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Agape

Unconditional Love



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Abstract

"Love is an unconditional commitment to an imperfect person...To love somebody isn't just a strong feeling. It is a decision, a judgment, and a promise." – Fromm, E. (2007). Art of Loving

The love a parent feels for their child is beyond words, but if it had to be described, *unconditional* is the first word that comes to mind. *Agape* is a beautiful Latin word I discovered a few years back. It describes *love* in its highest form, a term to convey affection without any conditions.

Unconditional Love; Agape. The most apt expression to capture the bond between a parent and their child. Considering this, I dedicate my project to this very expression and named it Agape.

This application is developed to aid parents for guidance and support to their new set of paths of upbringing a family. It contains features that will ease the day-to-day tasks, lessons and tips to gain more information, availability to connect with other parents and a tool to capture memorable occasions.

Agape is committed to guiding parents through the challenges of parenthood, empowering them to lead a healthier, more organized lifestyle.

Further Information

“The object of this project is to take advantage of emerging and existing mobile technologies to develop a smart phone mobile application designed to be targeted towards; *new parents*.

To achieve these aims, this project will be implemented on Google’s Android operating system for use on the many Android devices currently available.

The application will provide...

Camera and Story reels, Tips and Lessons, Life Passport, Calendar and Trackers, Album, Playdate, as well as, Geo-Fencing and GPS tracker.

...providing interactivity and social aspects to enhance their experience.

The project will choose an appropriate architecture *that will allow ease of use for users and will be customisable to the individual’s accessibility preference.*”

Requirements Engineering

Feasibility Study

Similarity

Are there apps like this in the marketplace (in Android, iOS, Windows ...)? Identify at least 2 examples of Similar Apps. Briefly describe each of them. Reference the URL for each.

Previously, 4 were identified with the 2nd idea; NanAi.

Glow Baby: AI Newborn Tracker (iOS)

This app is strictly an iOS app design to help parents track and manage their child's activities and development. It provides features such as tracking feeding, diaper changes, sleep patterns, and development milestones. Its aim is to maintain the routine for the parent's child and providing valuable parenting support through artificial intelligence (AI).

Ref. "Glow Baby: AI Newborn Tracker", 2022, Glow, <https://apps.apple.com/ie/app/glow-baby-ai-newborn-tracker/id1077177456>, 24th of September, 2023.

Baby Tracker! (iOS)

This app is similar to Glow Baby but is more focused on tracking the child's activities. It allows parents to record feeding times, diaper changes, sleep schedules and as well as, growth development. It produces intuitive charts and summaries to help parents analyse patterns and identify trends. In addition, Baby Tracker offers features like reminders and notifications to ensure parents never miss an important task. The app's goal is to have a centralized platform for managing a baby's routine and ensuring their well-being.

Ref. "Baby Tracker!", 2020, Amila, <https://apps.apple.com/ie/app/baby-tracker/id1444238371>, 24th of September, 2023.

Main System Features and Services

Identify the main system features and services provided in the desired App system. Consider the existing systems and the services they provide.

[Reference and copy the URLs] (min 200 words)

Glow Baby: AI Newborn Tracker (iOS)

Glow Baby: AI Newborn Tracker offers a set of features designed to simplify parenting and ensure the well-being of both the parent and their newborn. The app contains features such as a pump log, baby tracker, sleep tracker, diaper tracker, breastfeeding tracker, and nursing and feeding trackers. It also includes parenting resources integrated with AI-powered insights that analyse the recorded data, offering personalized suggestions and guidance for parents.

The baby tracker component monitors various aspects of the child's routine, including the ability to track feeding sessions, whether breastfeeding or bottle-feeding. The sleep tracker feature enables parents to document sleep patterns, resulting in a consistent sleep schedule for the baby or child. Parents can also log feeding times, amounts, and feeding methods, providing a comprehensive overview of the baby's nutrition intake through the breastfeeding tracker and the nursing and feeding tracker. The data is recorded in the pump log feature, which assists mothers specifically in tracking pumping sessions and milk supply.

Additionally, parenting resources are made available, serving as an information hub for parents. It offers advice, articles, and tips on various parenting topics. AI-powered insights review the child's data and provide more personalized guidance for parents.

Ref. "Glow Baby: AI Newborn Tracker", 2022, Glow, <https://apps.apple.com/ie/app/glow-baby-ai-newborn-tracker/id1077177456>, 24th of September, 2023.

Baby Tracker! (iOS)

Baby Tracker! offers a focused set of tracker features, creating customized logs for parents to gain insights into their child's development. The app includes features such as a feeding tracker, sleep tracker, diaper tracker, breast pumping tracker, and a baby log to record all relevant data.

The feeding tracker records feeding sessions, whether breastfeeding or bottle-feeding, helping parents monitor the baby's nutrition intake. The sleep tracker assists in monitoring the baby's sleep schedule, enabling parents to establish a consistent sleep routine. The diaper tracker logs diaper changes, allowing parents to predict their baby's behaviour more accurately. Additionally, a breast pumping tracker enables mothers to monitor pumping sessions and milk supply, ensuring a steady and healthy feeding routine.

The baby log stores pictures, measurements, and details about the baby's development, serving as a visual record of the baby's growth and helping parents track milestones effectively. Furthermore, the app includes a medicine log, allowing parents to record the time and administration of medication given to the child.

Baby Tracker! supports parents by providing comprehensive insights into their child's development and growth.

Ref. "Baby Tracker!", 2020, Amila, <https://apps.apple.com/ie/app/baby-tracker/id1444238371>, 24th of September, 2023.

User's Access to Resources

In what ways do current users get/use their information, when not using the desired app?

Before Agape and similar applications, parents typically gathered information from various sources to learn about the journey of pregnancy and parenting. They relied on guidance from paediatricians or family doctors for their child's well-being and health. Additionally, parents attended parenting lessons or events, covering diverse topics related to child upbringing and how to prepare for the pregnancy journey. Midwives and Doula professionals were available to assist parents, providing

valuable support. Parents also used books and articles for self-guided learning and explored similar applications or online sources.

About Agape

Describe a new type of desired App system and how it might operate. Consider existing systems that provide services to users and organisers. Take inspiration from the systems identified in section 1 and key features identified in section 2.

Agape presents a set of features designed to enhance the parenting experience and ease the journey for parents from pregnancy to early childhood. The services it provides include an augmented reality (AR) integrated camera feature with filters and available editing tools, story reels, tips and lessons for parenting resources, a life passport that organizes their child's information, a calendar and trackers, an album feature to save memorable occasions, and a playdate feature that allows Agape parent users to connect with each other.

Parents are now able to take photos of memorable moments with their child through Agape's AR integrated camera feature. Thousands of filters and set of editing tools are available to use to improve the quality of their photos and videos. Story reels allows parents to share this moment with other Agape parents as well as have the option to sync these stories to other media platforms such as Instagram or Facebook story reels to reach families and friends.

The app automatically stores these photos in its Album feature, giving parents the option to upload or download more images at their convenience. Additionally, during the first 12 months of the newborn's life, the app sends monthly reminders to capture a sentimental photo of the baby. At the end of the year, a customized year album is generated, allowing parents to choose and purchase a physical copy of the Album. Subsequently, the app sets an annual reminder for parents to purchase an album, offering the flexibility of choosing personalized photos for a physical album or opting for an SD card version to preserve their memories digitally.

Tips and lessons provide expert advice and educational content on various parenting topics, child development, and general childhood psychology. The main aim of this feature is to reassure parents about what to expect on their journey and how to prepare for it. The app conveniently delivers personalized parenting tips through notifications or within the app as daily lessons, catering to busy parents who may not have the time to explore in-depth topics within the lessons feature.

Life Passport is one of the core features of Agape, enabling parents to store vital information about their child's health. This feature allows parents to easily convert this information into a formatted PDF, which can be shared directly with the family doctor or relevant professionals. Life passport offers various services, allowing parents to record essential details about their child's health, including medication information such as medicine names, dosages, and durations, with the option to set reminders. Additionally, parents can input basic information about their child, including name, birthdate, address, doctor, emergency contact, as well as diagnoses and allergies. The Sick Day Book function tracks the days the child has been unwell, providing a comprehensive overview of their health history. Furthermore, there is a dedicated vaccination book, enabling parents to record the vaccinations their child has received, along with the dates of administration.

The app also features a calendar that syncs scheduled appointments with authorized user parents, ensuring seamless coordination. It allows parents to communicate upcoming appointments and

avoid confusion, double-booking or forgetting upcoming occasions. Trackers are also available and could be customised depending on the needs of the child. Feeding tracker, sleep tracker, diaper tracker and other different trackers are available for parents to choose from. Logs provides an overall view of the development and growth of their child.

Playdate feature can now keep parents assured when their child is at someone else's care. Playdate allows the parent to customise an information list regarding their child for the caregiver. This can include allergies, child preferences, and other notes that they would like to share. This can easily be connected to another Agape user or have the availability to convert the list into a formatted PDF for non-users. This assures the safety of the kid and boosts the confidence of the parents when they are away.

In addition, Agape offers a premium option feature that assures parents of the safety of their child. With the GPS tracker, parents can easily locate their child's whereabouts using Agape's provided products. These trackers come in various forms, such as bracelets or necklaces, making them accessible and convenient for parents to purchase directly.

Alongside the GPS tracker, Agape provides a Geo-Fencing feature, allowing parents to navigate specific areas, such as the kitchen or the backyard, ensuring their child stays within safe zones. This advanced technology provides an extra layer of safety, preventing potential accidents and allowing parents to monitor their child's movements effectively.

Stakeholders

Who are the stakeholders? Would this app affect them positively or negatively?

Agape is specifically designed to assist new parents, making them one of its primary target audiences. While children themselves may not directly interact with the app, it focuses on organizing and managing their information and ensuring their safety, making them indirect beneficiaries of the app's features. The parents and children are the main end-users for Agape.

Other users may include, healthcare professionals to support on the educational aspect of the app as well as providing guidance on highlighting the boundaries between what topics can be covered within the application and when to direct the parents to an actual professional. Caregivers and babysitters are also benefitting from Agape as they are able to access information of the child from the document the parent shared via the application or formatted PDF.

Lastly, we also have the app developers and maintainers who are responsible of the making of the application and will continuously update and evolve Agape. The IT and Business departments will ensure the success of the application. The business department will work on the operations workflow of the business, keep the application compliant to the law and legislation, marketing the product to the targeted media to boost sales and gain revenue to support the development and maintenance of this application. The IT department is responsible for providing an user-friendly UI, to allow parents who may not be technical experts, process data workload appropriately and safely and also securing the system against potential security threats.

Other Research Methods

What other research would be necessary to ascertain feasibility e.g., ownership of smartphones ...? (Gartner Research etc.)

1. Find the purpose of the app and highlight what the parents actually need in assistance.
2. Divide the interesting features that parents may want from what is actually demanded; what the parents need. Identify the areas of where the parent struggles and brainstorm solutions that may help.
3. Experience the environment. Babysit, volunteer to help in daycare centers, connect with parents – understand how the parenting would be and what the difficulties parents are having.
4. Direct re-search from existing similar applications.
5. Produce end user profiles, highlighting the differing experiences, tasks, and needs. What is their lifestyle or routine? Assist and not change habit.
6. What is the market like? How much are parents willing to pay for applications? What are parents likely to purchase? What is important to them? How open are parents in trusting technology about their child?

Functions and Non-functions

Make an initial list of functional and non-functional requirements.

Functional Requirements

User Authentication and Authorization:	<ul style="list-style-type: none">▪ Create account and log-in
AR Camera and Editing Tools:	<ul style="list-style-type: none">▪ Provide AR integrated camera with filters and editing tools
Story Reels:	<ul style="list-style-type: none">▪ Users can upload and share stories▪ Ability to sync to external media reels
Album Management:	<ul style="list-style-type: none">▪ Store and organise photos & videos▪ Upload and Download
Parenting Tips and Lessons:	<ul style="list-style-type: none">▪ Educational platform for parents▪ Personalised tips based on the age or level of their child
Life Passport:	<ul style="list-style-type: none">▪ User can record medical information of their child and convert the information on a formatted PDF to be externally shared.
Appointment Management:	<ul style="list-style-type: none">▪ Users are able to organise their appointments and have a sync calendar with authorized users.
Customizable Trackers:	<ul style="list-style-type: none">▪ Customise trackers and provide a log of the data.
Playdate Feature:	<ul style="list-style-type: none">▪ Share customised information list of their child to caregivers or related persons.

Premium Features:	<ul style="list-style-type: none"> ▪ Option of tracking devices and geo-fencing the environment of the child
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Non-Functional Requirements

Usability:	<ul style="list-style-type: none"> ▪ User-friendly interface (UI) ▪ Accessible to users with different technology skills
Performance:	<ul style="list-style-type: none"> ▪ App responsive should be quick ▪ AR camera filters should not affect the smoothness of the camera
Reliability:	<ul style="list-style-type: none"> ▪ Application stability should be monitored. Should not crash under normal usage conditions. ▪ Data should be secured and prevent any possibilities of data loss.
Security:	<ul style="list-style-type: none"> ▪ User data should be secured and encrypted in the system. These are sensitive data and must be protected at all times. ▪ Different level of access should be implemented between stakeholders.
Compatibility:	<ul style="list-style-type: none"> ▪ The app should be able to work on any mobile platforms such as iOS and Android. As for this project, we are focusing on Android platforms. ▪ Ability to cross-platform with other medias to share story reels.

Ethnographic Methods

Could ethnographic methods be used in this case study? If so, in what way?

Ethnographic methods could be employed in this case study to identify common tasks shared by experienced and inexperienced parents/guardians. This approach would help pinpoint the essential features that could better support parents in their daily routines. Through these methods, we can also highlight the specific challenges inexperienced parents/guardians face in various aspects of parenting.

Additionally, we can gather advice and new methods from experienced parents/guardians on what they have learned during their parenting journey. By immersing ourselves in the same environment and mindset as the parents and their child, we can comprehend the obstacles they face. This understanding would enable us to provide beneficial and useful services tailored to their needs.

Interviews and Questionnaires

Interviews

Identify a significant stakeholder(s), which will be interviewed to get more information on the intended product. Justify your choice of stakeholder(s). Do up an interview plan and pre-prepare approximately 10 questions.

As mentioned in *Stakeholders*, my main end-users are the new set of parents who are looking for guidance and support regarding parenting. I want to understand their perspective to be able to develop an application they need and not what I, as the developer, assume they may need.

1. What is your daily routine from morning, noon-evening, and night?
How do you feel at the start of the day and at the end of the day?
2. What do you find stressful or frustrating during your routine?
3. What resources do you use to alleviate your workload?
Example: To-do lists, Reminders?
4. What worries do you have regarding parenthood?
5. What are things you are afraid or ashamed to ask other parents or others regarding parenthood?
6. Where do you store sensitive data and/or medical records of your child?
7. How do you assure your child's safety outside of the house?
8. How often do you forget your child's friend/their parents' names or important information about them?
9. Would knowing your child's friends' allergies or other important information be beneficial during play dates?
10. What would you advise other people who are planning to start a family?

Figure A: Interview Sheet

Questionnaires

Identify a significant group of stakeholders, which will receive **questionnaires**. Justify your choice of stakeholders. The questionnaire should have approximately 10 questions.

As mentioned in *Stakeholders*, my main end-users are the new set of parents who are looking for guidance and support regarding parenting. I want to understand their level of tech expertise to plan to find the best suitable UI layout for the users.

Where 1 is Strongly Disagree and 10 is Strongly Agree, from 1-10, rate how you feel regarding the statements below:

1. It is easy for me to use electronic devices such as phones, tablets and/or laptops.
2. I find it easy to navigate through my phone.
3. I find it fast and easy to learn how to use new devices.
4. I trust devices, such as my phone, to secure and store my medical information.
5. I trust devices, such as my phone, to secure and store sensitive information about me. This includes but is not limited to my name, address, my location and history, and daily activities.
6. I often use electronic tools such as applications on my phones to support my day-to-day tasks. For example, reminders or notes.
7. I find reading on electronic devices easy.
8. I often forget my passwords or access information on my accounts.
9. I often use accessibility tools on my devices. For example: Text-to-speech
10. I have a phone or an equivalent device such as tablet or laptop.

Figure B: Questionnaire Sheet

Requirement Analysis

Use the use case template to analyse the proposed system.

Draw an initial use-case diagram with supporting scenario description for this app (possibly using StarUML for the diagram). The first iteration of the use-case diagram can consist of a single overall use case with supporting main flow and 2 or 3 alternative flows.

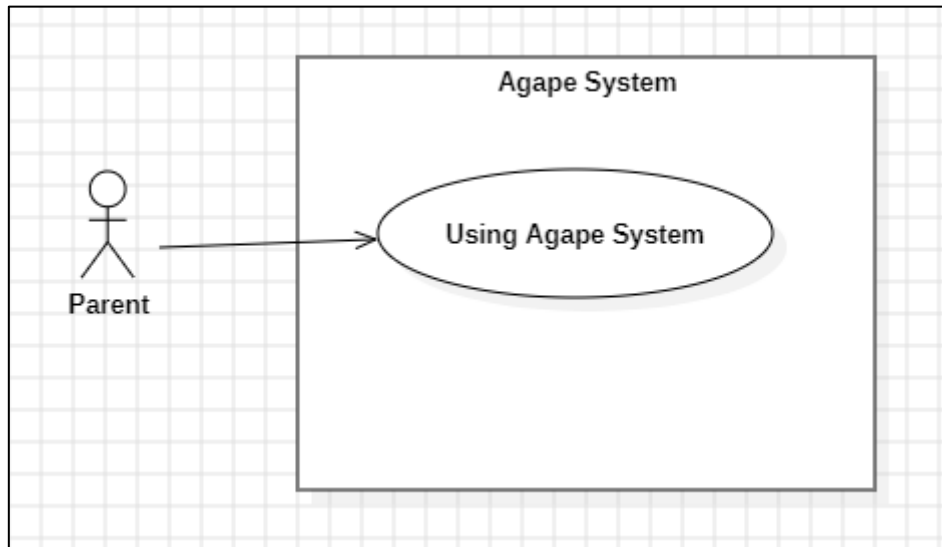


Figure 1: 1st Iteration of Agape Use Case System

The use case description is developed from analysing the description of the use case. This is the statement of the goal of the use case.

For the first iteration this will be a description of the how the system operates. Use Cases focus on functional requirements and specific system behaviour.

USE CASE	1	Using Agape System
Description of Goal in Context	The parent is able to set up a profile for each child and access the available services Agape provides as well as share authorization permissions to another user parent.	
Preconditions	To access Agape's Main System, user must be a registered and verified account.	
Post Conditions, Success End Condition	After using Agape's Main System, user had successfully set up a profile for their child and accessed the given features. User is now also connected and provided authorization with another Agape user aka second parent/caregiver.	

Post Conditions, Failed End Condition	Profile will not be created if mandatory fields are not correctly filled.	
Actors	Parent users	
Trigger	User attempts to add a profile for their child	
DESCRIPTION	The parent will set up the child’s profile which a record book will be created in the system and allow access to services provided through Agape.	
Main Flow (MF)		
Step	Action	Alternate
1.1	User adds a profile for one child	
1.2	System saves the profile and creates a record file for the child	
1.3	System will prompt for mandatory information to be filled on the Life Passport feature	
1.4	User updates Life Passport for basic information and emergency contacts	
1.5	System secures and encryptes the information	
1.6	User adds a user and allow authorizaton permissions with the user of the child’s profile	
1.7	System verifies the second user and re-confirms with primary user if they would like to continue	EF.1.7
1.8	User accepts and the system syncs the data with the second user	
1.9	User uses the camera feature, adds a filter and takes a photo. User uploads unto the story reel.	
1.10	System saves the photo in the Album and adds to the story reel feature. Prompts user if they would like to sync their stories on external medias such as Facebook or Instagram.	
1.11	User accepts and the system will continue to upload stories on external medias until user changes permissions in settings.	
1.12	User access the Life Passport feature and adds a medication. Sets a reminder and tracker for this medication.	
1.13	System saves the information of the medication in the Medicine section and schedules a reminder on the calendar feature as well as add a tracker for the medicine.	

1.14	User wants to download previous photos from the Album. Selects the photos they want and press download.	
1.15	The system saves the photos in the user's external photo storage on their phone.	EF.1.15
1.16	At the set time, system will remind user that an Album is available to buy and if they would like to customise their Album.	
1.17	User is provided with Album editing tools and choose the photos they would like to include.	
1.18	User purchases the Album and system registers the orders to the sales department team.	EF.1.18
1.19	User wants to add a sheet information of their child to an upcoming Playdate. User provides the name of the occasions and the name & contact details of the caregiver. User chooses which information from Lifepassport to share with the caregiver.	
1.20	System will provide a formatted PDF of the opted information or directly shares this list to an existing Agape user.	
1.21	User pays for a premium feature for GPS tracker. User purchases a tracking device directly from Agape and connects with the app.	
1.22	System saves and connect the app after authenticating the device.	
1.23	System provides a new additional feature on checking the map to locate the child wearing the tracking device.	
1.24	User also opts to another premium feature, Geo-Fencing. Sets the devices and calibrates the house. User labels each area of the house a danger or safe zone.	
1.25	System will now alert user if the child is in a danger zone.	
1.26	User completes their tasks and exits app.	
1.27	System closes and saves updated information.	
1.28	End Use Case 1.	
n...	<...>	
<p align="center">EXCEPTIONS or ERROR Flow Description</p> <p align="center">EF.1.7</p> <p align="center">Error flow at MF.1.7: Secondary User is not an existing Agape User Account</p>		

Step	Branching Action	Alternate
1.7.1	System notify user that secondary user does not exist.	
1.7.2	User re-checks information and corrects any errors.	
1.7.3	Go to MF.1.8	MF.1.8
EXCEPTIONS or ERROR Flow Description EF.1.15 Error flow at MF.1.15: Not enough storage to save photos		
Step	Branching Action	Alternate
1.15.1	Notify user that download has failed as there is not enough storage	
1.15.2	User clears phone of redundant items to make more storage	
1.15.3	Go to MF.1.15	MF.1.15
EXCEPTIONS or ERROR Flow Description EF.1.18 Error flow at EF.1.18: Payment Declined		
Step	Branching Action	Alternate
1.18.1	Notify user that payment declined.	
1.18.2	User updates payment details.	
1.18.3	System verifies and takes payment. Let user know that payment is succesful.	
1.18.4	Go to MF.1.18	MF1.18

Non-functional Requirements for each use Case can be added in the Table below. Non-functional requirements, management issues and decisions required to be made, can be identified in the following table.

From the table below, **choose a limited number of appropriate non-functional requirements** relevant to the Use Case.

Non Functional Requirements can be categorised as

- Product related
- Organisation related, process and approaches set by the company
- External, imposed by outside bodies

RELATED INFORMATION	Use Case: 1	Using Agape's Set Profile System
Priority:	High	
Product: Performance	<ul style="list-style-type: none"> ▪ AR camera filters should not affect the smoothness of the camera. 	
Product: Efficiency	<ul style="list-style-type: none"> ▪ App responsiveness should be quick. 	
Product: Reliability	<ul style="list-style-type: none"> ▪ Application stability should be monitored and should not crash under normal usage conditions. ▪ Data should be secured to prevent any possibilities of data loss. 	
Organisation: Standards	<ul style="list-style-type: none"> ▪ Adhere to GDPR standards on processing data. ▪ Following UX/UI design principles and guidelines to provide users a familiar usability. 	
OPEN ISSUES	What happens on the 18 th birthday of the child, tracking will be illegal? System overrides security and blocks usage of the child?	
Due Date	Project release date: Last half of the year.	

More Systems Analysis

Develop a second iteration in a separate word report consisting of 4 or 5 use cases. Each use case requires a use case narrative describing the scenario analysis. Each use case should have 2 or 3 exception or alternative flows

*Refer to second word/pdf report: **More System Analysis***

Requirements Specification Matrix

From the requirements analysis identified with the use Case scenario analysis identify key functional requirements.

There should be 6 to 10 easily identifiable feature or requirements that can be listed in this matrix. All the use cases identified previously need to be included and review section 7 for additional features

Req ID	Name of Req	Description	Priority	User Contact
1	Playdate	Share customised information list of their child to caregivers and related persons.	Medium	Parents
2	AR Camera	Camera is integrated with AR filters and editing tools.	High	Parents
3	Customizable Trackers	Have the ability to add a <i>tracker</i> and get a log record when needed.	High	Parents
4	Life Passport	User can record medical information of their child and convert the information on a formatted PDF to be externally shared.	High	Parents
5	User Authentication and Authorization	Creainting account and log-in UI.	High	Parents
6	Parenting Tips and Lessons:	Available educational platforms and personalise tips based on the users experience and age of child.	High	Parents
7	Story Reels	Synchronisation with external media platforms.	Medium	Parents
8	Album Management	Stores the photos into the database.	High	Parents

Figure 2: Requirements Specification Matrix

System Modelling

From the systems analysis and the requirements table additional features and actors can be identified. Normally this would be done through additional Use Case models (diagrams and narratives).

At this stage the aim is to list what would be needed to complete the model in a list by reviewing the requirements table and the systems analysis models.

Actors in the System

List all the possible actors in this system.

Parent	Our primary market is focused on parents, particularly those who are new to parenthood. The app is designed to provide valuable support for their day-to-day tasks and foster positive relationships with their children.
Parent (n) / (Other) User Parent	Additional users of the app include parents who are connected to the primary user. This feature enables a collaborative approach to parenting and ensures that information is shared among relevant individuals.
Non-User Parent	Parents who may not actively use the app or not a user at all, can still benefit from the application. Primary users can share specific information with them. This feature promotes inclusivity and effective communication between app users and those who are not users.
Scheduler Database Administrator	This role is responsible for securely storing and managing data related to appointments, trackers, and other scheduling information within the application.
Medicine Database Administrator	Responsible for maintaining a secure database containing information about the child's medicinal history - ensuring the child's health details are easily accessible to parents and can share this to medical professionals.
Buddy Database Administrator	Tasked with managing the database that stores playdate information, including details about the child's friends and their parents. This feature enhances social connections, facilitates playdate planning and ensure the safety of the child.
Album Database	Manages the storage of photos, videos, and information related to album purchases.
Sales Department Team	This team is responsible for processing album deliveries and handling other product sales.

Use-Cases in the System

List the possible use-cases in this system.

Agape System Use-Case	Upon setting up a child's profile, the system will automatically generate a record book within Agape. This record book captures and organizes essential information about the child. After creating the child's profile, the parent gains access to a range of services to support and enhance their child's well-being and development.
Scheduler System Use-Case	The user creates an appointment and adds the details such as the time, location, and purpose of the schedule. This information is then saved within the scheduler database and syncs the appointment with all relevant users, assuring that all users involved has real-time access to the scheduled details.
Medicine System Use-Case	When a user creates a medicine profile, they input their child's medicinal history such as, the medication's name, description, quantity, and intended duration. Additionally, users have the flexibility to set reminders and a tracker for their child's medication.
Playdate System Use-Case	The user has the capability to share their child's customized profile with other parties, maintaining full control over the information to be disclosed. Users can share directly with another Agape user or the system provides the flexibility for users to convert the profile into a PDF format.
Album System Use-Case	This feature offers a set of tools enabling users to capture photos, organize them and be able to add a personalized description on each photo or video. In addition, the app has built-in editing tools, allowing parents to customise albums of the journey of their child's growth.

Verification and Validation of Requirements

Test Case Planning. Develop 2 test cases, one for each of 2 use cases, functional requirements, identified in Iteration 2 of the Use Case Analysis. Develop 1 test case for 1 non-functional requirement for 1 of the Use Cases.

Use the test case template to create initial Use Acceptance Test plans that will permit users and developers to agree the system will have been developed as specified by the requirements.

Consider the test plan as a user guide or user manual for non-technical novice users of the system.

Functional Requirements Testing

Test Case for Album System

Test Case Number: 1
Test Case Name: Purchase Physical Album
Related Use Case Name: Using Album System Number: 5
Purpose: To guarantee that users purchasing a physical album through the Album System will reliably receive the ordered product.
Procedure Steps: (Guided by Main flow or other flows of Use case) <ol style="list-style-type: none">1. The tester creates an album and selects the photos to be added.2. The system saves the album details in the album database for future editing or to be purchased when the tester is ready.3. The tester edits the album with the in-built editing tools of the Album System.4. The tester process the purchase of the album.5. The system authenticates and validates the payment provided by the tester.6. The tester provides the delievry information.7. The system inputs the order and delivery details into the sales database for the sales team to process the sale.8. The tester recieves the customised Album.9. The tester confirms the order is received.10. The system deletes the digital album to allow more space for other future albums.11. End of test case.
Expected Results: All steps worked as expected for the main flow. The user sucessfully orders a physical album.

Test Case for Scheduler System

Test Case Number: 2
Test Case Name: Adding Appointments

Related Use Case
Name: Using Scheduler System Number: 2
Purpose: Verifies that a user can add an appointment to the scheduler system and store the information correctly, as well as, sync the appointment details with other authorized users.
Procedure Steps: (Guided by Main flow or other flows of Use case) <ol style="list-style-type: none"> 1. The tester adds a new appointment through the scheduler system. 2. The system requests the date, time, and a brief description of the appointment. 3. The tester inputs the appointment information. 4. The system checks the availability of the date requested. 5. The system updates the new appointment into the calendar feature and syncs the information to authorised users. 6. The tester checks upcoming events on the calendar. 7. End of test case.
Expected Results: The user successfully adds an appointment unto the calendar and other authorised users of the child's profile can access this appointment.

Non-Functional Requirement Test Use-Case

Test Case for Access Level

Test Case Number: 3
Test Case Name: Authorisation Levels for Child Profile Access
Related Use Case
Name: Using Agape System Number: 1
Purpose: Verifies the user is able to manage the authorization levels for accessing a child's profile information, ensuring that only permitted users can view and interact with the profile.
Procedure Steps: (Guided by Main flow or other flows of Use case) <ol style="list-style-type: none"> 1. The tester selects the child's profile in which they want to edit the authorisation level for. 2. The tester adds a secondary user and specifies the level of access they have on the profile. 3. The system updates the child's profile and saves the secondary user's details. 4. The secondary user attempts to add an appointment on the child's profile.

5. The system verifies the authorisation levels of the secondary user and updates the changes they have made.
6. End of test case.

Expected Results:

The primary user successfully added a secondary user and allows them to easily navigate the child profile depending on the level of access permitted. Users without permissions will not have the child's profile saved unto their accounts.

Review Feasibility Studies

Non-functional Requirements

Before you complete the final submission of the feasibility report, review and update the nonfunctional requirements, if necessary.

Usability:	<ul style="list-style-type: none"> ▪ User-friendly interface (UI) ▪ Accessible to users with different technology skills
Performance:	<ul style="list-style-type: none"> ▪ App responsive should be quick ▪ AR camera filters should not affect the smoothness of the camera
Reliability:	<ul style="list-style-type: none"> ▪ Application stability should be monitored. Should not crash under normal usage conditions. ▪ Data should be secured and prevent any possibilities of data loss.
Security:	<ul style="list-style-type: none"> ▪ User data should be secured and encrypted in the system. These are sensitive data and must be protected at all times. ▪ Different level of access should be implemented between stakeholders. ▪ Management of different access levels between primary users and other users added on the child's profile.
Compatibility:	<ul style="list-style-type: none"> ▪ The app should be able to work on any mobile platforms such as iOS and Android. As for this project, we are focusing on Android platforms. ▪ Ability to cross-platform with other medias to share story reels.

Specification Matrix

Review and, if necessary, Update the requirements Specification Matrix, section 13, and identify the high-level core system features

Req ID	Name of Req	Description	Priority	User Contact
1	Playdate	Share customised information list of their child to caregivers and related persons.	Medium	Parents
2	AR Camera	Camera is integrated with AR filters and editing tools.	High	Parents
3	Customizable Trackers	Have the ability to add a <i>tracker</i> and get a log record when needed.	High	Parents
4	Life Passport	User can record medical information of their child and convert the information on a formatted PDF to be externally shared.	High	Parents
5	User Authentication and Authorization	Creainting account and log-in UI.	High	Parents
6	Parenting Tips and Lessons	Available educational platforms and personalise tips based on the users experience and age of child.	High	Parents
7	Story Reels	Synchronisation with external media platforms.	Medium	Parents
8	Album Management	Stores the photos into the database.	High	Parents
9	Emergency Contact	Stores all emergency contacts of the child, as well as, their playdate emergency contacts.	High	Parents/Other
10	Scheduler	Stores appointment details and provide an interactive calendar system which syncs with other autorised users.	High	Parents/Other

Figure 2: Requirements Specification Matrix

Update Requirement Specification (RS) and a set of Use-Case Diagrams (UCD) with narratives

Consider the Use case Model to be sure key functionality has been addressed in the analysis and modelling process.

Do any of your use-cases need to be broken down further i.e., is there is too much functionality in one use-case?

Use-Cases 2 to 5 are averaging between 10 to 15 steps for main flow. These are breakdowns of my main use case (1) which further details about each feature Agape provides.

Update the Use Case list in section 15 as necessary.

No further changes needed. The same use-cases remain.

Update your Requirement Specification table with additional requirements as necessary.

*Revised in **Review Feasibility Studies**.*

Prototype

Sketch the home page/starting page of the app. You should take a photo of it and insert the photo into the document.

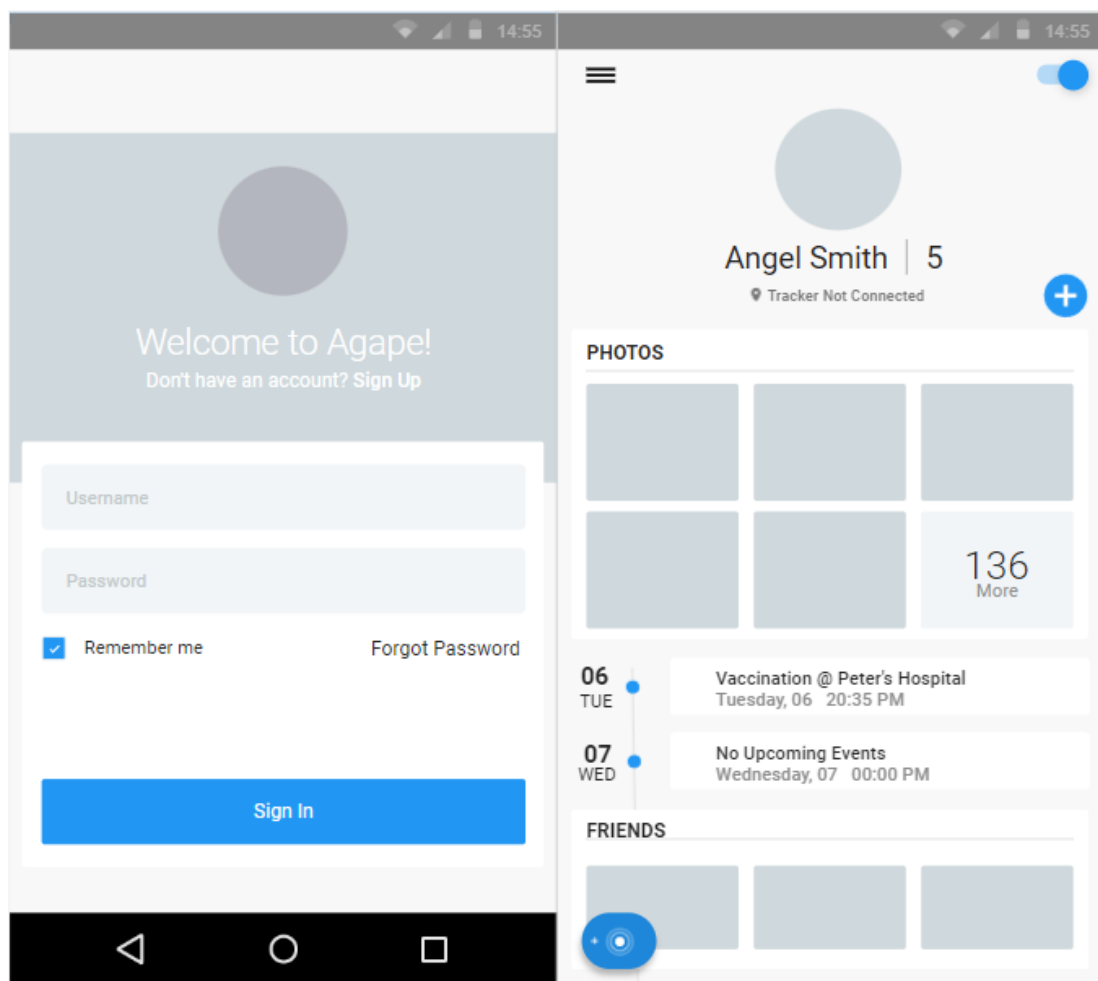


Figure 3: Prototype of Agape's Homepage

Additional Functional and Non-Functional Test Cases

Functional Test Cases

Test Case for Camera Permission

Test Case Number: 4
Test Case Name: Camera Permission
Related Use Case Name: Using Album System Number: 5
Purpose: Checks that the user has allowed camera permissions for the application.
Procedure Steps: (Guided by Main flow or other flows of Use case) <ol style="list-style-type: none">1. The tester attempts to take a photo.2. The system verifies that the camera application has been granted the necessary permissions.3. The system prompts the user to allow camera access.4. The tester grants the application camera access from settings.5. The tester attempts to take a photo again.6. The system opens the camera to be used.7. The tester takes a photo.8. The system saves the photo into the album.9. End test case.
Expected Results: The user grants all necessary camera permissions and successfully captures a photo, and saves it in the album.

Test Case for Handling Double Booking

Test Case Number: 5
Test Case Name: Double Booking Appointments
Related Use Case Name: Using Scheduler System Number: 2
Purpose: Ensure the system is able to handle double booking of appointments and raise notice to the user.

Procedure Steps: (Guided by Main flow or other flows of Use case)

1. The tester adds a new appointment through the scheduler system.
2. The system requests the date, time, and a brief description of the appointment.
3. The tester inputs the appointment information.
4. The system checks the availability of the date requested. The date and time has been booked by a different occasion. Prompts user an appointment has already been created and displays the initial appointment date and time.
5. The tester changes the date and time respecting the already existing appointment.
6. The system checks the availability of the new date and time.
7. The system updates the new appointment into the calendar feature and syncs the information to authorised users.
8. The tester checks upcoming events on the calendar.
9. End of test case.

Expected Results:

The user successfully adds an appointment unto the calendar and other authorised users of the child's profile can access this appointment. The user avoids double booking appointments due to the error handling of the scheduler system.

Test Case for Sharing Information for Playdates

Test Case Number: 6**Test Case Name:** Sharing Information**Related Use Case**

Name: Using Playdate System
Number: 4

Purpose:

To check the information shared regarding the child is as the user customised and ensure the security of this data.

Procedure Steps: (Guided by Main flow or other flows of Use case)

1. The tester exports a information sheet of the child and selects which information are to be printed.
2. System displays the final document of what it will contain.
3. The tester confirms the information shared are correct.
4. The system converts the information into a PDF and provides destination options to where this file will be sent to or saved.
5. The tester directly shares this PDF via messaged to non-user parents.
6. The non-user parents can now access important information such as allergies and dietary regarding the child.

7. The tester is rest assured about the safety of their child at someone else's care.
8. End of Test Case.

Expected Results:

The user successfully shares important notes and information regarding their child to their playdate's parents.

Non-Functional Test-Cases

Test Case for Response Time on Sharing and Receiving Playdate Information

Test Case Number: 7

Test Case Name: Response time on sharing Information

Related Use Case

Name: Using Playdate System

Number: 4

Purpose:

Ensures the profile sheet information shared between two Agape Users is quick and reliable.

Procedure Steps: (Guided by Main flow or other flows of Use case)

1. The tester exports a information sheet of the child and selects which information are to be printed.
2. System displays the final document of what it will contain.
3. The tester confirms the information shared are correct.
4. The system prompts user which Agape User they would like to share the file to.
5. The tester picks a verified Agape User from their account.
6. The system immediately sends this to the other user.
7. The other user adds the new sheet information into their file and is able to visit this when checking for the child's allergies or other important information.
8. The tester is made aware that the information has been sent.
9. End of Test Case.

Expected Results:

The user promptly sends the information of their child to their playdate's parents to assure the safety of their child. The user can rely on the system's fast response and efficiency.

Test Case for Medication Reminders

Test Case Number: 8
Test Case Name: Medication Reminders
Related Use Case Name: Using Medicine System Number: 3
Purpose: Ensure that users who had permitted notifications for the application will receive reminders regarding upcoming medication on the set time and date.
Procedure Steps: (Guided by Main flow or other flows of Use case) <ol style="list-style-type: none">1. The tester adds a new medicine profile.2. The system prompts for medication details such as; name, description, quantity and duration.3. System checks for any duplication of that same medication.4. System requests the tester if they would like to set a reminder.5. The tester adds the time, date and duration of the medication.6. The system adds this information on the scheduler system.7. The system continues to alert the user about the medication on the provided time, date and for the length of that duration.8. End of Test Case.
Expected Results: The user successfully adds a reminder. The application reminds the user about the medication on the set time and date.

Summary

I have now completed the preparation of the requirements engineering for my application, Agape. This project is dedicated to better the lifestyle of new parents as they begin the unpredictable path of parenthood. The application offers a range of services, including camera and story reels, tips and lessons, life passport, calendar and trackers, albums, playdate functionality, and, for premium features, geo-fencing, and GPS tracking. These features are carefully designed to strengthen and nurture a deep relationship between parents and their children.

Agape stands as a firm commitment to guiding parents through the challenges of parenthood. By providing them with a set of tools and resources, the application aims to support parents, promoting a healthier and more organised lifestyle for both them and their children. With Agape, the focus is to enhance the parenting experience and contribute to the term of unconditional love in which defines the beautiful journey of raising a family.