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**Agape or NanAi**

ZEDEV\_

Report Incomplete

Work in progress [WIP] through labs/assignments.

Template provided for assignment attached below the report.

Lab Submission updated on the template and Sunday Submission updated on the report.

With this report, I also attached a copy of my lab notes (via Brightspace) that shows my re-search and rough ideas of the topics I will be using for this assignment.

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# Abstract

[Agape] is developed to aid newly parents looking for guidance and support through their new set of paths of upbringing a family. This application contains features such as pregnancy tracker, calendar & reminders, tips & lessons, availability to connect with other parents as well as a family shared memory book-keeping of the key moments one wants to share.

[Agape]’s aim is to aid throughout this unknown path of parenthood for a healthier, more organised lifestyle.

[NanAi] aims to assist patients suffering with dementia and will provide help through our key features of calendar & task management, available exercises & activities, AR navigation feature, assist through daily life via [NanAi], geo-fencing function and other more.

[NanAi+] is an advanced version for professional uses only. Additional features contain but not limited to, recording/documentation of one or more patient’s progression, creating exercises & activities, setting timely reminders and notes, etc.

[NanAi] is a set of helping tools contained in one application for easy access to support and guidelines for individual’s suffering with dementia or guardians/medical professionals caring for individuals suffering with dementia.

## 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; *[Agape] new parents and [NanAi] individuals suffering with dementia or caregivers caring for individuals suffering with dementia.*

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…

***[Agape]***

* *Pregnancy Tracker*
* *Calendar & Reminders*
* *Tips & Lessons*
* *Network with other users/parents*
* *Memory book-keeping*

***[NanAi]***

* *Calendar & Reminders*
* *Exercises & Activities*
* *AR Navigation*
* *Geo-Fencing*
* *Assistance via task management feature*
* ***[NanAi +]*** *provides further features such as, recording/documentation of an individual or individual’s progression, creating exercises & activities, set timely reminders & notes, medicine and food tracker, etc.*

…as well as 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.*

***Disclaimer: Template provided for the assignment attached below.***

# Requirements Engineering

## Feasibility Study

### Similarity

Are there apps like this in the marketplace (in Android, iOS, Windows …)?   
Identify at least 4 examples of Similar Apps. Briefly describe each of them.

Reference the URL for each.

**[Agape]**

* Glow Baby: AI Newborn Tracker (iOS)

The app provides a tracking device for parents for the baby’s breastfeeding, sleep, diaper, and nursing & feeding cycle, as well as, parenting resources via AI powered insights.

*Ref. “Glow Baby: AI Newborn Tracker”, 2022, Glow,* [*https://apps.apple.com/ie/app/glow-baby-ai-newborn-tracker/id1077177456*](https://apps.apple.com/ie/app/glow-baby-ai-newborn-tracker/id1077177456)*, 24th of September, 2023.*

* Baby Tracker! (iOS)

The app is a feeding, sleep, diaper, and breast pumping tracker that allows parents to have an insight of the baby progress as well as allows them to bookkeep pictures, measurements and medicine information.

*Ref. “Baby Tracker!”, 2020, Amila,* [*https://apps.apple.com/ie/app/baby-tracker/id1444238371*](https://apps.apple.com/ie/app/baby-tracker/id1444238371)*, 24th of September, 2023.*

**[NanAi(+)]**

* Alzheimer’s Manager

The app contains a progress & symptom and medication & treatments tracker that directly sends updates to caregivers about the individual’s condition. A forum is available for individuals to keep up-to-date with information on dementia as well as allows them to keep a journal of their routine.

*Ref. “Alzheimer’s Manager”, 2023, @Point of Care,* [*https://apps.apple.com/ie/app/alzheimers-manager/id1364064302*](https://apps.apple.com/ie/app/alzheimers-manager/id1364064302)*, 24th of September, 2023.*

* Timeless | Care

The app provides an easier and simple UI for individuals with dementia, including a contact page that shows the individual’s face for easier recognition as well as daily trackers & notes for medicine reminders and other activities for the day. The app also allows individuals to keep categorised photos of family, friends and caregivers to assist in remembering the people they encounter on the daily basis.

*Ref. “Timeless | Care”, 2019, Timeless Innovations, LLC,* [*https://apps.apple.com/ie/app/timeless-care/id1439644684*](https://apps.apple.com/ie/app/timeless-care/id1439644684)*, 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)

**[Agape]**

* Glow Baby: AI Newborn Tracker (iOS)

Features provides; baby, breastfeeding, sleep, diaper, and nursing & feeding tracker, parenting resources, AI powered insights, and pump log.

* Baby Tracker! (iOS)

Features provides; feeding, sleep, diaper, and breast pumping tracker as well as a baby log (pictures, measurements and medicine).

**What makes [Agape] different?**

* Consistent reminder of the baby’s age from 0 – 12 months. End of Year, [Agape] will provide a year album containing a photo of the baby each month.
* Daily tips & facts to look forward for the first year. (Example: Teething, crawling, conscious awareness, etc.)
* Availability of guidance and support after pregnancy and baby period.
* Medical Passport; keeping track of medical history such as vaccinations, allergies, sick periods, appointments, etc.
  + Ability to export to a PDF/other file type to be shared with family doctor or relevant department.

**[NanAi(+)]**

* Alzheimer’s Manager

Features provide; progress & symptom and medication & treatments tracker, update directly to caregivers about condition, forum on up-to-date information on dementia, daily journaling and log analysis.

* Timeless | Care

Features provide; network availability with friends & family, photo-sharing, daily reminders, contacts availability, and a face reminder book.

**What makes [NanAi(+)] different?**

* Two different UI depending on user; individual and caregiver UI.
* Geo-fencing allows to keep track of the individual’s location and daily routine for safety. Alert caregiver/emergency contact in cases of abnormal activity.
* AR navigation allows the individual to re-track steps via watch/bracelet or directly on phone. (Watch/bracelet’s ability to identify if an individual picks or drops an item.)

### User’s access to resources

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

**[Agape]**

Prior Agape, users gain information from different sources such as;

* Paediatrician or Family Doctor responsible for guiding family with pregnancy providing information about parenting.
* Existing parenting lessons/events that contains various topics of upbringing a child or the journey of pregnancy.
* Midwives or Doula professionals supports.
* Trusted online re-search, books, and articles.
* Other similar applications, on browser or mobile.

**[NanAi]**

As NanAi supports users within the medical environment, access to records and information are limited due to privacy and security concerns but is still accessible through;

* Relevant Doctors/Nurses responsible for the patient could provide medical documentation which are recorded within the hospital/nursing home’s system or physical records secured in a private area.
* Information about Dementia could be searched on trusted online platforms, books, or events (ex. Dementia Awareness).
* Other similar applications, on browser or mobile.

### About [Agape] and [NanAi]

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]**

[Agape]’s aim is to assist new parents through the hardships of parenthood by providing tools that will support and ease everyday life.

Main features include;

* Forum Page (aka News Feed)

This platform allows parents to connect with other parents and be able to share tips, ask advises, or any information they would like to share. The goal is to show that they are not alone in their journey.

* + Write and Post
  + Photo attachment should prompt a warning message.

“You are about to publish a photo online. Agape advises that this photo should not include … + photos of your kids for their protection. Are you sure you would like to go ahead?”

* + Category availability (#)
    - Search Bar or Filter # (ex. #Rash Will direct to related posts about rash that other parents have included.)
  + Comment Section only exists on Q&A type of post.
* Tips & Lessons

This section includes information about raising a child, referrals to good books/articles, and daily facts/tips.

* + Lessons feature will have a list of exercises that the user can practice in.

(Example: Connecting with a baby. Babble talk will affect their speech learning, but it is also difficult for babies to understand a normal speed of talking. Emphasis on vowels as well as words rather than sentences. E.g., “AH-ppeul.”

* + Tips feature is a daily prompt message of random facts about parenting. “Feeding: Shaking the bottle will form bubbles or foam in which will cause the baby to swallow more air. Let the bottle sit until bubbles have disappeared or swirl the bottle when mixing formulas softly.”
* Life Passport

This is a record book of the child sensitive information such as; name, birthdate, address, emergency contact, specific diagnosis, medicines, allergies, vaccinations, as well as, sick day tracker. This allows the parent to keep medical information of their child in one place.

* + The book or chosen pages is available to be converted to a PDF.
  + Categories;
    - Basic Information: Name, Birthdate, Address, Doctor (Contact), and emergency contact.
    - Other Information: Diagnosis & Allergies
    - Medicines: Name and description & quantity, and duration with a scheduler.
    - Appointment Tracker Book & Scheduler
    - Vaccination Book
    - Sick Day Book
* Album & Camera

This feature allows parents to capture key moments of their child and store these into an album.

* + 0-12 months: App will remind user to capture a monthly photo of their baby. EOY, users can opt to buying an album or saving the photos.
  + General Album: Parents can take photos and save them via app storage/directly on phone. Yearly, users can opt to buying an album, SD card, or saving photos of their choice.
* Calendar, Reminders, and To-Do List

Users can schedule appointments, set reminders, or create a to-do list (ex. Groceries) to be organised.

* Calendar: Users can directly set appointments unto the calendar and medical appointments set in Life Passport will sync here. Reminders will be automatic if user did not manually set a timer.
* To-Do list: Groceries is a default list that will allow users to write what needs to be bought for their child. Example, If diaper tracker is available, this can auto-add Diapers on the list on set date. Other lists could be added/removed based on user preference.
* Trackers;
  + Sleep
  + Feeding & Pump
  + Diaper (Option to add number of diapers. Logs will reduce this number and will set a reminder in Groceries for diapers if it reaches a set number.)
  + Potty Training
  + Etc. Trackers can be added and removed based on user preference.
* Geo-Fencing/GPS:
  + A small pendant which contains the tracking device (produced by Agape) can be bought for this feature. This feature exists for the protection of the child. Example: Child Trafficking.
  + Geo-fencing around the house can also be implemented to locate the child. Example: In the kitchen or walked out of the back garden via gate.

Note: This is legal if the child is under 18 and is under the supervision of the parent/guardian. May or may not add this feature due to ethical reasons of the child’s privacy.

* Connection with other parents. Create profiles (Directly update online):
  + Share names and contact information.
  + Address (Enable Mode)
  + Shared pages of the Passport Book. (Ex. Allergies) Sensitive data to be shared will prompt a message to user about the danger caution of sharing.
  + Customisable note:

Example:

Ross has a playdate scheduled with Ashley. Ross parents can add Ashley’s Parents on the app. This will create a profile for Ashley in friends and will include information such as;

Name: Ashley Smith

Parents: John Smith, Holly Smith

Contact: +353 87 837 8893

Allergies: All nuts.

Note: Ashley has autism, may need extra care when environment is overwhelming.

No sugars after 5PM.

**[NanAi]**

[NanAi]’s aim is to support patients with dementia to be able to gain back a little independence to their daily lives.

Main features include;

* Medical Passport: This allows users to keep their medical history, appointments, and other important notes in one place. These include:
  + Basic Information: Name, Birthdate, address, doctor, and emergency contact.
  + Other Information: Diagnosis & Allergies
  + Medicines: Name and description & quantity, and duration with a scheduler.
  + Appointment Scheduler
* Calendar, Task Management and Hour Reminder
  + Calendar: Will include set appointments
  + Task Management: Auto-reminder for medicines and food

Hour Reminder: Prompt reminder of location and time.  
Ex. “It is 3PM, we are at The Grand Plaza.”

* + Photo Book: Will contain profile images of family, friends, and user. Reminder of who they are and their relationship to the user.
* [AR]: Via Bracelet/e-Watch, user can record when item is picked or dropped. Allows user to re-trace steps via step tracker.
* Geo-Fencing: This is an asset to keeping the individual within an area and alerting guardian/emergency contact if user leaves unexpectedly.

Example: 3AM, went out to walk to the supermarket.

* Big Main Button for emergency contact. Could also create widget on watch/phone for direct use.
* Diary with log analysis of how the user is feeling.

### Stakeholders

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

1. Funding and source of income
   1. End Users with memberships and products sold.
   2. Advertisements and sponsers from branded related companies.
      1. [Agape]: Pampers, Huggies
   3. Collaboration to be labelled on the app.
2. End Users:
   1. [Agape]: Guardians, new parents, nannies, and any individuals raising a child(ren).
   2. [NanAi]: Guardians, nurses/carers, medical professionals, individuals with or taking care of indiviuals with dementia.
3. IT Department;
4. Front-end responsible for UI
5. Processing responsible for data workload
6. Back-end responsible for securing the system
7. Business Department;
8. Operations responsible for the workflow of the business
9. Legal responsible for keeping the system compliant to the law and legislation.
10. Marketing and media is responsible for advertising product and services as well as finding other companies to partner with.
11. Sales is responsible in selling the products and services of what the app is offering.

### Other Research Methods

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

* What the app’s actual purpose in detailed. What assistance do users actually need?
* Separate intersting features (want) from what is in demand (need). Identify the areas of struggles and provide solutions.
* Experience the environment, what key factors does users struggle in and what can the app provide? Ex. How busy are the nursing homes?
* Direct re-search from using existing applications.
* Layout of end user profiles; differing experiences, tasks, and needs.

What is their lifestyle or routine? Assist and not change habit.

* What is the market like? How are medical industries regarding new softwares? How open are parents to trusting technology about their chid?

### Functions and Non-Functions

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

**Function**

* Registration and authentication of Life and Medical Passport
  + Email validation
  + Email accesibiltity verification
  + Confirmation of Terms and Conditions
    - Legality and Regulatory requirements
* Authorization levels
  + [Agape] users can choose what information to share with contacts and what stays private
    - Prompt when sharing information
  + [NanAi] is for patients which includes activities and basic features of the app. [NanAi+] are for guardians of the patients which has additional features such as, editing, adding or removing activities/exercises.
* Reporting System and log analysis feature
  + Weekly/Monthly report to be sent to users via Email with a PDF file
  + Yearly Albums on [Agape]’s Album feature

**Non-Function**

* Email verification should arrive within 3 minutes upon registry to verify account.
* Authorisation prompt should appear when accessing Life and Medical Passbook.
* Upon registry, [NanAi]’s system should allocate the appropriate UI for the user. Individual or caregiver UI?
* Security
  + If user forgets code to access passbook or account, code can be sent to email and/or trusted user (aka Guardian) can directly update or access this.

## Requirements Elicitation

### Ethnographic Methods

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

[Agape]

Ethnographic methods could be used in this case study as finding the common tasks between experienced and inexperienced parents/guardians will help identify what main features would better support them throughout their daily routine.

Throughout these methods, we can also highlight areas of parenting in which inexperienced parents/guardians find challenging. In addition, we can note advises or new methods from experienced parents/guardians that they may have learnt throughout their parenting journey.

Being in the same environment and mindset of the parents and their child, we can understand the obstacles that they face, hence, providing beneficial and useful services.

[NanAi]

As this application provides support for people with dementia, it is best to understand the diagnosis and the impact it will have on an individual directly from professionals – Doctors, Nurses, and Carers - that has first-hand experience.

The information gathered will give insight to the different types and phases of dementia and allows us to pinpoint how far NanAi can support individuals suffering from it.

Another set of groups that is highly valuable to this project, are individuals who has early onset dementia; early phase of the diagnosis. Identifying what difficulties, they face and how they feel regarding their condition will help us find the appropriate aid that would alleviate their struggles.

### 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.

End-users, first-time parents (Agape)/individuals with dementia (NanAi) are the top priority stakeholder as they will be the main users for this system. Understanding their difficulties will highlight their needs in which will identify what key features the system should have.

[Agape]

End-users for this project are all types of parents or guardians.

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?

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

[NanAi]

End-users for this project are medical professionals familiar with dementia and individuals suffering from early onset dementia.

For the questions below, medical professionals will be asked about their patients.

Example: Carers who have directly nursed patients with dementia. “What is their daily routine?”

1. What is your daily routine?
2. What obstacles do you find throughout the day due to your condition?
3. What resources do you use to support your day-to-day tasks?
4. What tasks do you most commonly do in your day-to-day life?
5. What activities do you find difficult to handle?
6. How does your diagnosis impact your life?
7. How often do you forget to eat or when you have last eaten?
8. How often do you find yourself forgetting a task or the location you have placed an item?
9. What activities did you enjoy when you were a child?
10. What are you most worried about regarding your diagnosis?

#### Questionnaires

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

The same stakeholders as mentioned in *Interviews*.

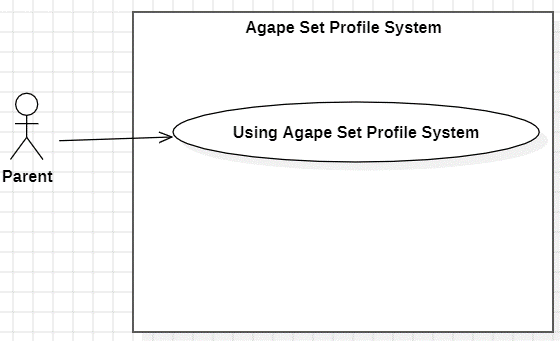
Where 1 is Strongly Disagree and 10 is Strongly Agree, from 1-10, rate how you feel regarding the statements below:

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.

### Requirements 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.



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.

[Agape]

*Figure 1: Use Case Diagram of Agape Set Profile System (StarUML)*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **USE CASE** | | 1 | Using Agape Set Profile System | |
| **Description of Goal in Context** | | User is able to set a profile for the child. | | |
| **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 has succesfully set up a profile for their child(ren) and connect with other relevant Agape user.  Mother and Father has an account each, sharing the same child profile. | | |
| **Post Conditions, Failed End Condition** | | Profile will not be created if mandatory fields are not correctly filled. | | |
| **Actors** | | Parent/Guardian | | |
| **Trigger** | | User clicks add (+) to create a new profile for a child. | | |
| **DESCRIPTION** | | The user (aka parent/guardian), will set up the child’s profile which will create a record book and allow access to services provided through Agape’s system. | | |
| **Main Flow (MF)** | | | | |
| **Step** | **Action** | | | **Alternate** |
| 1.1 | User clicks (+) to add a profile for a child | | |  |
| 1.1.1 | System will check storage space. | | | EF.1.1.1 |
| 1.2 | System will prompt user to input child’s basic information: Name, sex and birth-date. | | |  |
| 1.3 | User inputs basic information. | | | EF.1.3 |
| 1.4 | System checks if child has been added to the account already. | | |  |
| 1.5 | System updates user’s account with a new child profile. | | | EF.1.5 |
| 1.6 | User adds secondary emergency contact via connecting to another Agape user. User is default primary contact. | | |  |
| 1.7 | System authenticates the secondary user account. | | | EF.1.7 |
| 1.8 | Secondary user accepts prompt verification on their account. | | | EF.1.8 |
| 1.9 | System requests primary user the level of authorization to be shared. | | |  |
| 1.10 | Primary user chooses level of authorization to the child’s profile. | | |  |
| 1.11 | System shares profile (based on what authorization level) to be saved on secondary user’s account. | | |  |
| 1.12 | System adds secondary user as an emergency contact to the child’s profile. | | |  |
| 1.13 | User has created profile for the child and connected to relevant Agape user(s). | | |  |
| 1.14 | End use case. | | |  |
| n… | **<…>** | | |  |
|  | | | | |
| **EXCEPTIONS or ERROR Flow Description**  EF.1.3  Error flow at MF.1.3 : Mandatory fields are not filled appropriately. | | | | |
| **Step** | **Branching Action** | | | **Alternate** |
| 1.3.1 | Notify user that all fields need to be filled. | | |  |
| 1.3.2 | User fills missing information. | | |  |
| 1.3.3 | Go to MF.1.4 | | | MF.1.4 |
|  | | | | |
| **EXCEPTIONS or ERROR Flow Description**  EF.1.5  Error flow at MF.1.5: Child details matches existing profile. | | | | |
| **Step** | **Branching Action** | | | **Alternate** |
| 1.5.1 | Notify user that child information matches an existing profile already. | | |  |
| 1.5.2 | User updates the profile to new details. | | | EF.1.5.2 |
| 1.5.3 | Go to MF.1.5 | | | MF.1.5 |
|  | | | | |
| **EXCEPTIONS or ERROR Flow Description**  EF.1.5.2  Error flow at EF.1.5: User does not update child details | | | | |
| **Step** | **Branching Action** | | | **Alternate** |
| 1.5.2.1 | Notify user that child information matches an existing profile already. | | |  |
| 1.5.2.2 | User cancels profile creation. | | |  |
| 1.5.2.3 | End Use Case 1 | | |  |
|  | | | | |
| **EXCEPTIONS or ERROR Flow Description**  EF.1.7  Error flow at MF.1.7: Secondary User is not an existing Agape User Account | | | | |
| **Step** | **Branching Action** | | | **Alternate** |
| 1.7.1 | System notify user that secondary user does not exist. | | |  |
| 1.7.2 | User updates information. | | |  |
| 1.7.3 | Got to MF.1.8 | | | MF.1.8 |
|  | | | | |
| **EXCEPTIONS or ERROR Flow Description**  EF.1.8  Error flow at MF.1.8: Secondary User does not accept verification. | | | | |
| **Step** | **Branching Action** | | | **Alternate** |
| 1.7.1 | System notify user that secondary user did not accept to be added as an emergency contact. | | |  |
| 1.7.3 | Got to MF.1.13 | | | MF.1.13 |
|  | | | | |
| **EXCEPTIONS or ERROR Flow Description**  EF.1.1.1  Error flow at MF.1.1.1: No Available Storage | | | | |
| **Step** | **Branching Action** | | | **Alternate** |
| 1.1.1.1 | System Notify User that there is no efficient storage space to set a new profile. | | |  |
| 1.1.1.2 | User pays for more storage | | | EF.1.1.1.2 |
| 1.1.1.3 | Go to MF.1.2 | | | MF.1.2 |
|  | | | | |
| **EXCEPTIONS or ERROR Flow Description**  EF.1.1.1.2  Error flow at MF.1.1.1.2: User does not pay for more storage | | | | |
| **Step** | **Branching Action** | | | **Alternate** |
| 1.1.1.2.1 | System notfies user that it is unable to create new profile. | | |  |
| 1.1.1.2.2 | End Use 1 | | |  |
|  | | | | |
| **ALTERNATIVE or VARIATION Flow Description** | | | | |
| **Step** | **Branching Action** | | | **Alternate** |
| n.m.1 | <condition causing alternative>  <list of variation>  <Action, steps of scenario to goal delivery> | | |  |
| n.m.2 | <Action, steps of scenario to goal delivery> | | |  |
|  | | | | |

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, if no profile (child) is set, user is unable to avail of Agape’s services. | |
| **Product: Performance** | Response time is essential. Verification of secondary user should prompt immediately and return error message to user if account does not exist.  Confirmation of secondary user to accept child profile should prompt no more than 2 minutes and notify primary user if secondary user accepted or declined request. | |
| **Product: Efficiency** | Storage is shared via cloud storage. Limited to free storage. | |
| **Product: Reliability** | Must operate correctly 99.9% of the time, accesible any time and could have a down-time at night for updates/etc.  Shared acorss devices for ease of portability. | |
| **Organisation: Standards** | <company standards for development, documentation etc.> | |
| **Organisation: Delivery** | <approach to deploying systems to users> | |
| **External: Legislation** | <Privacy, data protection, data retention rules, safety etc.> | |
| **External: Ethical** | <appropriate usage: is it appropriate for the target user> | |
| **Frequency** | <how often it is expected to happen> | |
| **Channels to actors** | <e.g. interactive, static files, database, timeouts> | |
| **OPEN ISSUES** | What should occur if secondary user declines adding child profile in their account? How is shared storage work? Shared payment between users sharing the same child? | |
| **Due Date** | Given duration to fix open issues: 2 weeks  Release date: EOM | |
| **…any other management information…** | Manager is respoinsble for deciding on open issues. | |

**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***

Report Incomplete

Work in progress [WIP] through labs/assignments.

Template provided for assignment attached below the report.

Lab Submission updated on the template and Sunday Submission updated on the report.

With this report, I also attached a copy of my lab notes (via Brightspace) that shows my re-search and rough ideas of the topics I will be using for this assignment.

# TEMPLATE

**Description**

The objective 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 …

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 . . .

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

The project will choose an appropriate architecture . . .

**Requirements Engineering**

**Feasibility Study**

1. Are there apps similar to this in the marketplace (in Android, iOS, Windows …)?

Identify at least 4 examples of Similar Apps. Briefly describe each of them. Reference the URL for each.

[Agape]

This idea is similar to many apps but does not exist in one application.

Most apps are focused on pregnancy journey’s rather than an app that guides new parents.

Examples: BabyCentre, Baby Tracker both allows to schedule and record pregnancy with continuous updates on information about babies at each stage.

[NanaI]

This idea is to help elderlies/patients suffering Dementia(?)

Examples:

MindMate – Activities that helps with memory, food reminders, workout feature, etc.

Elli Care – Appointment Scheduler, Location Tracker, Medication Notifications, Network availability with Family/Friends

1. 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)*

[Agape]

* Guidance to pregnancy
  + Facts & Lessons
  + Tracker of pregnancy, Notepad
  + Schedule/Calendar
* Guidance to 0-X yrs, where X will be decided throughout the project.
* Memory Book Feature
* Connection between both+ parents
* Important Schedule Reminders, etc: Dr. Appointments etc
* Selling (Like Adverts.ie) for second-hand baby/kid items.

[NanaI] (Depending on severity, this could be used for the patient via caregiver or directly from user with early stages)

* Help towards elderlies/people suffering from Dementia.
* Records/Reminders of DR appointments/medications
* Location availability shared with family/friends or emergency contact
* Network across Family, Friends, Guardians

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

[Agape]

* Hospitals refer parents to seminar sessions/events that theyre aware of
* Specific lessons during pregnancy
* Google Searching
* Existing applications on browser
* Books/Articles
* Midwives/Doula - Professionals

[Nanai]

* Same and…
* Documentation in medical services
* Less accessible due to the privacy emphasis within the medical industries

Data is more-likely recorded in archives within systems or physical records locked in storages

* Professionals -> Nurses & Carers assistance
* Activities – Events

1. 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]

* Forum Page/”News Feed” of other parent posts
* Tips & Lessons (Include: Goal tracker?) + Collab. with local events for parents\*
* Life Passport: Basic info; name, address, emergency contact, dr, diagnosis (autism, adhd, etc), medicines, allergies and vaccination book, sick day recordbook
* Album 0m-12m and Photo Album of memories - camera (Yearly album post)
* Calendar & reminders, to-do list (ex. Groceries)
* Baby trackers: sleep/feeding & pump/diaper (counts how many and -one when used = reminder to buy when less than 10) \*\* Disappear feature after X months -> Change to Potty training tracker (Tracker list, user adds what they want?)
* Connection with other parents (Share: contact numbers, names, @) ex. Play Date, Child: Ashley Smith, Parents: Mr&Mrs Smith, Phone: xxx, Important Notes: Allergies has been shared,,, Note: Ashley has autism – may need extra care when environment is overwhelming, no sugars after 5. (Click name and immediate call, emergency precautions)
* Tracker (GPS)\*\* maybe – legal if child is <18 | products, accessories or just a small pendant – parents choice how to attach (Cases of childtrafficking, etc) + geo-fencing in the house, notifies if child outside the gate or kitchen. Danger caution.
* Several child profiles

[NanAi]

* Medical mini Passport: med. Appointment History and Basic info; name, address, emergency contact, dr, medicines, allergies
* Activity/ Exercises (ex. Affirmations) | Planner/Set up w (+)
* Calendar, task-management (food/medicine) and hourly reminder of (when and where)
* Photo book; family, friends and self introductions
* [AR]: dist,depth,space calc, [bracelet/iwatchfitbit] detect when picked or dropped an item, steps tracker (gps) – geofencing
* Diary with log analysis
* Big button = emergency contact
* (+) Several patient profiles

**\*CONSTRAINTS = GOOD – Less error, cost effective**

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

**FRIDAY CLASS – will update in report**

[Agape]

* Funding fr. End Users (Membership & products\*) and Ads (Role; Business Department) & sponsers (source of ed for lessons and tips, name branding, support from baby items (ex. Pampers, Huggies)) in exchange to be part of the app
* End Users; guardians, new parents, nannies; individuals raising a child(ren)
* 3 IT role department; front end (UI), processing (data) and back-end (security)
* 4 Business; Operations, Legal, Marketing & Media, Sales

[Nana] Same but, end users are: Nursing Care & caregivers or individuals with or caring for someone with dementia // Sponsors: ???

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

Research about…

* What assistance is actually needed
* Separate “interesting” features (want) to what is in demand (need)
* Struggles/issues within the environment (How busy caring facilities are)
* \*\* Direct re-search by using existing softwares
* Different experience/tasks/needs per end user
* Lifestyle/routine of end-users and what they are used to (looking to assist and not change their habits)

market/connect with…

* Medical industries, trgt: nursing homes but may also include mental facilities
* Withing caregivers/nursing schools to introduce into using during their careers
* Same but with pregnancy classes&ed/hospitals/brands

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

Functional

* Registration & Authentication on Passbook
  + Email Validation and Accesibility
  + Confirm Terms and Cond. (Update per changes)
    - Legality and Regulatory Requirements for both
* Authorization Levels ex. Nanai and Nanai+
  + What is shared public and private
  + Prompt when sharing information
* Reporting system, log analysis feature
  + Weekly (Trackers)
  + Monthly ()
  + Yearly (Ex. Album on Agape)

Non-Functional

* Email for verification should arrive within 3 minutes upon registry
* FaceID, fingerprint or code verification to open the passbook
* Upon registry, system must allocate the appropriate UI. (Ex. Nanai or (+))
* Security – if user forgets (Nanai), code can be sent to a trusted user from (+).

**Requirements Elicitation**

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

[Agape]

Yes, connection with parents (experienced) and parents (no experience) to make a list of common routines/actions. What parents with no experiences lack or struggle in and what experienced parents could advise or do to make their tasks easier.

Being in the same environment and mindset of the parent and child would help identify needs better.

[NanAi]

Speaking with Carer, Doctors and Nurses or any medical professional that have worked with dementia patients to further give an insight of dementia and how it affects a person.

People with early onset dementia – see what frustrates them due to their condition. What aid could alleviate their daily struggles.

1. Identify a significant stakeholder(s), which will be **interview**ed 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.

[Agape]: (For both new and old parents/guardians)

1. What is your daily routine (morning, noon-evening, night)? How do you feel at the start of the day and at the end of the day?
2. What do you find stressful/frustrating during your routine?
3. What resources do you use to alleviate your workload? (To-do lists?)
4. What worries do you have regarding parenthood?
5. What are things you are afraid/ashamed to ask other parents or in general regarding parenthood?
6. How do you organise your day-to-day plan during parenthood?
7. Where do you store sensitive/medical records of your child?
8. How do you assure your child’s safety outside of the house?
9. How often do you forget your child’s friend or parents names? Would knowing that child’s allergies/important notes be beneficial during play dates?
10. What would advise a couple/individual who is planning to start a family? / who is about to enter parenthood?

[NanAi]: people with early dementia)

1. What is your daily routine?
2. What obstacles do you find throughout the day due to your condition?
3. What activities do you find difficult to handle?
4. How often do you find yourself forgetting a task or the location you have placed an item?
5. What other resources do you use to support your day-to-day tasks?
6. What activities did you enjoy when your were a child?
7. What tasks do you most commonly do in your day-to-day life?
8. How often do you forget to eat or when you have last eaten?
9. How does your diagnosis impact your life?
10. What are you most worried about regarding your diagnosis?
11. Identify a significant group of stakeholders, which will receive **questionnaires**.

Justify your choice of stakeholders.

The questionnaire should have approximately 10 questions.

For both end-users as mentioned above;

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

1. I am great with technology. Ex. Phones, Tablets or Laptops.
2. I trust devices, such as my phone, to secure/store my medical information
3. I trust devices, such as my phone, to secure/store sensitive information such as name, address, contact information, age, etc.
4. I often use e-tools (e.g. applications) to support my day-to-day tasks.
5. I find reading on devices easy.
6. I often forget my passwords/access information on my accounts
7. I find it fast and easy to learn how to use new devices
8. I often use accessibility tools on my devices Ex. Text-to-speech
9. I find it easy to navigate through my phone
10. I have a phone or an equivalent device, ex. Tablet/laptop

**Requirements Analysis**

1. 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.

System Name

(Automated Library System)

Actor

(Student)

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** | | <number> | <Name of Use Case>  <the name is the goal as a short active verb phrase> | |
| **Description of Goal in Context** | | <a longer statement of the goal for this Use Case in context > | | |
| **Preconditions** | | <what we expect is already the state of the system>  <list> | | |
| **Post Conditions, Success End Condition** | | <the state of the system upon successful completion> | | |
| **DESCRIPTION** | | < The use case description is a paragraph identifying behaviour, it comes from the requirements gathering> | | |
| **Main Flow** | | | | |
| **Step** | **Action** | | | **Alternate** |
| n.1 | <put here the steps of the scenario from trigger to goal delivery, and any clean-up after> | | |  |
| n.2 | **<…>** | | |  |
| n.3 | **<…>** | | |  |
| n.4 | **<…>** | | |  |
| n.5 | **<…>** | | |  |
| n… | **<…>** | | |  |
|  | | | | |
| **EXCEPTIONS or ERROR Flow Description** | | | | |
| **Step** | **Branching Action**  < Exception number m of Use Case n> | | | **Alternate** |
| n.m.1 | < condition causing exception>  <Action, steps of scenario to goal delivery> | | |  |
| n.m.2 | < condition causing exception>  <Action, steps of scenario to goal delivery> | | |  |
| n.m.3 | < condition causing exception>  <Action, steps of scenario to goal delivery> | | |  |
| n.m.4 | < condition causing exception>  <Action, steps of scenario to goal delivery> | | |  |
|  | | | | |
| **ALTERNATIVE or VARIATION Flow Description** | | | | |
| **Step** | **Branching Action** | | | **Alternate** |
| n.m.1 | <condition causing alternative>  <list of variation>  <Action, steps of scenario to goal delivery> | | |  |
| n.m.2 | <Action, steps of scenario to goal delivery> | | |  |

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 the system to borrow Book |
| **Priority:** | <how critical to your system/organization> | |
| **Product: Performance** | <Process and memory capacity, throughput, response time> | |
| **Product: Efficiency** | <level of memory usage, processor usage etc.> | |
| **Product: Reliability** | <likelihood of correct operation over a period of time> | |
| **Organisation: Standards** | <company standards for development, documentation etc.> | |
| **Organisation: Delivery** | <approach to deploying systems to users> | |
| **External: Legislation** | <Privacy, data protection, data retention rules, safety etc.> | |
| **External: Ethical** | <appropriate usage: is it appropriate for the target user> | |
| **Frequency** | <how often it is expected to happen> | |
| **Channels to actors** | <e.g. interactive, static files, database, timeouts> | |
| **OPEN ISSUES** | <list of issues awaiting decision affecting this use case> | |
| **Due Date** | <date or release needed> | |
| **…any other management information…** | <as…needed> | |

**More Systems Analysis**

1. 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

12.5

Open the Systems modelling report from last week. Complete a third iteration of use case modelling. Identify two appropriate use case for further analysis

Based on the lecture notes, later this week, decompose 2 use cases and related Actors into analysis classes.**Requirements Specification Matrix**

1. 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 tobe included and review section 7 for additional features

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Req ID** | **Name of Req** | **Description** | **Priority** | **User Contact** |
|  |  |  |  |  |
|  |  |  |  |  |
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**System Modeling**

From the systems analysis and the requirements table additional features and actors can be identified.

Normally this would be done through additonal 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.

1. List all the possible *actors* in this system.
2. List the possible *use-cases* in this system.

**Verification and Validation of Requirements**

1. 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

|  |
| --- |
| **Test Case Number: 1** |
| **Test Case Name: Check Borrow Book** |
| Related Use Case  Name: Borrow Book  Number: **1** |
| **Purpose:**  **Confirm the main flow for Borrow book** |
| **Procedure Steps:** (Guided by Main flow or other flows of Use case)   1. The tester will present valid identification 2. System indicates borrower is authenticated 3. Tester enters a valid book name, that is available 4. System indicates book is available 5. Tester asks for book 6. . . . 7. . . . |
| **Expected Results:**  **All steps worked as expected for the main flow** |

**Completing the Feasibility Study**

**Review Previous Versions**

1. Before you complete the final submission of the feasibility report, review and update the nonfunctional requirements, if necessary.
2. Review and, if necessary, Update the requirements Specification Matrix, section 13, and identify the high level core system features

**An Updated Requirement Specification (RS) & set of Use-Case Diagrams (UCD) with narratives**

1. Consider the Use case Model to be sure key functionality has been addressed in the analysis and modelling process.
   1. Do any of your use-cases need to be broken down further i.e., is there is too much functionality in one use-case?
   2. Update the Use Case list in section 15 as necessary.
   3. Update your Requirement Specificationtable with additional requirements as necessary.

**Prototype**

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

**Functional & Non-Functional Test-Cases**

1. Write 3 additional test-cases (using the test-case template) for each of three abstracted **high priority** *functional* requirements (one test-case per requirement/use case).
2. Write 2 additional test-cases (using the test-case template) for each of the two **most important** *non-functional* requirements (one test-case per requirement).