

SW Engineering CSC648/848

Development of a Web application: Milestones

Section 01, Team 01

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Milestone 1

03/03/2022

Version	Date
M1V1	02/16/2022

1. Executive Summary

Raising a child often involves seeking outside help. Whether it is childcare to make sure they are cared for and can socialize as toddlers, finding tutors to help kids with school, finding teachers for extra-curricular skills or coaches for sports, parents may seek out professional help. However, finding the right person can be difficult and time consuming. Childcare centers vary wildly in terms of ages, accommodations, and hours while teachers focus on different skill levels. On the other end, said professionals can struggle in finding appropriate clients. There is currently no general service for connecting the two, leaving professionals to attempt to advertise themselves while parents need to personally scout out options.

Project Milestones aims to create a bridge between parents and professionals. The goal is to create a social media for parents and professionals to find great matches. Parents will be able to register and set what they need for their children and their initial skill levels for relevant fields, while professionals will be able to register their businesses and the kind of clients they are looking for. Milestones will attempt to connect parents with the best professionals, and if they end up using the services, the professional will then be able to update parents virtually on the child's new skill level. Parents will also be able to track their children's development and find the right people to help.

Two main features separate Milestones from other similar services. The first is that it is a general service meant for any kind of child skill development or childcare. It isn't just for academics or sports or music, it combines it all into one, and tracks whatever you want it to. The second difference is that it is meant to match individual businesses and professionals with parents, not through a singular company. With complete profiles and reviews, it will be much easier to find the perfect match.

2. Personas and User stories:

Personas

1. Sharma Family

Persona ID: 0001

Lajja Shah is a 40 year old woman married to Avinash Sharma. Lajja enjoys being an involved parent with her children and spending quality time with friends. She also likes to exercise, cook, help people in need and do art activities with her children. She has a part time job as an accountant.

Lajja wants her kids to be able to learn 3 languages, and be advanced in all academic subjects. Sometimes Lajja struggles getting her kids to and from school and after school activities. She wishes there was someone else to help her juggle kids around so that she could get some time to herself.

Persona ID: 0002

Avinash Sharma is a 42 year old man married to Lajja Shah. Avinash enjoys being an involved parent with his children, as well as creating innovative technology, reading, and exercise. As a young adult he was a soccer coach.

Avinash has a full time job as a Hardware engineer. He likes to have his kids have free time, be creative and be in touch with their actions and feelings. He wants his kids to be exposed to as many sports as possible and explore the outdoors, but also understands that his wife has a lot to juggle between work, home and the kids.

Persona ID: 0003

Naomi Sharma, age 8, is a creative, athletic outgoing girl. She loves reading, math, art and soccer. Naomi also loves playing with dolls and having play dates with her friends, but she is always excited to make new friends. She is a strong leader, but needs help with her leadership skills. Naomi recently changed schools and is struggling with her math skills. At the moment she is taking Mandarin classes with her brother and is on a soccer team. When she grows up she wants to be a fashion designer or an engineer just like her dad.

Persona ID: 0004

Kabir Sharma, age 6, is an artistic, shy, innovative child. He loves drawing, playing chess, music, dancing and basketball. He is currently taking swimming lessons, Mandarin lessons and wants to sign up for basketball. He is extremely creative and loves creating things from nothing.

Kabir struggles being a team player, as well as a leader. He lacks interacting with kids his age, and prefers hanging out with kids his sister's age or older. Kabir also struggles with reading; he does not enjoy it at all. But he really enjoys learning math, currently he only knows how to add up small simple digits.

2. Nika Valya

Persona ID: 0005 - Nika Valya

Nika Valya is a 28 year old female living in San Francisco. She is a bright, social, kind and responsible girl. She developed an interest in playing musical instruments at an early age. She learned early on how to play piano and later developed an interest in learning how to play the violin and guitar. This interest of hers has led her to many things including a degree in bachelors of music.

Another interest of Nika is swimming. She also learned how to swim at an early age and finds swimming to be a great stress reliever. She greatly enjoys playing musical instruments and swimming and she had taken up the task to teach them to her younger cousins which led her to the realization that she wants to turn this into a professional career. As someone who was taught piano and how to swim at an early age, she wants to bring the same opportunity to others. Nika finds that she enjoys working with children the most. She finds that kids are very open to learning and have great ideas as everyday is different and new. She loves being interactive with children and watching them grow as it makes her feel proud.

3. The Bepis family

Persona ID: 0006

John Bepis is the 38 year-old father of Timmy Bepis. John lives with his son Timmy in a one bedroom apartment. He works a construction job from 8 A.M. to 3 P.M., as well as a job from 5 P.M. to 9 P.M. serving as a security guard at a mental asylum. As much as John would love to spend time with Timmy, due to his physically intensive and draining jobs to make ends meet, he is unable to offer a modicum of energy to bond with his son. John is aware that Timmy is not doing

great socially and academically. Despite all of the hardships John bears on his back, he wishes for Timmy to live a better life—to be educated.

Persona ID: 0007

Timmy Bepis is the 12 year-old son of John Bepis. He spends his time primarily in the confines of mandatory education, where he is a social outcast due to having divorced parents and a lack of fatherly love; he is often the subject of emotional trauma from his fellow peers during class and recess. There is a small fire within Timmy to learn (particularly English and the arts), but without the necessary resources nor the direction to find and use such resources, he is unable to find the kindling for that passion. When he is home, Timmy finds himself sitting on the floor, dreaming up fantastical scenarios in his mind.

4. The Malaya Family

Persona ID: 0008

Emerson Malaya is a 45 years old man married to Elena Malaya, and father of Ely Malaya. The Malaya family lives in a 4 bedroom house with a spacious backyard, about 10 minutes away from their favorite Filipino grocery store SeaFood City. Emerson works a compressed schedule as a nurse at Kaiser Permanente. He usually works 12 hours at a time, but only 3-4 days a week. Because of that, he is usually unavailable for his son Ely during the weekdays. However, during the weekends, Emerson loves inviting relatives and friends to a barbecue cookout in their backyard. He grew up in the Philippines where he was used to his parents cooking at home and spending time with family and close friends. Although he had a great childhood back home, they didn't have the financial freedom to go to swimming lessons, instrumental lessons, dancing lessons, and any other extra curricular activities for kids. Now that Emerson has a stable job and more financial freedom to afford classes, he wants his son to have the full experience and to attend these lessons.

Persona ID: 0009

Elena Malaya is a 43 years old woman married to Emerson Malaya, and mother of Ely Malaya. Elena's workplace had closed due to the pandemic, so she has been staying at home and doing things that she wasn't able to do before. Elena has a passion for cooking, but unlike her husband, she likes making Filipino food with a touch of American. She loves creating recipes that she calls Filipino fusion where she tries to add more color and texture to traditional Filipino recipes. Elena loves spending time with her son Ely, however, she thinks that Ely would benefit more from getting professional services to improve his skills. Just like Emerson, Elena grew up with no experience attending any extra curricular classes and lessons. Every now and then, she is urging Ely to take on learning an instrument in which Ely shows no interest in. Although it seems like she is forcing Ely to do things, Elena means well and she just wants Ely to have a better childhood than she had growing up.

Persona ID: 0010

Ely Malaya is a 6 year old boy, the son of Emerson and Elena. Ely loves playing on his iPad, playing in their backyard, and watching Tagalog dubbed anime such as Slam Dunk, Trese, and Hunter X Hunter. Ely is closer to his dad than his mom, he thinks that his mom is forcing him to learn an instrument, when deep down what he wants to do is learn how to speak Tagalog fluently. Although he is still at a young age, his entire family speaks Tagalog and he doesn't seem to relate or understand, especially when his cousins are gathering and playing around. Ely is a really friendly kid that would get along with anyone.

6. Alex Iliev

Persona ID: 0011 - Alex Lliev

Alex Lliev is a 40-year-old Bulgarian immigrant living in Clayton, California with her husband and three kids. She has a large Labrador that she absolutely loves and takes to the beach whenever she can. She also loves to travel, often visiting her parents in Bulgaria and going to other states and countries whenever she can. A few years ago, she opened a daycare in her house, primarily taking toddlers and infants. She registered with the Child Care Council, who have a list of all the currently registered Daycare providers, but don't offer details. Due to her lifestyle, she prefers clients who do not need care in the summer and are able to pick up their kids before 4:30. She constantly gets requests for kids that

don't fit that criteria and needs to reject them, often recommending another local daycare.

User Stories

User story ID #	Persona	Wants to (functionality or feature)	So that (benefit)	Constraints
1	Lajja Shah	Get help getting kids around from place to place	She can have more time to herself	Wants someone she can trust and kids love to be around.
1	Lajja Shah	Be able to get her kids to learn 3 languages	Her kids have many ways to communicate and help those around them	Does not know where to go and really wants someone she trusts with her kids.
2	Avinash Sharma	Find help with childcare	Lajja can have a bit of time for herself, and they can both go out on date night	Knows that his wife wants someone she feels she can trust, and the kids also like.
2	Avinash Sharma	Have his kids exposed to all sports	kids can learn about healthy lifestyles and be active with their favorite sport	Works full time so he can not coach his own kids.
3	Naomi Sharma	Work on her leadership skills	She can be better at setting goals and understand the importance of being a good leader.	Parents are struggling to find programs that they feel connected to.

3	Naomi Sharma	Improve her math skills	Can advance in other math topics	Parents can not get in touch with tutor friends have recommended
4	Kabir Sharma	Find a great tutor that he connects with	This tutor can also tutor in other academic areas	Only likes math but parents want him to build a connection
5	Nika Valya	Draw clients for her expertise as a piano tutor and a swimming instructor all in one app	She can turn this into a professional career	The app must allow her to advertise both of her expertise.
6	John Bepis	Find his son good general education	Timmy does not become a failure	Money. The Bepis family is extremely poor.
7	Timmy Bepis	Learn more about literature and the arts	He can fuel his desire to learn	Hard to open up because of his social ineptitude
8	Emerson Malaya	Find lessons for his kid	Ely can have the full experience of growing up	He's never had any experience having lessons, therefore not sure where to go to get one.
9	Elena Malaya	Get her son to learn instruments	Ely can enjoy childhood and learn while he's still young	Ely doesn't show any interest in learning an instrument
10	Ely Malaya	Learn how to speak tagalog fluently	He can relate with his cousins and relatives	Parents are not aware of what he really wanted to do

11	Alex Lliev	Have a clear accessible posting of her daycare	She can find clients that meet requirements and note when her daycare is full	Has poor computer skills and only has a general registry and sign in her yard showing her business
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3. Data Definitions

Name	Definition	Usage
Registered User	A person who has signed up as either a: <ul style="list-style-type: none">- service provider- parent	Any such user will have information that differentiates them from other users, such as userID, account type, and name.
Child	Child of registered parent user	Children will have their own profiles that are linked with their respective parent user.
User Preferences	What a user seeks OR seeks to provide	Users can set what type of service they are looking for. Service providers can set what type of service they are providing.
Event	The temporal instance during which a service is scheduled to be held	Calendar to help parents and service providers stay organized (i.e. an event planner)
Address	The place at which a service will be held.	To help users set/find a locale for providing and using services
Verification Status	The confirmation of legitimate identity of registered user	An extra step in security in order to ensure the safety of all parties (that being the service provider and the user)
Type of Service	The category of service being provided	To help users find their desired service
Private Chat	A direct message between two parties	To let the service provider and the user communicate

4. Initial list of functional requirements

1. User can select type of account Service Provider or Parent
2. User will create a unique user id to login with
3. User will create a security password to login with
4. Service Providers can add information about themselves and the services they are providing including rates
5. Parents can add information about their children (name and age)
6. Service Providers can add schedule availability
7. Parents can filter through the services providers they are looking for
8. Parents can message potential service providers
9. Service providers can choose whether they prefer parents to message them first if first time service or to be able to schedule them
10. User can leave a conversation
11. The conversations will never be deleted unless both users delete the message or both user accounts are deleted
12. The service provider will have a profile. It includes user's name, information about themselves, services
13. Service Providers can edit and update their profile.
14. Once a parent schedules/or is approved to schedule then the event will be added to their calendar
15. Once a service provider approves or is booked, an event will be added to their calendar and spot will be reserved
16. When parents register their kids, kids will have a separate profile that summarizes skill sets that they develop at that age
17. Child profile will also have a section where recommendations of service providers that can help them reach skill sets they need to develop
18. Parent and Service provider will have a listed calendar that will lay out what events they have coming up
19. Parents can also see a list of low cost or free services for low income families this will also be organized in a way that directs them by age and skills they are hoping to accomplish
20. When parents filter through service providers that return will be a list of service providers near there area that fit the requirements
21. When service provider signs up they will need to provide id verification as well as undergo a background check
22. Before parents can book they need to undergo an id verification

23. After a parent has an event with a service provider they will be able to review their experience
24. Service providers will be able to create a list of steps they are taking to get students to the overall end goal. They will be able to check off when a certain small goal was achieved so parents can be notified of progress a student is making
25. Each students profile will have another section where progress can be shown after service provider checks of on their student
26. Parents can make a list of reminders of what it is they want the students goal to look like this will be shared with the service provider
 - a. Parents will be sent 12, and 6 hour reminders of the event they have booked for
27. Guest users will be able to filter through service providers but not will be able to book, they will be prompted to sign up

5. List of non-functional requirements

1. **Security:** The application will be able to protect users' sensitive information by having the information in a database such as MongoDB. User's security will be protected by having them create an account that will store their information. The password they produce will have to fill the app's requirements in order to maintain the user has chosen a strong password that will protect their account. Both of these will be stored in the database. The password stored in the database will be hashed to protect the user.
2. **Usability:** Application shall be easy to use. The design of the app shall lead and guide the user to other web pages in the app efficiently. Which will also help the user in navigating the website even after the user does not use it in some time. There shall be clear instructions for the user on what they can achieve with this app.
3. **Storage:** Application shall store each user's sensitive information. The user shall store whether a user is a development child care worker or looking for one. It will also store the speciality of the child care worker. The application shall also store the user's progress and plans with their child care worker into the database. It should also store the real time messages taken place between two users for future reference.
4. **Performance:** Application shall be able to manage the system and respond to users actions efficiently as the application gets more users. The application shall be able to render the user's progress page in a timely manner as more progress is added. The user shall be able to interact with each other for a long period of time just as effectively.
5. **Development Requirement:** The code on the team's main branch in GitHub shall be able to run and work every time. The team will be using multiple branches in GitHub to organize and then to efficiently merge the code in the main branch. The team will use MongoDB to store user information and data that is required in the database. The team will use Amazon AWS to deploy the application to a server.

6. Competitive analysis

Key features of Competitors	Planned Features
Craigslist Anyone can post without no further security measures to protect from scammers	Advanced Security and Scammer Prevention Here at Milestones, we will be able to identify both parents and providers rigorously to make sure that both parties are legitimate before they are allowed to receive or offer services.
Fiverr, Care.com, UrbanSitter Offer wide selection of services more than just child care	Milestones Here at Milestones, we will be focusing primarily on child care and anything related to child growth. We will not be offering services not related to child growth to avoid unwanted traffic.
Care.com, UrbanSitter Partially offer child care related services as part of their program. But there is no way to keep track of performance.	Milestones Performance UI tracker Here at Milestones, we will be able to keep track of a child's performance based on provider reviews or UI tracker of how a child /is performing.
Fiverr Keeps track of how a provider is doing based on revenue and income, but lacks tracking buyer progress.	Milestones Child Developmental Progress Here at Milestones, we will be able to keep track of a child's developmental progress throughout their stay in Milestones.

7. High-level system requirements

Server/Platform provider	Amazon AWS
Operating System	Ubuntu 20.04 LTS using the Intel 64-bit version (x86_64)
Server-side language	JavaScript
Database	MongoDB 5.0.6
Web Application Framework	Express
Front-end technology	React

9. Checklist

- Team found a time slot to meet outside of the class **DONE**
 - Scrum Master shares meeting minutes with everyone after each meeting. **DONE**
 - Github master chosen **DONE**
 - Everyone sets up their local development environment from the team's git repo. **DONE**
 - Team decided and agreed together on using the listed SW tools and deployment server **DONE**
 - Team ready and able to use the chosen back/front-end frameworks. **ON TRACK**
 - For each technology (front/back-end/DB/cloud) , the team decides who will lead the study of each technology and what will be the output of the (feasibility) study within one month.
 - Study schedule for the technologies we need to study
 - Based on our familiarity, we setup the following study plan:
 - **Amazon AWS:** Jocelyn will be the lead for this topic and will familiarize others with how to use Amazon AWS by March April 1st.
 - **JavaScript:** Hira will study how to use JavaScript for servers by April 1st.
 - **MongoDB:** Ansel will study MongoDB and database design by April 1st..
 - **Express:** Miroslav will study how to use Express for simple web servers by April 1st..
 - **React:** Edel will study React by April 1st.
- April 1st we will have a meeting to summarize all the topics we have studied and help each other get familiar with each other's topic. As well as studying our own topic we will do a bit of research on everyone else's topic so we have some understanding before going into the meeting.
- Team lead ensured that all team members read the final M1 and agree/understand it before submission **DONE**