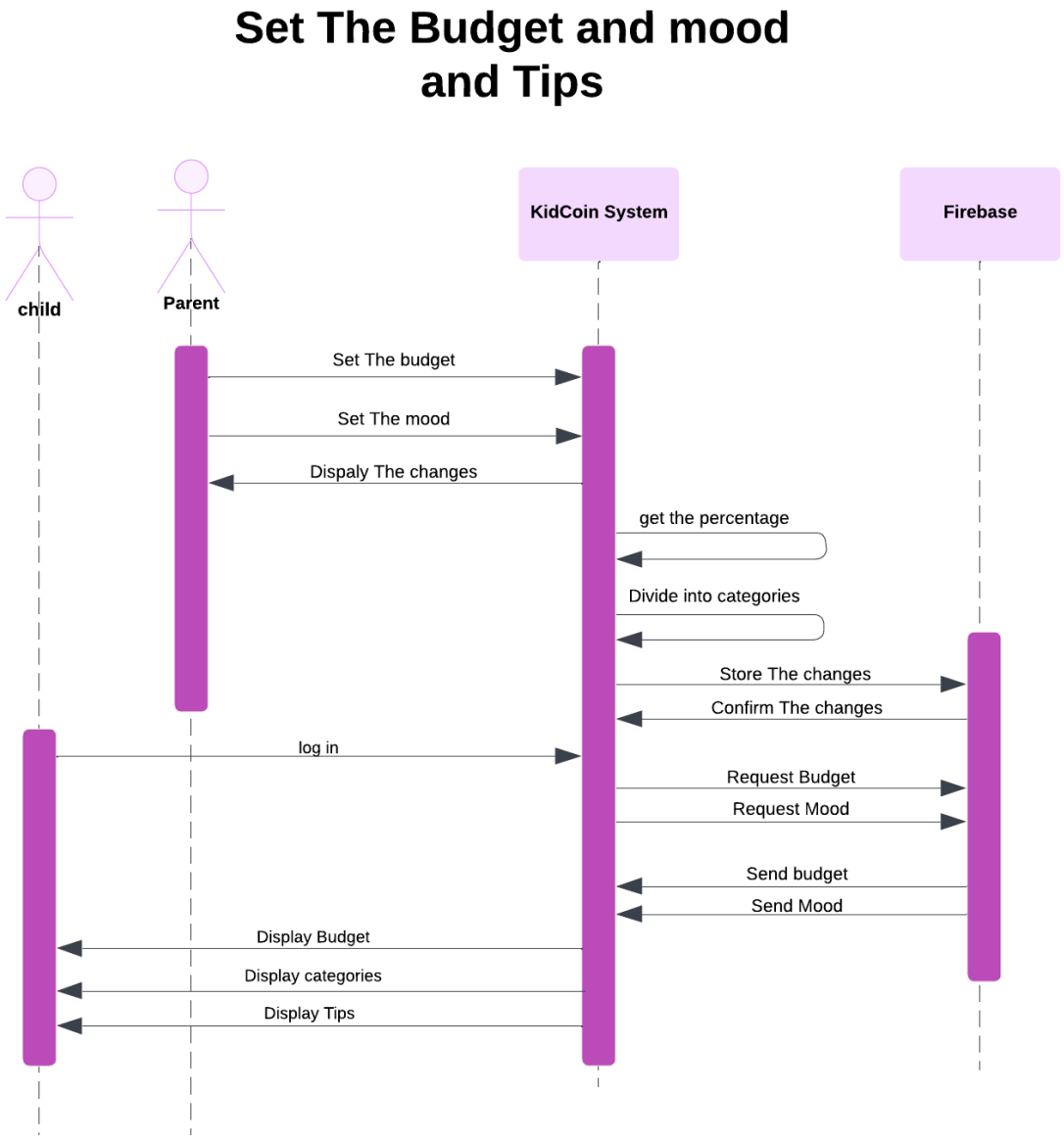
Sprint #2 Test Cases - [10/28/2024]

Test Case Name: Sprint #2 –

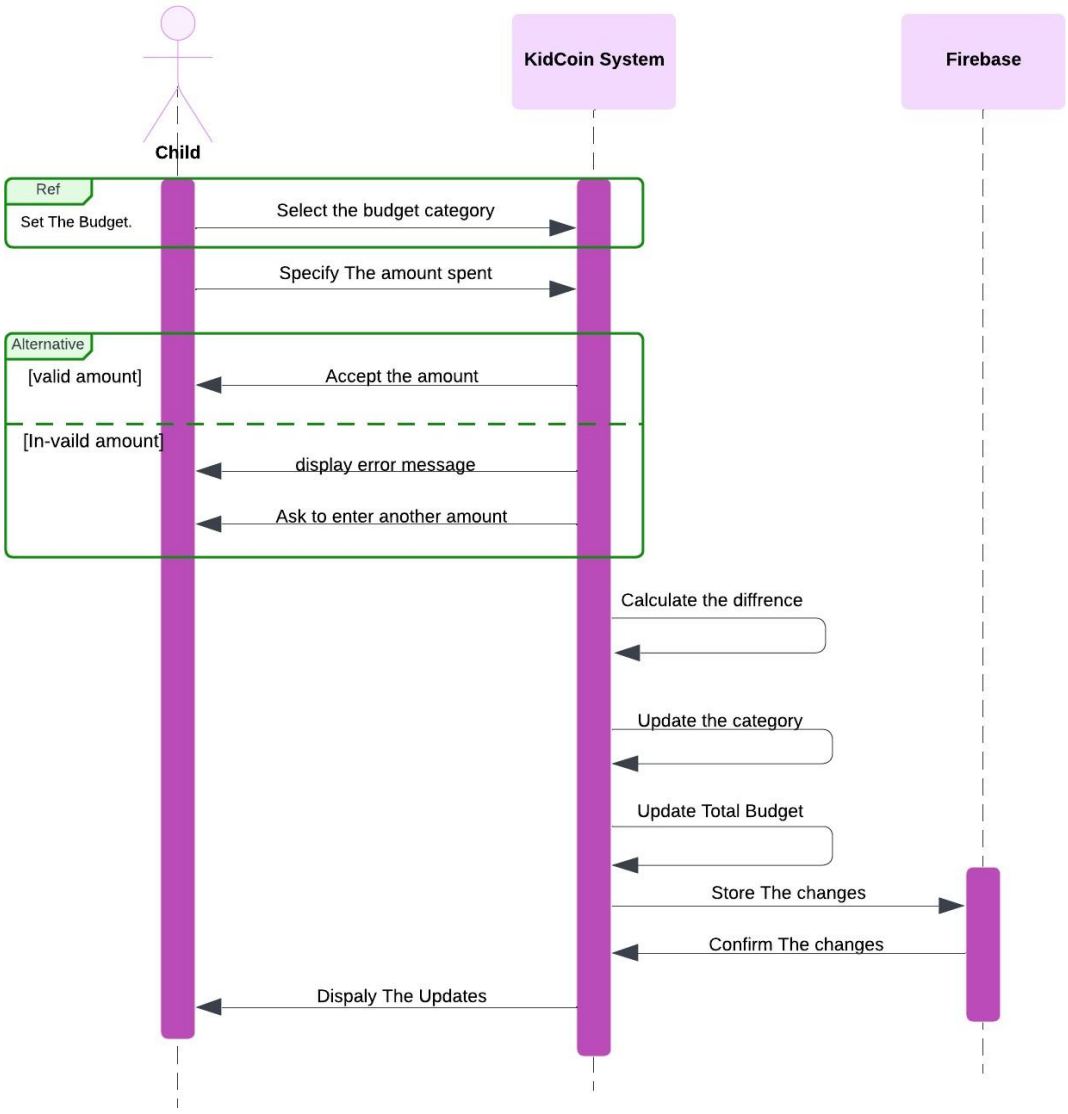
Test Case ID: KidCoin – Money Management Tips

Test Case No.	Test Case Description	Expected Results	Outcome (Pass / Fail / Other (Comments))
TC001	Generate a tip based on the selected mood and category	The system displays a relevant tip to the selected mood and category	Pass
TC002	Child views tips generated based on mood selection	Tips should use simple language and concepts understandable by children within the category's box	Pass
TC003	Verify mood update changes the displayed tips	Changing the mood updates the tip content appropriately based on the new mood selection	Pass
TC004	Ensure categories provide relevant tips for selected mood	Each category (e.g., Savings, Food & Snacks, Entertainment, Needs) displays tips relevant to the mood	Pass

Sprint #2 – Diagrams

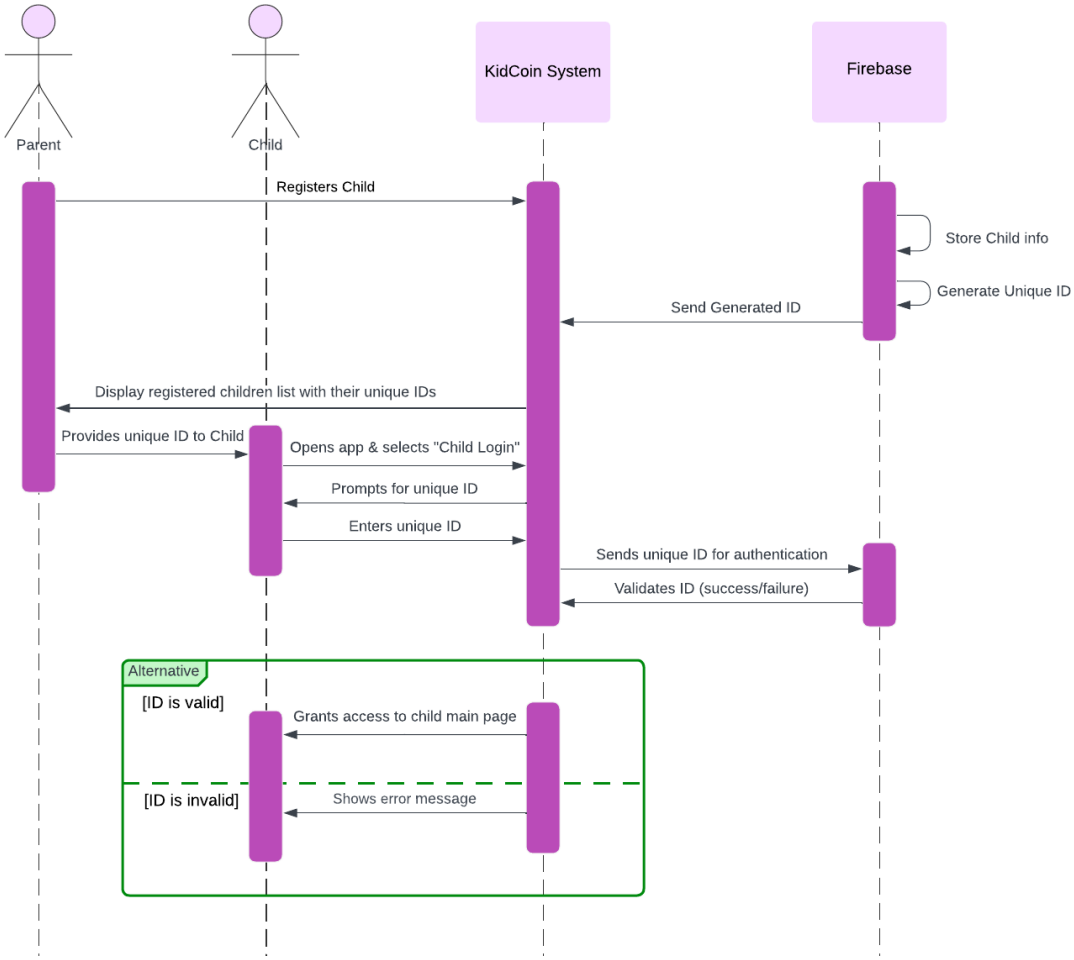


Spending The Budget



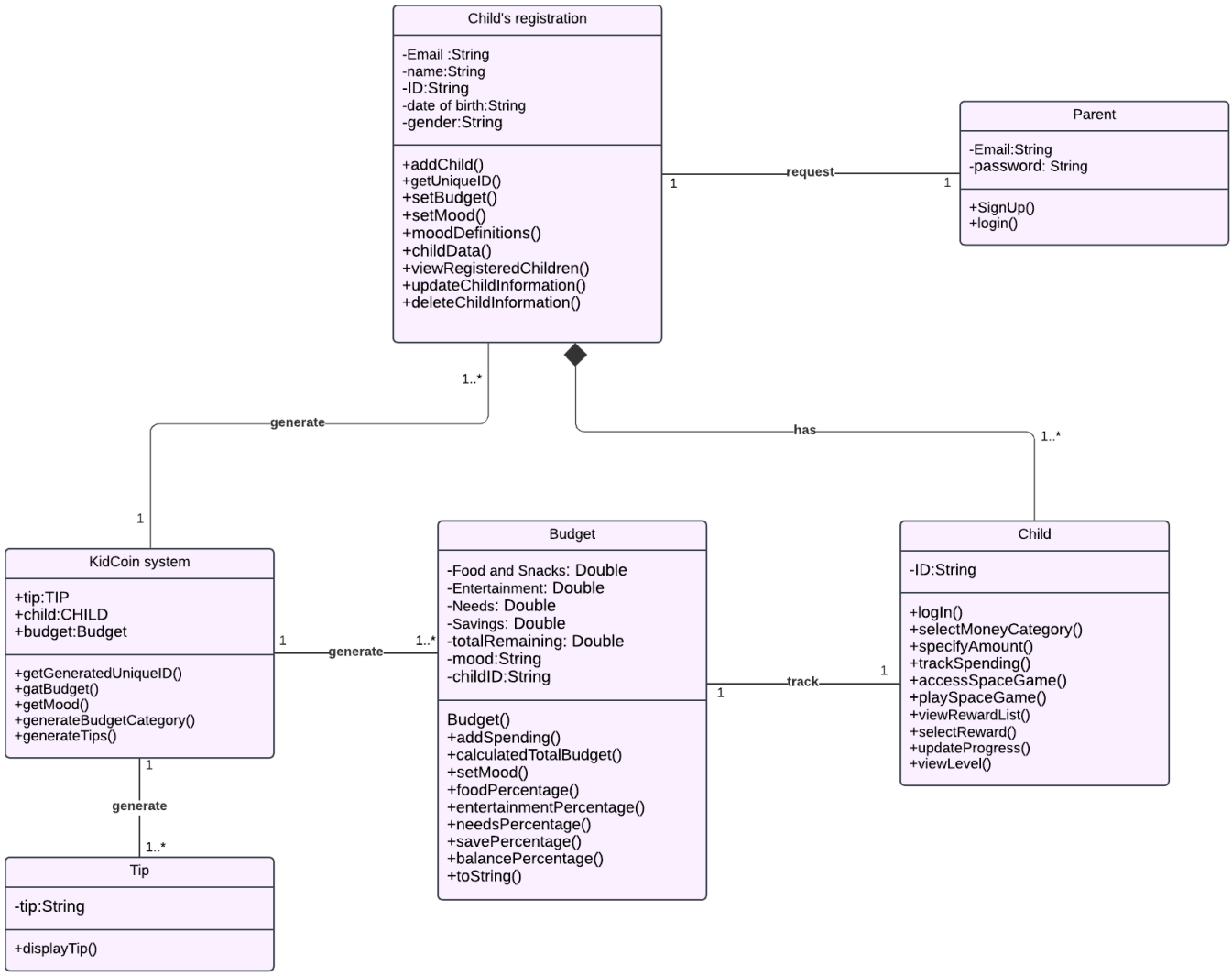
KIDCOIN

Child Log in

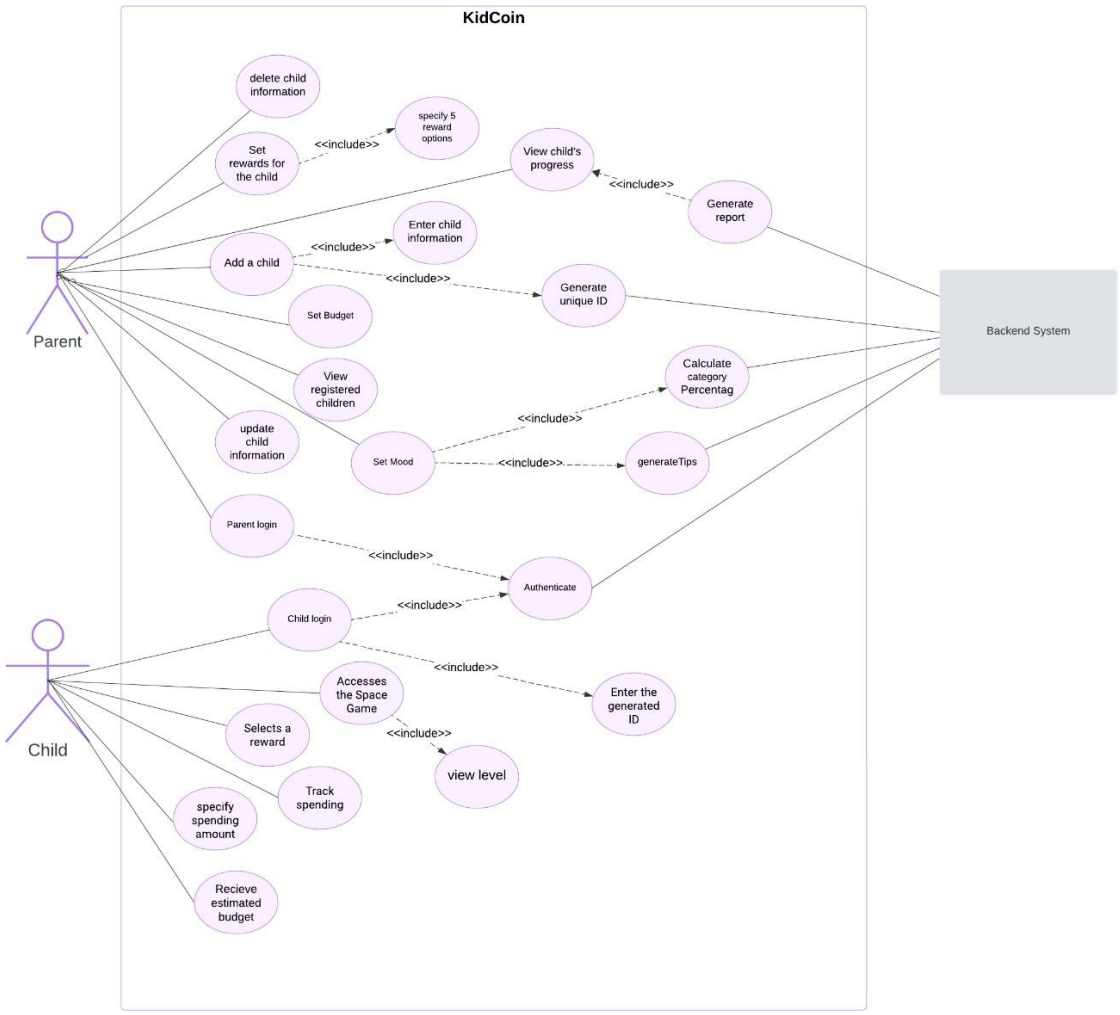


KIDCOIN

Class diagram



Use case diagram



KIDCOIN

SPRINT #3

Story Backlog – Sprint #3

Features made for Sprint #3

Component Name: **Reward Setup**
Story Name: Parent Reward Setup
Story Sequence No: **009**
Story Short Description: Parents set up rewards for their children
Story Long Description: Parents shall be able to set up to 5 rewards for each child.

---

component Name: **Reward Selection**
Story Name: Child Reward Selection
Story Sequence No: 010
Story Short Description: Children select rewards within the specified timeline.
Story Long Description: Children shall be able to select one reward within the specified timeline based on their progress.

Component Name: **Space Game Access**
Story Name: Accessing The Space Game
Story Sequence No: **007**
Story Short Description: Children access a Space Game
Story Long Description: Children will access an interactive Space Game through the app, with the system managing game access and ensuring a smooth, secure experience on the external game website.

Component Name: **Child Progress Report**
Story Name: Viewing Child Progress Report
Story Sequence No: **011**
Story Short Description: Parents can view a detailed progress report for each registered child.
Story Long Description: Parents shall be able to view a detailed progress report for each registered child. The system shall handle and retrieve the child's progress data from the database and display it in a user-friendly format on the parent's dashboard.

Component Name: **Security**
Story Name: Data Encryption and Privacy
Story Sequence No: **001**
Story Short Description: Secure storage and encryption of user data
Story Long Description: All user data, including login credentials, child information, and financial data, must be securely encrypted and stored. The system shall protect user privacy and prevent unauthorized access to sensitive information

---

Component Name: **Availability**
Story Name: Basic App Availability
Story Sequence No: **002**
Story Short Description: Keep the app available most of the time
Story Long Description: The app should be available for users most of the time, with occasional planned maintenance. Any downtime should be kept short to ensure users can access the app without long interruptions

---

Component Name: **Performance**
Story Name: App Responsiveness
Story Sequence No: **003**
Story Short Description: Fast loading times for seamless user experience.
Story Long Description: The app shall be optimized for quick response times, ensuring a smooth and seamless experience for users, even during periods of high usage

---

Prioritize stories and define sprints:

Sprint #3:

Component name	Priorities
1. **Reward Setup**	High
2. **Reward Selection**	High
3. **Child Progress Report**	High
4. **Space Game Access**	High
5. **Security**	High
6. **Availability**	Medium
7. **Performance**	Medium

Sprint #3 - Meeting(s)

Project Name: KidCoin

Project Members:

- Dimah Aloufi
- Bouthainh AlGarni
- Israa Bamarouf
- Joud Mozahem
- Joud Bahkali
- Shahad Alghamdi

Sprint #3: Stand up Meeting 1# [10/11/2024]

Sprint Duration: 1 Week

Scrum Master: Shahad

Client: Dr. Latifah Alharthi

Pair Programmers:

- Bouthainh AlGarni & Shahad Alghamdi
- Dimah Aloufi & Joud Bahkali
- Israa Bamarouf & Joud Mozahem

Sprint #3: Final Sprint Meeting #2 [17/11/2024]

Sprint Duration: 1 Week

Scrum Master: Bouthainh

Client: Dr. Latifah Alharthi

Pair Programmers:

- Joud Bahkali & Shahad Alghamdi
- Dimah Aloufi & Bouthainh AlGarni
- Israa Bamarouf & Joud Mozahem

Stories: **All stories for Sprint #3**

Component Name	Story Sequence Number	Use Cases (e.g., functionalities)
Reward Setup	009	Parents shall be able to set up to 5 rewards for each child.
Reward Selection	010	Children shall be able to select one reward within the specified timeline based on their progress
Child Progress Report	011	Parents shall be able to view a detailed progress report for each registered child.
Space Game Access	007	Children shall be able to access the Space Game through the app, to the external game website.
Security	001	All user data, including login credentials, child information, and financial data, must be securely encrypted and stored. The system shall protect user privacy and prevent unauthorized access to sensitive information.
Availability	002	The app should be available for users most of the time, with occasional planned maintenance. Any downtime should be kept short to ensure users can access the app without long interruptions.
Performance	003	The app shall be optimized for quick response times, ensuring a smooth and seamless experience for users, even during periods of high usage.

KIDCOIN

Follow-up meeting questions:

1. **What has been completed since the last meeting?**

Since our last meeting, we have concentrated on upgrading the app by including features that provide a smooth and engaging user experience. We have made improvements in the app interfaces for it to be more understandable and visually attractive. Additionally, we incorporated Space Game into this to spark interest and attract young users. Alongside the rewards feature which stimulates interaction while maintaining lasting curiosity, these changes are done following our aim for the growth of this application.

2. **What are you going to be working on next?**

Moving forward, we plan to invest our time and resources to develop the app to bring it into the real world. We aspire to develop a valuable tool which will serve young, intelligent learners all over the world in an effective manner.

---

3. **Do you have any issues/impediments?**

We face each challenge with a strong commitment and enthusiasm. Recently, we encountered difficulties in developing the Space Game, as it required significant effort and resources. Additionally, implementing smooth interfaces was made harder by the lack of available tools and a tight timeline. However, we successfully overcame these obstacles and are pleased to report that all features are now functioning as expected, ensuring a more streamlined and effective user experience.

KIDCOIN

Tasks Allocation

Student Name	Accomplished Tasks	Hours Completed for Each Task
Dimah Aloufi	○ Reward Selection Code ○ Storing Selected Reward in Firebase ○ Reward Selection Test Case	○ Coding: 9 Hours ○ Test Case: 2 Hours
Bouthainh AlGarni	○ Space GAME Code ○ Update Budget & Child Page Code ○ Update Firebase and add new variables. ○ Draw the Access Game Sequence Diagram ○ Update the needed Diagrams	○ Coding: 5 Days ○ Drawing: 3 Hours
Israa Bamarouf	○ Resolved Child Progress Report code errors. ○ Documented and created needed diagram. ○ Created Progress Report & Space Game Test Cases	○ Coding: 4 Hours ○ Documenting 4 Hours ○ Test Case: 3 Hours
Joud Mozahem	○ Progress report code ○ parents main page code ○ child list code	○ Coding : 2 days ○ Test case : 2 hours
Joud Bahkali	○ UI: Design the interface (home screen – parent login page – parent main screen – sign up page) ○ Code the UI ○ Test the UI	○ Coding : 2days
Shahad Alghamdi	○ Reward Setting Code ○ Reward Setup Test Case ○ Create and update sequence diagrams ○ Modify on interfaces (child main page – reward selection page)	○ Coding : 3 days ○ Documenting : 2 hours ○ Test case : 2 hours ○ Diagrams : 8 hours

Sprint #3 - Test Cases(s)

Sprint #3 Test Cases - [11/12/2024]

Test Case Name: Sprint #3 – Reward Setup for the Child

Test Case ID: KidCoin – Reward Setup

Test Case No.	Test Case Description	Expected Results	Outcome (Pass/Fail/Other (Comments))
TC001	Parent Add multiple rewards (up to the limit of 5) and check for correct storage and display	All rewards should be stored in the array, and displayed correctly in separate boxes, and no error should occur until the 5th reward is added	Pass
TC002	Parents attempted to add a 6th reward when the limit of 5 has been reached	The system should not allow more than 5 rewards	Pass
TC003	Parent attempted to submit the form without setting any reward	The system should display an error message or notification prompting the user to add at least one reward before submitting	Pass

Sprint #3 Test Cases - [11/13/2024]

Test Case Name: Sprint #3 – Reward Selection for the Child

Test Case ID: KidCoin – Reward Selection

Test Case No.	Test Case Description	Expected Results	Outcome (Pass/Fail/Other (Comments))
TC001	Child selects a reward from the list of available rewards	The app should highlight the selected reward by changing its box color to green and display a confirmation message	Pass
TC002	Child selects "Reward 1" and then selects a different reward	The app should update the reward color, showing the newly selected reward with a green box and removing the selection from the previously selected reward	Pass
TC003	Child selects a reward, and the system updates Firestore with the selected reward	The app should successfully update the selected reward in Firestore, and the app should show a confirmation message such as "Reward selected successfully."	Pass
TC004	Child selects a reward and then navigates back to the child main page screen	The app should retain the previously selected reward and keep it highlighted (green)	Pass
TC005	Child selects a reward, and then the connection to Firestore fails (simulate an error)	The system should display an error messag such as "Failed to select reward," and no changes should be made in Firestore	Pass

Sprint #3 Test Cases - [11/16/2024]

Test Case Name: Sprint #3 – Child Progress Report

Test Case ID: KidCoin – Child Progress Report

Test Case No.	Test Case Description	Expected Results	Outcome (Pass/Fail/Other (Comments))
TC001	Parent can log in successfully and access the main dashboard options	The app should display two options (Register a child, View children list, sign up, sign in) successfully	Pass
TC002	Parent can view a list of registered children, which the system retrieves correctly	The app should retrieve the names and mood statuses of the children from Firebase and display them in an ordered format	Pass
TC003	Parent can select a child to view their accurate budget dashboard	The app should query Firebase for the child's budget information so it can display it correctly on the parent's dashboard	Pass
TC004	Parent view children list but no children are registered	The app should display "No children registered" message	Pass
TC005	Parents can easily check their child's progress report dashboard, which allows for fast data retrieval and display	The app should fully load and display the report within an acceptable time frame of 2-3 seconds	Pass

Sprint #3 Test Cases - [11/17/2024]

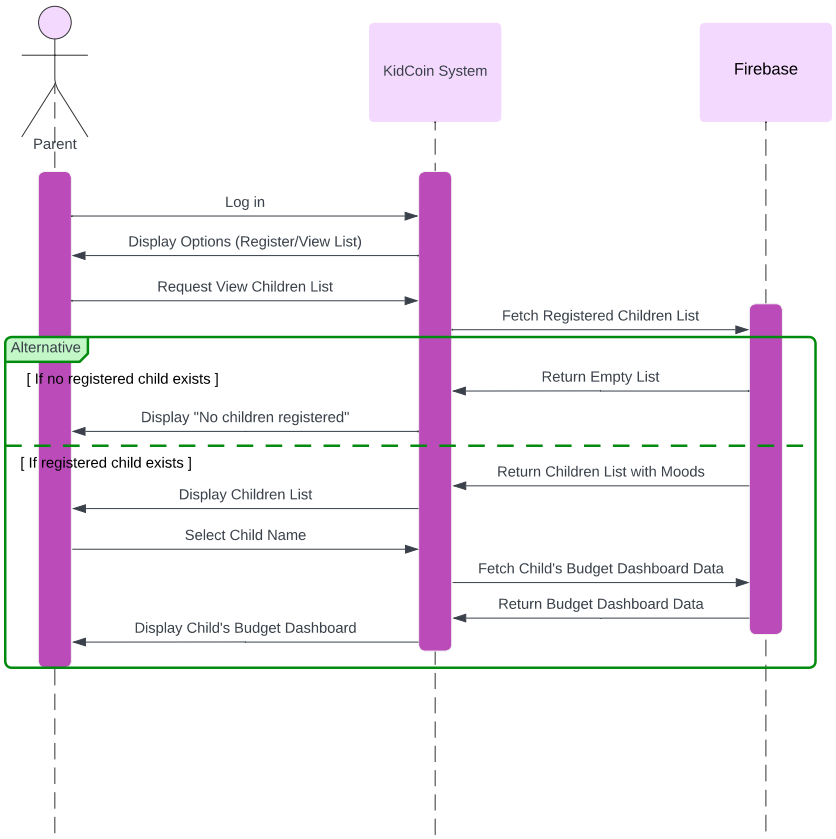
Test Case Name: Sprint #3 – Space Game Access for the Child

Test Case ID: KidCoin – Space Game Access

Test Case No.	Test Case Description	Expected Results	Outcome (Pass/Fail/Other (Comments))
TC001	Child can click on the "Play INTO SPACE!" button to start entering game.	The app will likely show a dialog box with this message: "You are amazing and you deserve to have fun! Do you want to play INTO SPACE?" Two buttons are displayed: "Yes" and "No."	Pass
TC002	Child can select "Yes" in the dialog to proceed into the game.	The app redirects the child to the designated game webpage, allowing them to begin playing the "Into Space" game	Pass
TC003	Child can select "No" on the message box to remain on the present screen.	The app closes the message and allow child to stay on budget dashboard screen	Pass
TC004	Child can see the dialog showing up quickly when "Play INTO SPACE!" button is pressed.	The app must show this dialog within half of one second after pressing the button for an effective user interaction experience	Pass
TC005	Child can safely navigate to the external game page when they click on "Yes" in dialog button	The system must direct the child to a secure HTTPS URL from list of trusted websites that is already defined to ensure safety	Pass

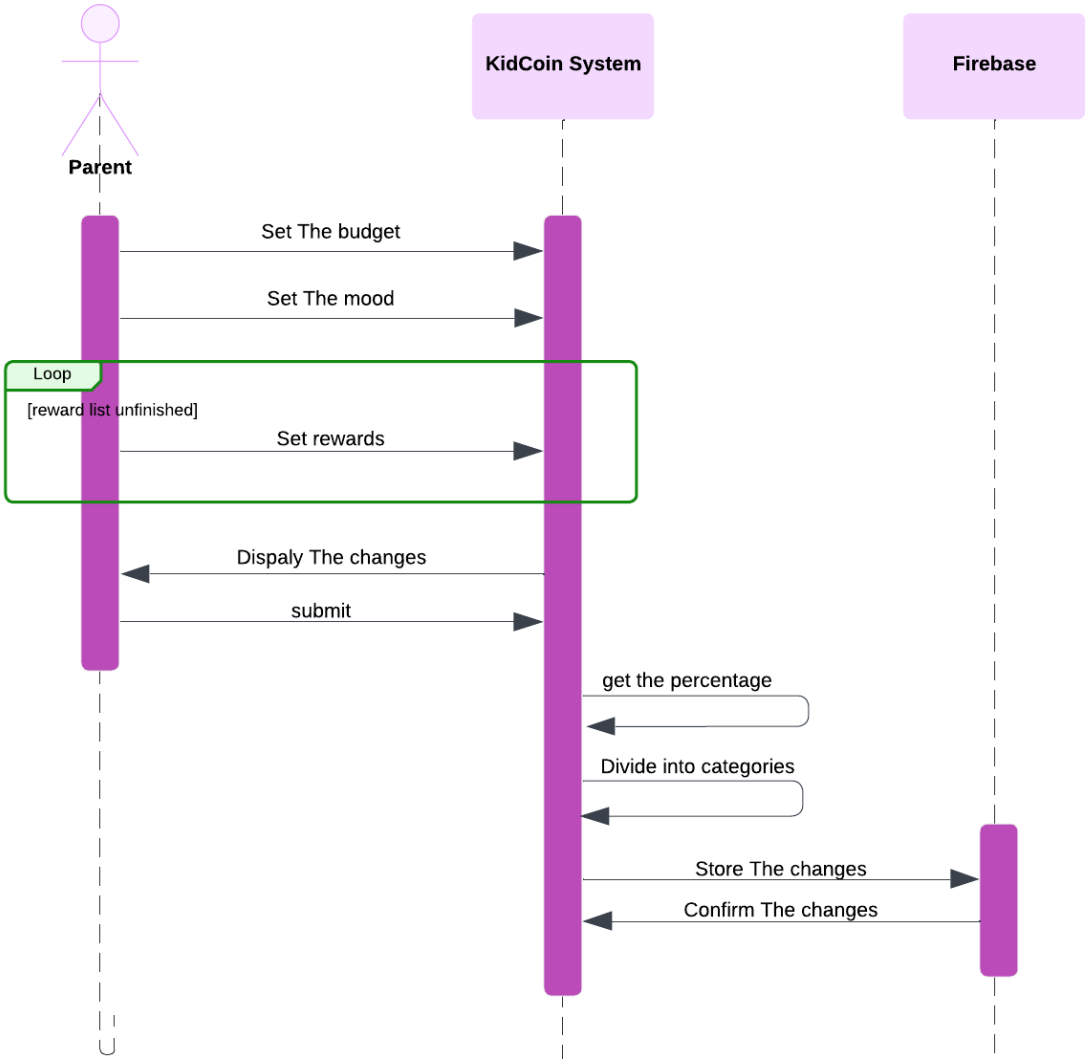
Sprint #3 – Diagrams

Child Progress Report Diagram



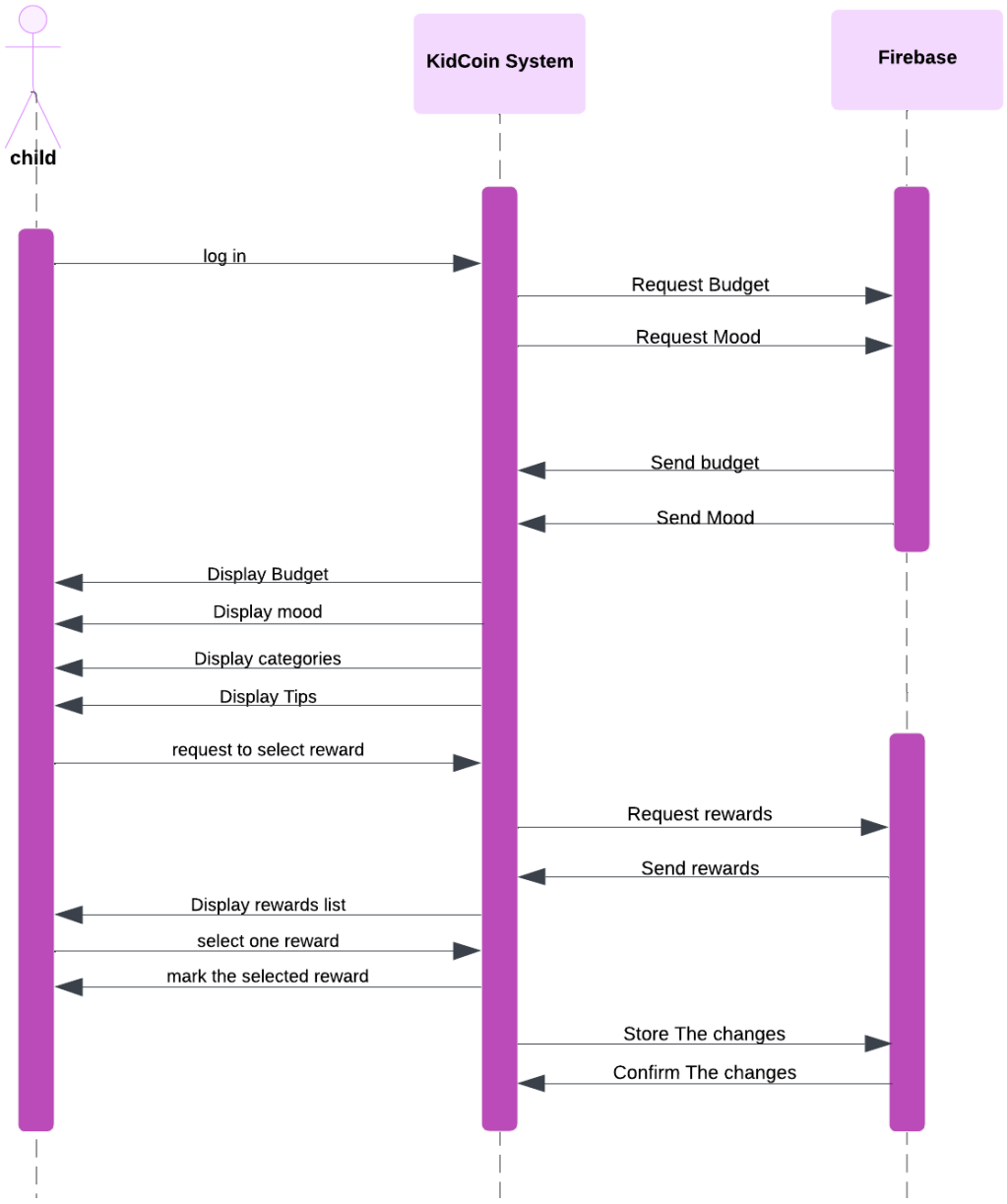
KIDCOIN

Reward Setup diagram

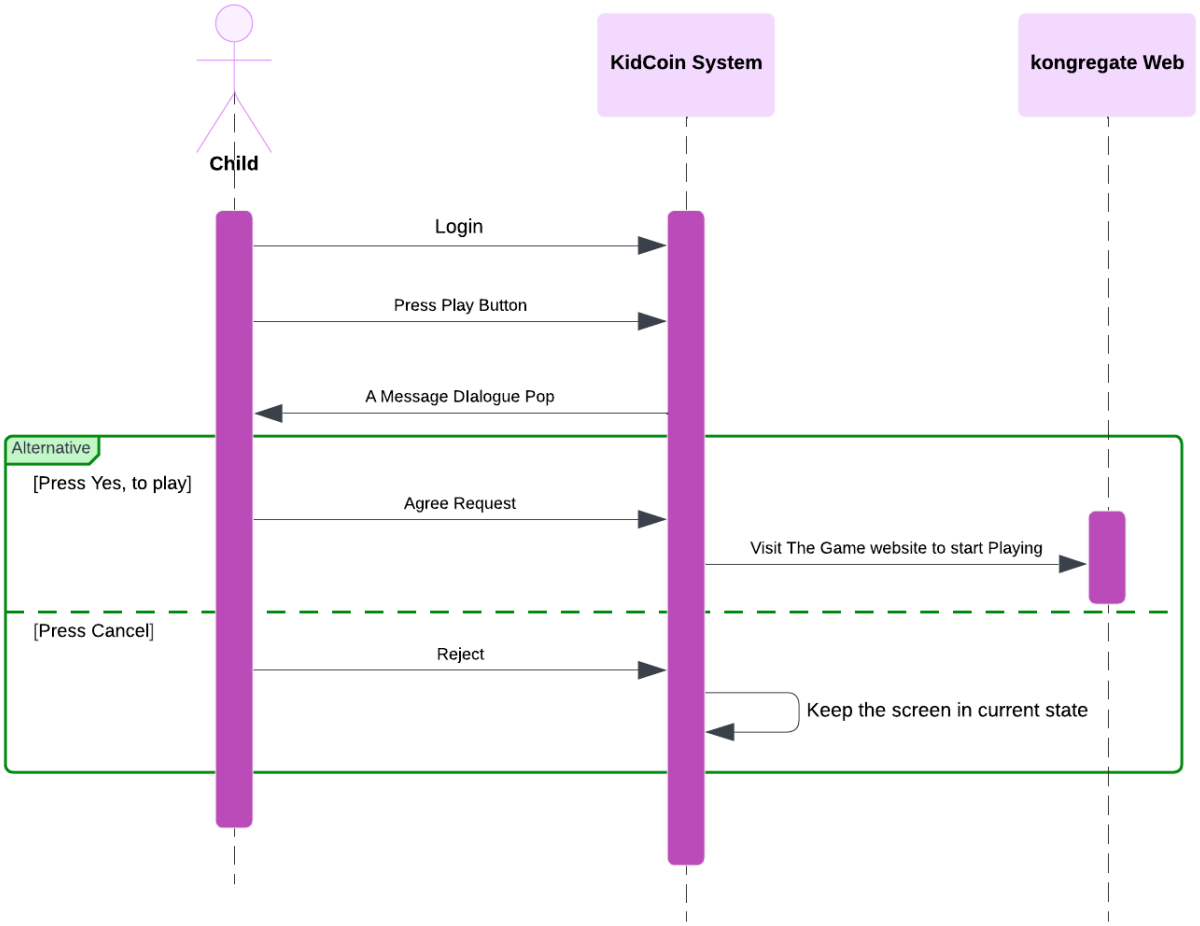


KIDCOIN

Reward selection diagram

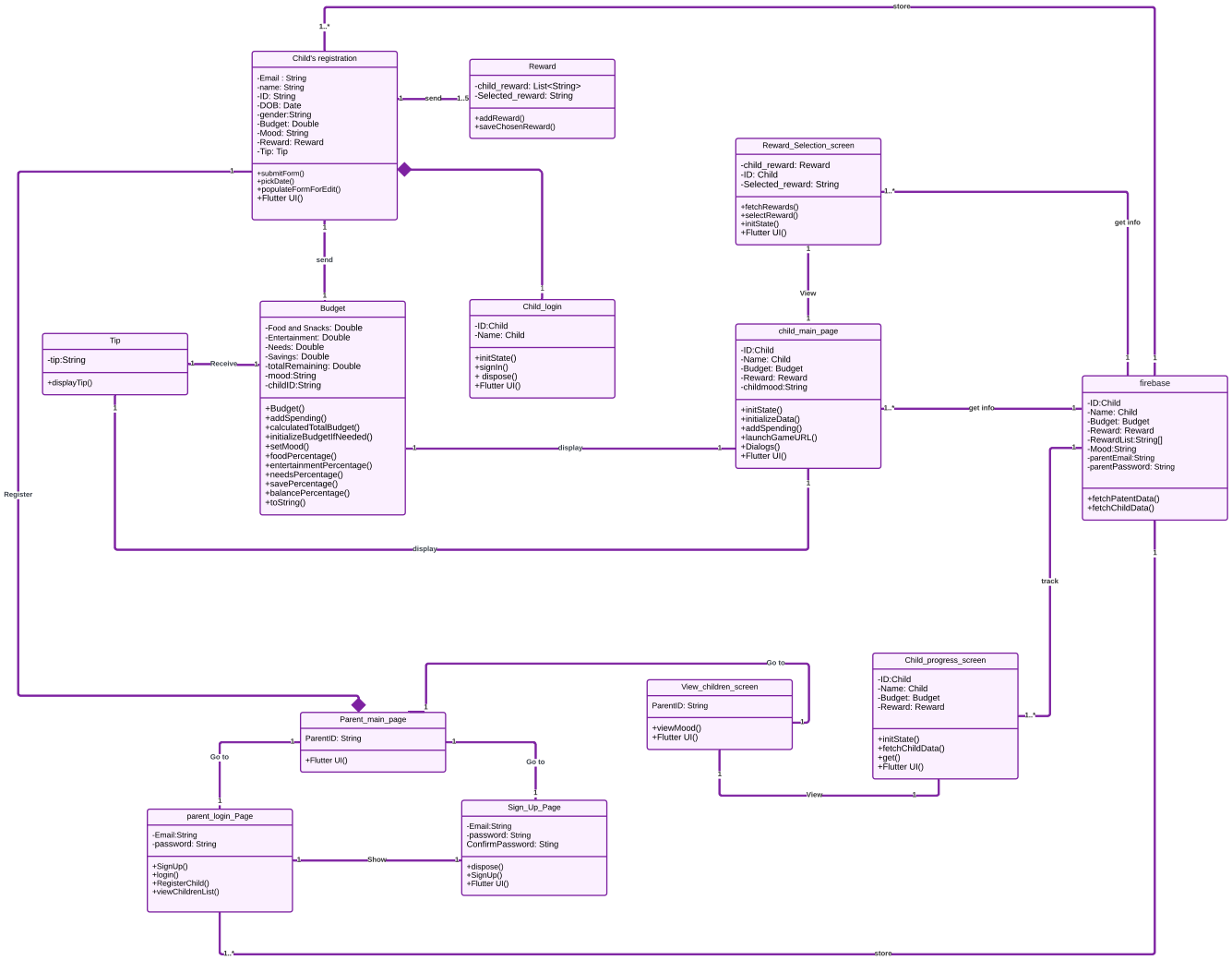


Access Space Game

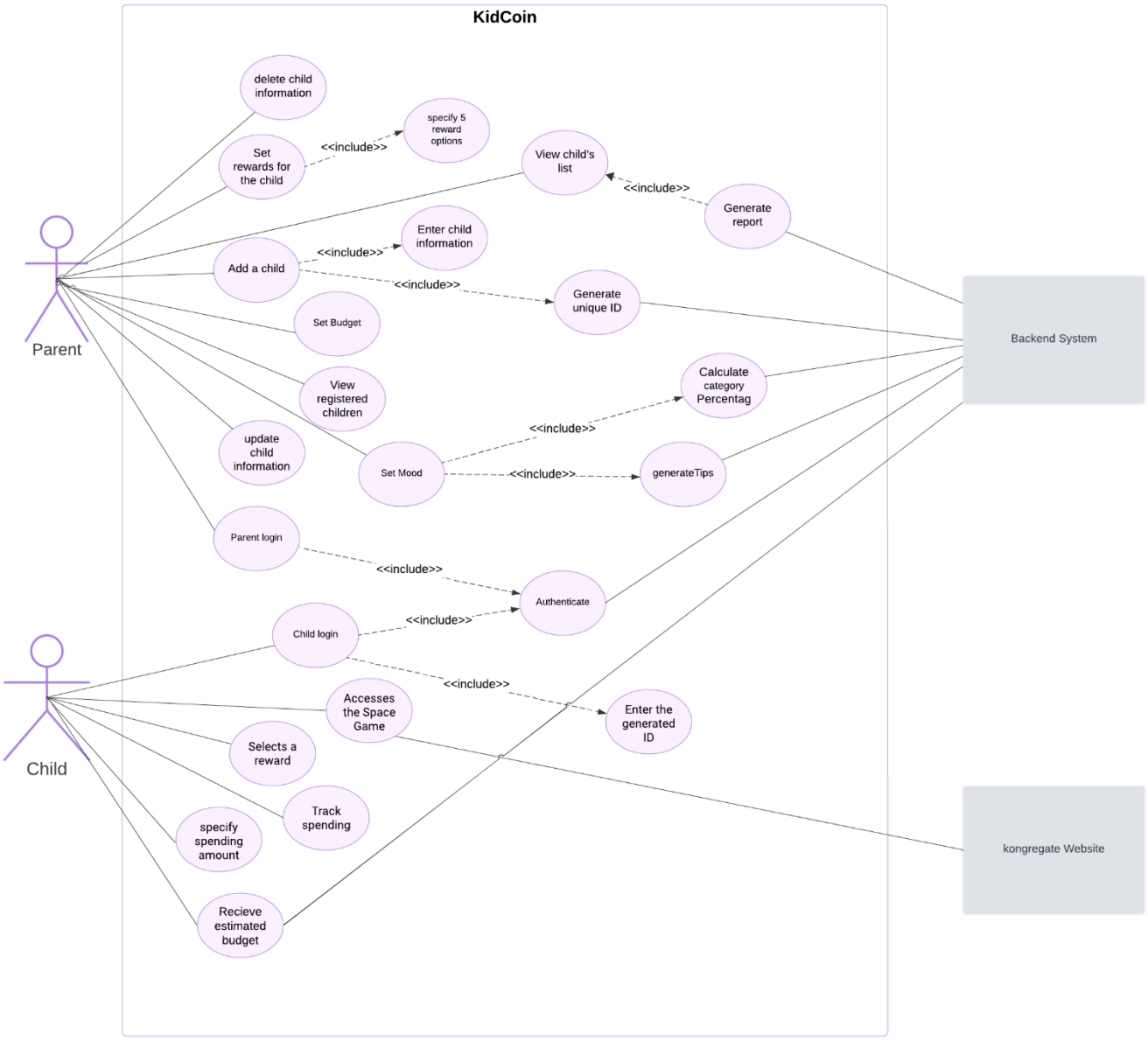


KIDCOIN

Class diagram



Use case diagram



KIDCOIN

SPRINT #4

Story Backlog – Sprint #4

Features made for Sprint #4

Component Name: **Set Reward Period**
Story Name: Set Reward period for Budget Goals
Story Sequence No: **001**
Story Short Description: select the reward period
Story Long Description: Parents shall set a reward period for a child to achieve mood-based budget goals.

Component Name: **Reward Timeline Management**
Story Name: manage reward Timeline
Story Sequence No: **002**
Story Short Description: Tracks the child's budget progress and awards them within the specified timeline.
Story Long Description: The system shall track progress and the child shall be rewarded within the set period.

Component Name: **Scalability**
Story Name: Software Scalability for Game Levels
Story Sequence No: **003**
Story Short Description: Scalable architecture for future game-level expansions
Story Long Description: The app shall be designed to support easy scalability, allowing the system to accommodate higher levels in the kid's Space Game, as well as additional features, without affecting performance. This ensures that as children new game levels can be added seamlessly.

Component Name: **User Interface**
Story Name: User-Friendly Interface
Story Sequence No: **004**
Story Short Description: Intuitive and visually appealing interface
Story Long Description: The app shall provide an intuitive, easy-to-navigate interface that is visually appealing to both parents and children. This will promote user engagement and satisfaction.

KIDCOIN

Prioritize stories and define sprints:

Sprint #4:

Component name	Priorities
1. Set Reward Period	High
2. Reward Timeline Management	Medium
3. Scalability	Medium
4. User Interface	Medium

Sprint #4 - Meeting(s)

Project Name: KidCoin

Project Members:

- Dimah Aloufi
- Bouthainh AlGarni
- Israa Bamarouf
- Joud Mozahem
- Joud Bahkali
- Shahad Alghamdi

Sprint #3: Stand up Meeting 1# [10/11/2024]

Sprint Duration: 1 Week

Scrum Master: Shahad

Client: Dr. Latifah Alharthi

Pair Programmers:

- Bouthainh AlGarni & Shahad Alghamdi
- Dimah Aloufi & Joud Bahkali
- Israa Bamarouf & Joud Mozahem

Sprint #3: Final Sprint Meeting #2 [17/11/2024]

Sprint Duration: 1 Week

Scrum Master: Bouthainh

Client: Dr. Latifah Alharthi

Pair Programmers:

- Joud Bahkali & Shahad Alghamdi
- Dimah Aloufi & Bouthainh AlGarni
- Israa Bamarouf & Joud Mozahem

Stories: **All stories for Sprint #3**

Component Name	Story Sequence Number	Use Cases (e.g., functionalities)
Set reward period	001	Parents shall set a reward period for a child to achieve mood-based budget goals.
Reward Timeline Management	002	Parents shall set a timeline for a child. And the child shall be rewarded within the set period.
Scalability	003	The app shall be designed to support easy scalability, allowing the system to accommodate higher levels in the kid's Space Game, as well as additional features, without affecting performance. This ensures that as children new game levels can be added seamlessly.
User Interface	004	The app shall provide an intuitive, easy-to-navigate interface that is visually appealing to both parents and children. This will promote user engagement and satisfaction.

KIDCOIN

Tasks Allocation

Student Name	Accomplished Tasks	Hours Completed for Each Task
Dimah Aloufi	○ **Parent Sign Up** UI Update ○ **Parent Sign In** UI Update ○ **Children List** UI Updates	○ All interface design and updates: 6 Days
Bouthainh AlGarni	○ Code Error and Conflicts solving ○ General UI enhancements ○ Reward code adjustments	○ Coding: 7 days
Israa Bamarouf	○ Developed test cases for Reward Period and Reward Timeline Management. ○ Merged sprint outputs into the final report with adjustments. ○ Created the presentation with key content highlights. ○ Attempted backend coding in Firebase.	○ Documenting: 5 h ○ Coding: 6 h
Joud Mozahem	○ Helped in finding solutions for code errors ○ Arranged the giveaways	○ Coding:1 day
Joud Bahkali	○ Sequence for Reward Timeline Management ○ Helped in finding solutions for code errors	○ Coding:1 day ○ Diagrams:2h
Shahad Alghamdi	○ set reward period ○ Reward Timeline Management ○ Diagrams	○ Coding: 1 day ○ Documenting: 1 h ○ Diagrams: 2 h

KIDCOIN

Sprint #4 - Test Cases(s)

Sprint #3 Test Cases - [11/26/2024]

Test Case Name: Sprint #4 – Set Reward period for Budget Goals

Test Case ID: KidCoin – set reward period

Test Case No.	Test Case Description	Expected Results	Outcome (Pass/Fail/Other (Comments))
TC001	Parent selects a valid reward period from the list (Daily, Weekly, Monthly), fills in all required fields, and press “Register Child”.	The form should successfully be submitted and saved, and a success message "Child saved successfully!" should be displayed	Pass
TC002	Parent does not select any reward period from the dropdown.	The system will automatically choose “Monthly” period.	Pass
TC003	Parent selects "Daily" reward period and then changes it to "Weekly."	The system should update and save the reward period as "Weekly," reflecting the new selection.	Pass

Sprint #3 Test Cases - [11/26/2024]

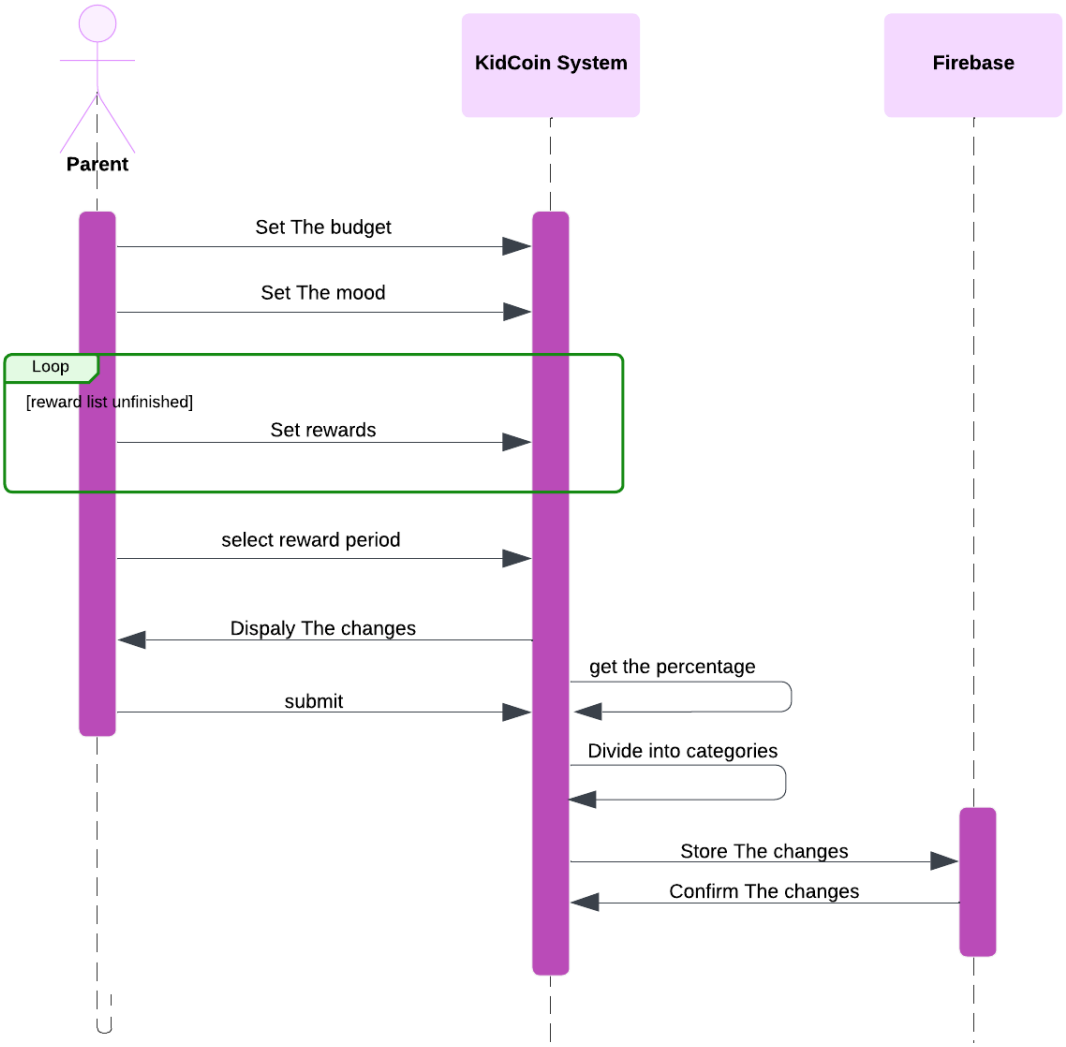
Test Case Name: Sprint #4 – Reward Timeline Management

Test Case ID: KidCoin – manage reward Timeline

Test Case No.	Test Case Description	Expected Results	Outcome (Pass/Fail/Other (Comments))
TC001	Child presses the "Select Reward" button and navigates to the reward timeline page.	The system should display the "Time Remaining..." countdown timer after the child selects a reward.	Pass
TC002	The countdown timer reaches zero, and the child achieves the budget goal.	A dialog message should appear stating, "Thank You! You've Done Great, do better next time!" Then, the child can press "OK" to dismiss the message.	Pass

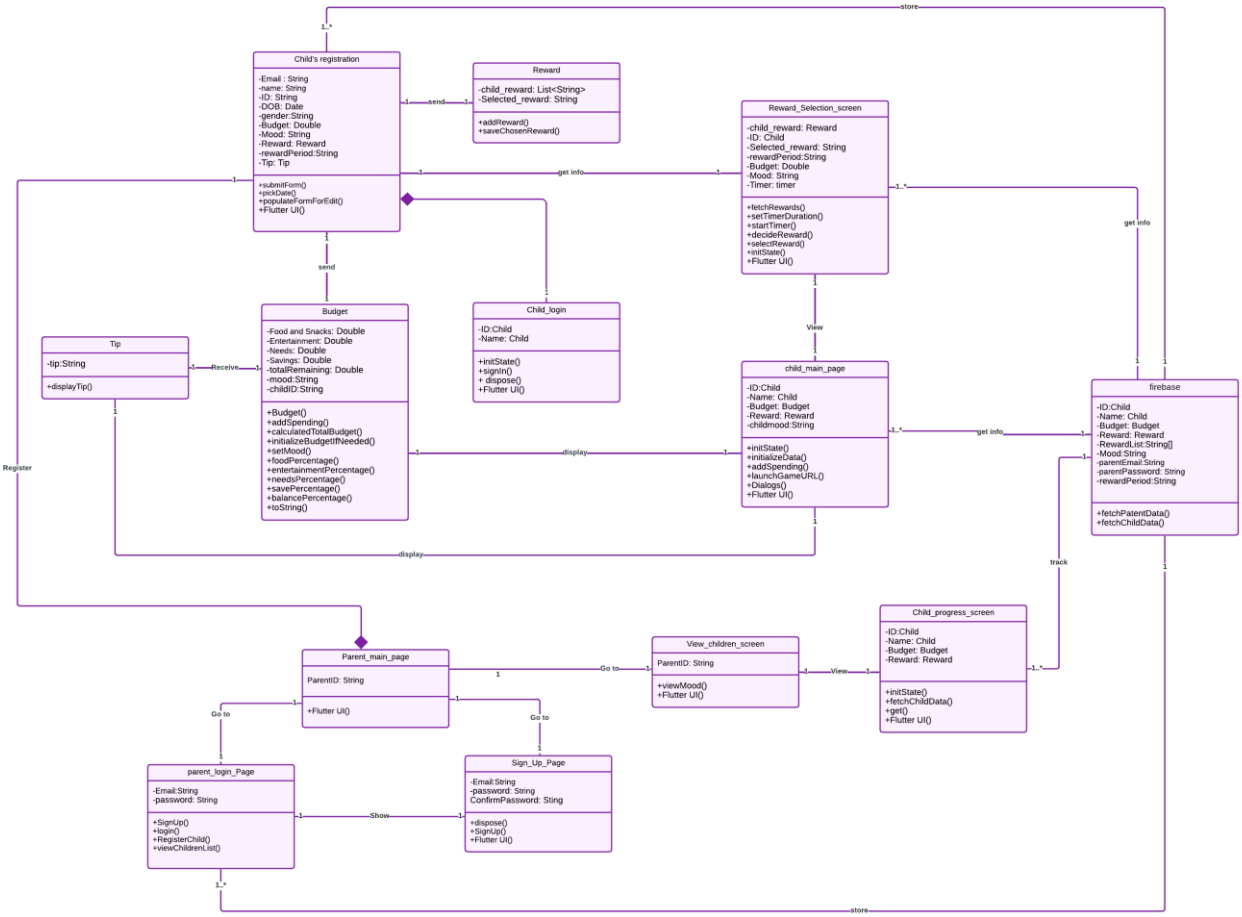
Sprint #4 – Diagrams

Set reward period



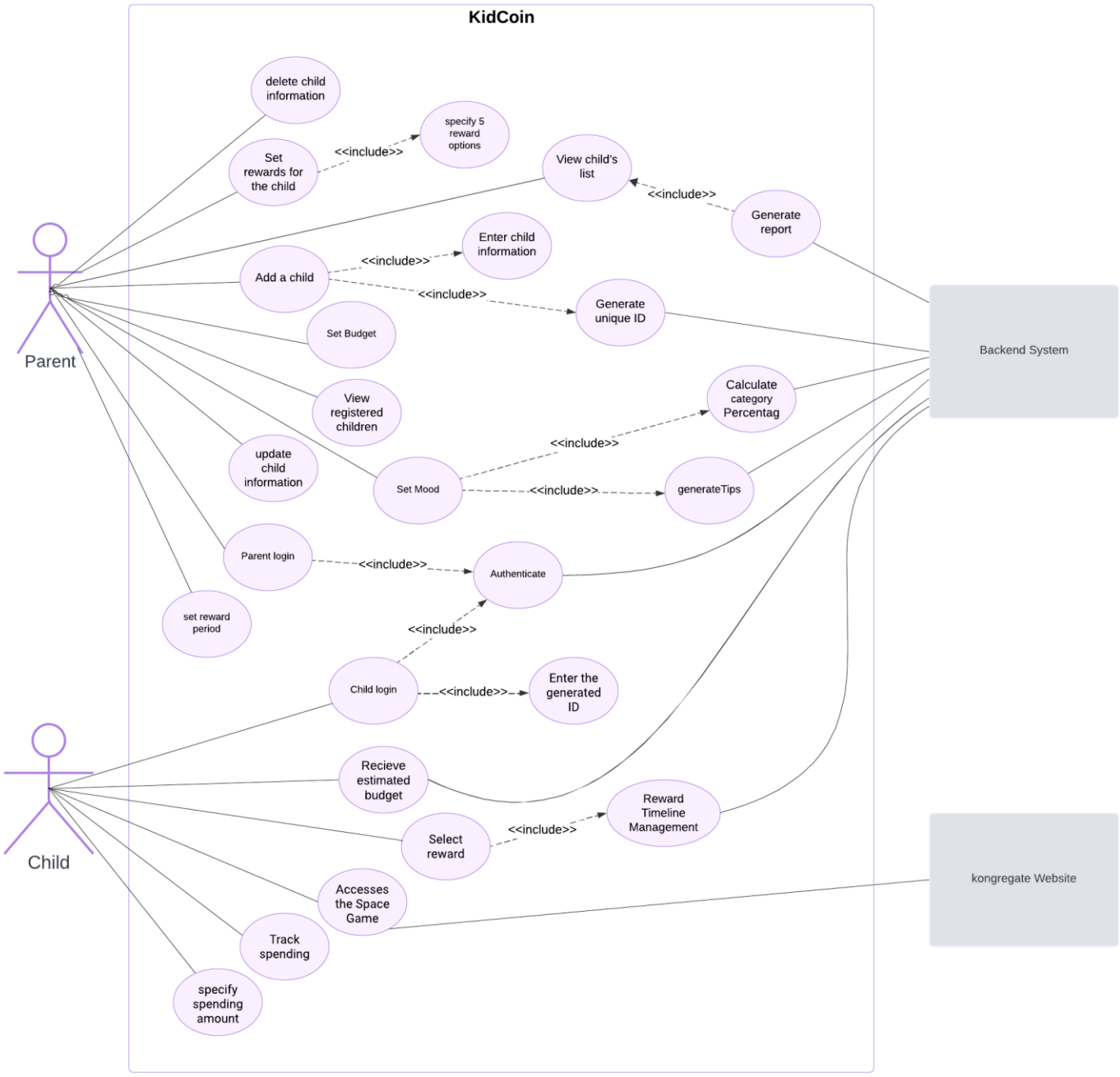
KIDCOIN

Class diagram



KIDCOIN

Use case diagram



Sprint #4 – Code & Links

- To visit KidCoin Repository please click here
- To visit Firebase Repository please click here
- Game Website click here