

Software project

Phase 1: Feasibility study

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Abstract

Ahmed and Mouza are facing a problem where they both have to work while also taking care of their two-month old child Mohammed. A system is needed as a solution to help Mouza and Ahmed keep an eye on their child and monitor his well being. A child-monitoring system will be built around the room to help the parents taking care of their child in his room and making sure he is safe while they are at their work. Cameras around the house will be placed as well as an emergency button for the person supervising the child and also a TV that will be used as a communication tool between the parents and the child by either sending a voice note or even playing music or a video for him. The child's temperature will also be monitored by a temperature sensor regularly to keep the parents in check. This child-monitoring system should be able to provide an easy and convenient way for the parents to keep an eye on their child while also being at work.

Client

The clients for this project are Ahmed and Mouza, parents of a two-month-old baby. After the mother finished her maternity leave, she resumed work, leaving the baby with a nanny or a family member. Their concern was that they wanted to monitor the baby and keep an eye on his health while being away. This project aims to build a product that helps them monitor the baby and update them with the necessary information, such as his temperature and sleeping pattern.

Scope

As we understood our client's objectives are as:

- They would like to have the product as soon as possible
- They care about the privacy of the information
- Ready to install some cameras
- The baby has his room

Taking all that into consideration when needed To develop a professional and sustainable system we are going to use Agile systems and methods, which will ensure us to reach our client's expectations. Safety and privacy will be prioritized, then comes ease of usage since both Ahmed and Mouza are busy parents, which we take into our consideration as well.

As we understood that cost of the project is not an issue as long as we meet our client's needs and the child's safety and wellbeing.

Therefore, our scope of research will be:

- Safety

- Privacy
- Child's
- User friendly
- Practicality
- Fast delivery of the final report

However, our scop will not cover things such as:

- The expenses for research and implementing the project
- The maintenance expense

Benefits

The following will be the advantages of the system:

1. Easy and convenient to use.
2. Can be accessed through main operating systems.
3. Has a schedule for daily tasks that can be tracked and checked.
4. Has a live HD display of the child's room.
5. Saves the last 7 days of the child's room in a database which can be accessed by the parents for security or emergency situations.
6. Parents can interact with the child by either a voice note or even playing a video/music.
7. Has an emergency alarm button for the supervisor which will invoke a call to both parents.
8. The temperature of the child will be measured constantly by a temperature sensor which will also call both parents if his temperature is either too high or too low.

Technical

We are trying to build a device that allows parents to keep an eye on their children while being away from home. Going for an evolutionary development method is the right choice for this project since both parents have prestigious degrees, meaning that their feedback would result in a better product. However, our team needs to gain the necessary skills for this method. We decided to go for the software model that we will be implementing reuse-oriented development since one of the requirements is to deliver the project as soon as possible. Reusing existing components and modifying them to our requirements will save us time.

Resources

A team of 4 members will work to finish all the stages of the project. The project will take approximately two months to accomplish. The different stages include; project specification, design, development and implementation.

The program will require a database to store all the information needed to monitor the baby's status.

The project is intended to be created for a specific customer with specific requirements. Those requirements will be followed so the product meets the customer's expectations. Knowing this, the database does not need to be very large but has to be very secure to ensure privacy. Information will be overwritten in every schedule update. A camera will be needed for the live stream. A few sensors, a speaker and a communication device will also be needed to send accurate information back and forth between the parents and the child and for the other features.

Alternatives

The project will be developed by the four members as a mobile application compatible with IOS and android devices, using *Xcode* and *Android Studio*. An alternative to this would be a web-based application using Java and HTML.

If the developed system fails to deliver the customer's requirement, it would be best to reuse the design and enhance it rather than starting over. Another option would be to use COTS (commercial off the shelf) programs to solve the errors.

Risk-wise, the product may be faulty at the end of the first development stage because the client needs it as soon as possible and there will not be enough time for enough trials. This encourages the developers to be very precise about the work. Another risk factor is the lack of technical abilities or a short delay due to learning some skills such as working with IDE (integrated development environment) or the program language in use.

Conclusion

In summary, by implementing this project, both Ahmed and Mouza will be able to keep track of their child's health remotely while also watching him live and being able to contact him. While for emergency cases there will be a call to both parents to make sure they are informed. This will make sure that both parents are relaxed while working while their kid is at home with his nanny.