Universiti Sains Malaysia
School of Computer Sciences

CAT404 – Software Engineering Major Project

Project Proposal - Group Introduction

[Fam1st: Family Engagement System]

[SE22230006]

[Developer x Family]

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Abstract

This project namely "Family Engagement System" with 3 subsystems: Contact and Appointment subsystem, Child Education Tracking subsystem and Finance Monitoring Subsystem. Contact and Appointment subsystem aims to connect all the family members and manage appointments with each other. It could display all the family events and helps to schedule as well as remind the family members about upcoming events. Family members can discuss the events with each other using the chat system. Child Education Tracking subsystem aims to keep track of children's study matters. Parents can see their children's daily activity schedule and monitor desired development and assist in children's important events. Besides, children's performance is recorded and displayed in charts. This subsystem also can record the awards obtained by the children. Finance Monitoring subsystem aims to track the finance in order to have better financial management in family which is to spend wisely and avoid wasteful spending. Besides tracking by recording the finance, this subsystem can also remind users to record expenses daily and when the expenses have exceeded a particular category's budget. Parents can also track their children's monthly total expenses.

The purpose to develop this project is to engage the relationship between family members as people can easily meet and discuss things with each other through this app. Negligent parenting can make kids more likely to engage in antisocial behavior, be bullied by their peers, be open to substance use and even abuse in the future and have poor drive for academic success. We are saddened by the tragedies brought on by poor family relationships. Thus, we decided to develop family engagement system to engage family. The software process model that we use is Agile Scrum methodology. We expect user to stay in touch with each other and manage their family engagement activities by using the Contact and Appointment subsystem. We expect this user-friendly subsystem can be used easily by most of the parents to get involved in their children's education by using the Child Education Tracking Subsystem. Besides, we expect that user will have a good finance management by using Finance Monitoring Subsystem. Technique that will be employed is data visualization that used to display the performance of the children. Besides, database is used to store all the data information of user inputs.

Keywords: Family, Education, Scheduling, Finance, Engagement

1   Project Background

It has been discussed how to improve family connections from the beginning of time to the present. Poor family interactions during childhood have long-term negative implications on mental health, according to prior study. [1] The Sustainable Development Goal 3 (SDG 3) supports healthy lives and well-being for all people of all ages, and this situation has breached it. We can infer that lack of parental involvement in children's development and bad family communication are the main causes of poor family connections. Lack of time is the main obstacle to engagement, with 54% of parents and guardians stating that their hectic schedules make it very difficult for them to get involved with their kids. [2] Negligent parenting can make kids more likely to engage in antisocial behavior, be bullied by their peers, be open to substance use and even abuse in the future and have poor drive for academic success. We are saddened by the tragedies brought on by poor family relationships. We believe that family relationships can be strengthened if parents can get involved in their children's growth and exchange thoughts with their children. Some parents wish to spend time with their children, but their jobs prevent them from doing so. When they look back, they will realize that it is such a long time since they communicated with their children. Various efforts are made for engaging families such as keeping the conversations short and to the point and inviting parents to be a part of classroom activities but no point if parents cannot attend these activities.

To avoid this condition, we propose to develop a mobile app that can help people who wish to reduce barriers to family engagement. This application consists of three subsystems including Contact and Appointment, Child Education Tracking and Finance Monitoring systems. By having Contact and Appointment subsystem, family members can make appointments with each other, notifications are sent to remind them about the appointments. This feature can avoid appointments being forgotten. Child Education Tracking subsystem helps parents to keep track of their children's education. Weak parts can be identified and strengthened with ease. While Finance Monitoring subsystem helps the family members to keep track of their expenses. By being aware of these expenses, wasteful expenses can be avoided and decrease the family burden on finance.

Apart from the project background, we will discuss our proposed system introduction which includes system overview, subsystem overview, proposed features of entire system and subsystems and organization background in the following next sections.

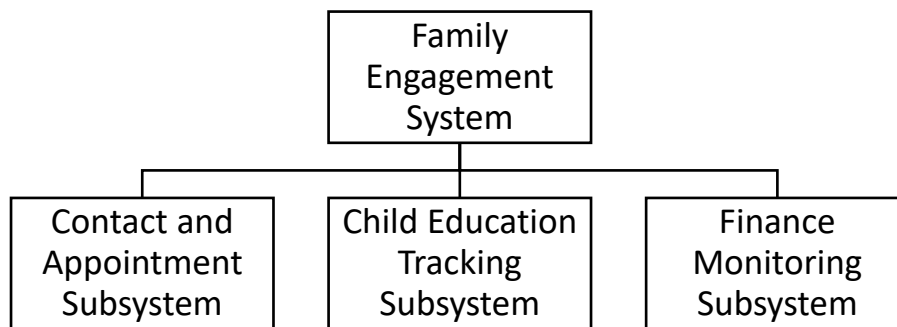# 2   Proposed System Introduction

2.1   System Overview

Figure 1: System Overview

The purpose of the entire system is to engage between the family members and benefits the family members at the same time. Contact and Appointment subsystem let the family members in a family can meet each other through appointment as the family members might be in different place and the elders can find their loves one's social media easily through this subsystem. Child Education Tracking subsystem helps parents to keep track of their children's education. Parents can check whether there is any improvement on a particular subject from their recording and do the schedule of tuitions and others. While Finance Monitoring subsystem helps the family members to keep track of their expenses. The family members can record their expenses through this subsystem. Wasteful expenses can be identified and eliminate by setting a budget on different categories

2.1.1   Subsystem Overview

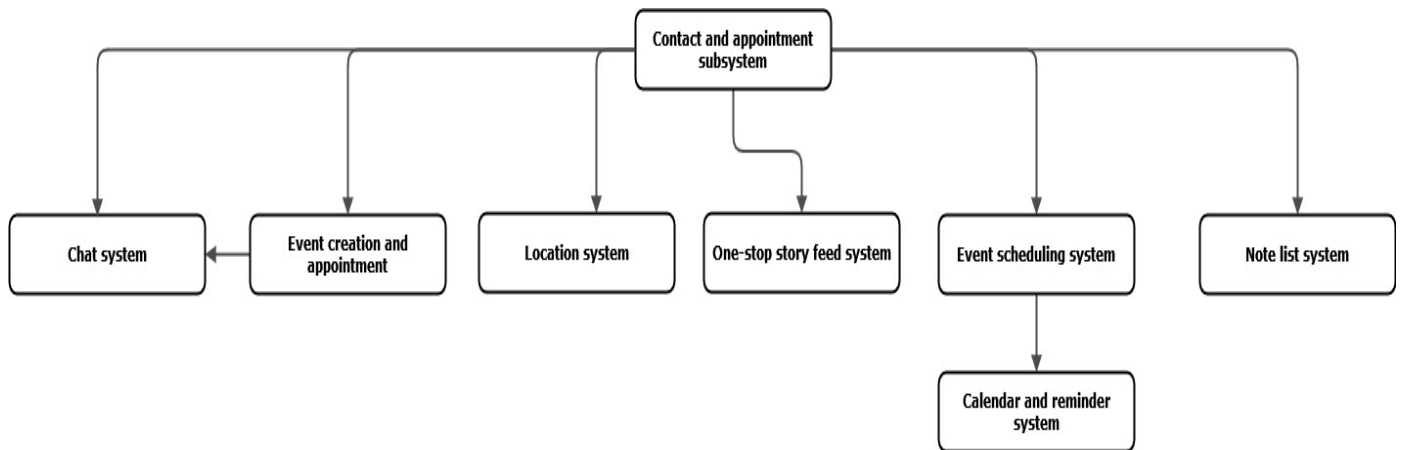### 2.1.1.1   Contact and Appointment Subsystem

Figure 2: Overall modules of Contact and Appointment Subsystem

This subsystem consists of six modules which are Chat system, Event creation and appointment system, location system, one-stop story feed system, event scheduling system and note list system.

This proposed subsystem could help family members to communicate with each other better through chat system and one-stop story feed system. It helps family members to manage and schedule their family activities. The application would send reminders to invited family members when the family activities are approaching. It also helps to record some important notes to the family such as the grocery lists.

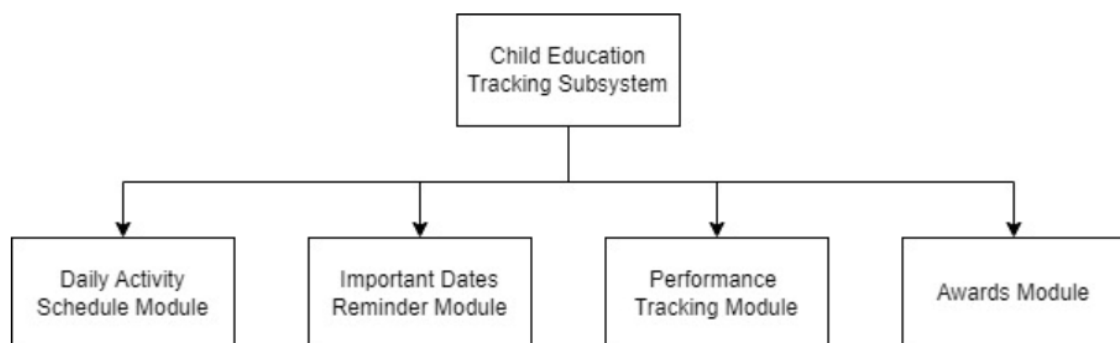### 2.1.1.2   Child Education Tracking Subsystem

Figure 3: Overall modules of Child Education Tracking Subsystem

This subsystem consists of four modules which are daily activity schedule, important dates reminder, performance tracking and awards modules.

The proposed subsystem is used to help parents to keep track of their children's academic performance. Parents can get involved in their children's education even with their hectic schedules. They can check their children's daily activity schedule, academic performance and awards obtained anytime by having this subsystem. Parents will be reminded of their children's important dates such as exam dates.

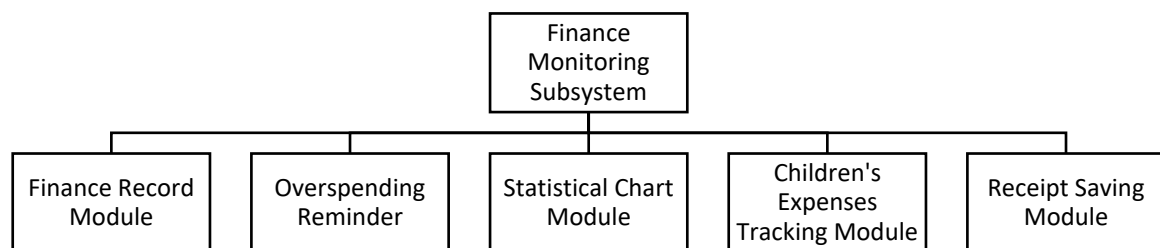### 2.1.1.3   Finance Monitoring Subsystem

Figure 4: Overall modules of Finance Monitoring Subsystem

Financial Monitoring subsystem contains of 5 modules which are Finance Record, Overspending Reminder, Statistical Chart, Children's Expenses Tracking, Receipt Saving.

The purpose of this subsystem is to check whether there is unnecessary spending to avoid overspending. People can see clearly where they spend the money and adjust their spending habit. Parents can also educate their children by educate them to record their expenses and do budgeting. Besides, identifying wasteful expenses will also help in avoid more debt. Moreover, finance monitoring will help in saving money for

emergency, education, vacation or others. These goals cannot be achieved easily if people do not have a good financial tracking.

2.2   Proposed Features

The mobile application has three subsystems which are Contact and Appointment subsystem, Child Education Tracking system, and Finance Monitoring system.

Under Contact and Appointment subsystem, user can create, edit and delete the family events that is created by them. User can view all the family events in a dashboard and choose to join the event. Once the event is accepted by the user, the event will be directed to the user's calendar and user can manage their schedule. When the event is approaching, there will be reminders sent to the user. There is also note list system where user can create, edit and delete important notes for the family. User can track the other family members' location through the location system.

Under Child Education Tracking system, children can add their daily activities and parents can check their children's daily activity schedules using this subsystem. It will show the countdown to the children important event dates and send reminder notifications to parents and children. It also helps to keep track of academic achievement of children.

Under Finance Monitoring system, every family member can set budget for each expense category, records their incomes and expenses in their own account. A reminder will be shown when the expenses of particular category has exceeded the budget set earlier and when the user does not log in any expenses. User can also view the monthly statistic of outcomes to have a better view on the expenses.

2.2.1   Subsystem Overview

2.2.1.1   Contact and Appointment Subsystem

Family members can see a dashboard of events created by others. They can create, edit, and delete the events that they had created. They can invite other family members to join the family event. The invited user can respond to the family event. The family event would be added to the family member's calendar and the user can check whether their

schedule will be clashed with their personal schedule. The application will remind the user about the upcoming family events.

User can use the location system to track the location of the other family members. User can check in location as some special locations such as School or Home. They can also use navigation applications to navigate to the location of other family members. There is a SOS system in the location system where user can ask for help whenever they encounter danger in their journey.

There is also a note list in the application. There will be a dashboard of notes showing all the important detail that is useful to the family members. For example, they can put in meal plan or shopping list in the note list system so that other family members can help to prepare the meals or help to buy the things needed by the family.

2.2.1.2   Child Education Tracking Subsystem

Children can add their daily activities. Not only children but parents also can check their children's daily activity schedules using this subsystem. Appropriate changes can be made to the schedule to prevent overwhelming children. Besides, children can enter their important event dates. It will show the countdown to the event dates and send reminder notifications to parents and children. This subsystem also reminds parents of their children's important dates so that parents will not miss out on any important moment for their children.

It also helps to keep track of academic achievement of children. This feature helps to identify the strengths and weaknesses of each child. Children enter the results gotten from each category. Then, these results are analyzed and shown in charts.

Finally, parents can keep track of the honors their kids have received. Children can enter awards they obtained from different contests. The awards will be shown to their parents so that they may feel proud of their children. These honors also give children more self-worth and affirm them.

2.2.1.3   Finance Monitoring Subsystem

Each family member can set budget for each expense category, records their incomes and expenses in their own account. These features can help the user to track the finance flow and to identify and eliminate wasteful spending habits from the spending records.

A reminder will be shown when the expenses of particular category has exceeded the budget set earlier. Besides, a reminder to log in daily expenses will also be shown if the user does not log in any expenses.

Moreover, user can also view the monthly statistic of outcomes to have a better figure on the expenses. These features can help user to avoid overspend and avoid more debt. Parents can check their children's total monthly spending so that parents can know whether they have overspending. However, there is an option which to not showing the total monthly expenses to their parents. User can also save their receipts/ invoices for record on what they have spent on to review later.

2.3   Organization Background

Our organization is a software company that focuses on developing software solutions to customers, which is also the owner of the system. Our software company had developed a few mobile applications before this, and we are confident that we can produce a valuable cross-platform mobile application that is useful to everyone. We wish to propose the system to people with family members, which means to most of the people in the world. Our aim is to ease the life of people handling family activities such as manage family engagement activities, keep track of children education issues and lastly to manage the family finances.

Our target users are the people who has family members more than three people. The proposed system might improve communication between family members as the first subsystem, contact and appointment subsystem can let users to make appointments with each other. While the second subsystem, child education tracking subsystem can get parents involved in their children's education. Parents can check their children's daily activity schedule, keep track of their children's academic achievement and be

reminded of their children's important events. The third subsystem, finance monitoring subsystem helps parents to keep track of the expenses.

The suggested system is a brand-new app that has not yet been released on the market. Everyone has a hectic schedule that keeps them all busy. Therefore, we think people will pay for this application so they may interact with their families. The organization can make a profit from this application. The organization can also earn a reputation as this application promotes health and well-being. We know that poor family interactions during childhood have long-term negative implications on mental health. Since this application can ensure communication between family members and parental involvement in their children's education, we believe that children can develop a positive approach towards education and learning and be well behaved. Additionally, the company's developers will be proud of themselves because they get the chance to develop this important and meaningful application.

3. References

[1] Alm, S., Brolin Låftman, S., & Bohman, H. (2019, May 14). Poor family relationships in adolescence and the risk of premature death: Findings from the Stockholm Birth Cohort Study. International journal of environmental research and public health. Retrieved October 29, 2022, from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6571769/#:~:text=Other%20possible%20pathways%20between%20poor,turn%20are%20associated%20with%20mortality

[2] Education, P. (n.d.). Free guide: Reducing barriers to engaging families. Reducing Barriers to Engaging Families. Retrieved October 28, 2022, from https://go.panoramaed.com/whitepaper/reducing-barriers-to-family-engagement