toy trade 

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Team Name: Toy Trade
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ITWS 4500 Web Science Systems Development
9 February 2021

Summary of proposed project

Toys are gifts that should last a lifetime, but it is a well-known fact that kids get bored of them rather quickly. Before they know it, parents are back at the store getting their child a new game, doll, or book. Parents want their children to be able to play with new and various toys to fuel their ever-expanding imaginations, but constantly buying new and expensive toys is not economical. If so many families are facing this challenge, why not trade their toys? This is where Toy Trade comes in. Toy Trade is a web application where parents can coordinate an exchange of toys with another family. By trading in their child's toys, parents are not only saving money and trips to the store and always keeping their child busy with a new toy, but also helping out fellow parents who are in the same boat. Parents and their children can simply create a Toy Trade account and set up a dashboard of toys they would like to trade in by uploading pictures and other relevant information. Once they have added at least one toy to their dashboard, families can begin the great toy search! Toy Trade's clean and user-friendly interface will make it easy for families to browse all of the available toys. Our site will feature a filter system in which users can narrow their search by value, category, and brand. When the user has found a toy they are interested in, they can request the toy along with an offer. The toy owner can either accept or decline the offer, or they can request a different toy from the user's

dashboard. Once an exchange has been approved, the users can communicate with each other using our chat feature to coordinate a third-party location where the exchange will take place. This location could be a library, school, or other public place that is convenient for both parties. In order to protect the safety of both parties, they will not directly meet in person for the swap. Instead, the exchange will involve the two parties dropping off their toys at the agreed upon location, along with a unique identifier for the transaction and receiver's identity. The third-party mediator (a librarian, for example) will facilitate the transaction. The use of identifiers and a neutral third location will ensure that the toys go home to the correct family.

Problem Space

Toys are a great way for children to entertain themselves and can be used for mental stimulation, but sometimes playing with the same old toys can become boring and children can become uninterested. This disinterest can lead children to find other methods of entertainment, including using technological devices which can promote negative addictive association in the future. So how do you keep children interested in playing with their toys? Supplying a variety of new and engaging toys can combat this apathy. While many parents would love to consistently update their children's toys, doing so can add a significant financial burden that is unrealistic to uphold. Constantly buying new toys will also require that a large number of old toys be stored away, or disposed of in some manner. Frequently rotating through toys and discarding old ones can be bad for the environment, as it promotes companies who rely on mass production. While services such as Craiglist are solid options for finding reasonably priced used toys, another problem that can be encountered when purchasing these toys is that many of these existing services are known for unsafe interactions

between users when they meet up in person for the exchange. Also, while these online services can be cheaper than purchasing new toys in stores, it still requires a financial aspect. Overall, with children frequently searching for new toys to keep them entertained, parents trying to budget for these expenses while also not promoting mass production, and a need for a safe way to purchase used toys, there is a call for a service in this niche market.

Solution

Our solution: Toy Trade. Toy Trade is an online service that connects two users in a safe and secure manner so that transactions can be completed. Parents can log on to our website and simply search for toys of interest for their children. These toys can be filtered in a multitude of ways, including by price, type, and brand, which allows parents to find the exact toy that will fit their children's needs. Once a toy of interest is found, the user can request that item from the user offering it. This second user can choose to browse the first user's listings to find a suitable item of trade, or can deny the request. A chat feature is also provided for users to work out the trade details between themselves. Once a trade deal is settled on, both users are given a unique identifier that will be later used in pickup. In order for these transactions to be conducted safely, users will utilize a third party location such as a library for contactless exchanges. Using the unique identification code given during the trade confirmation, users can pick up and drop off their toys without worrying about extra parties who are not part of the trade picking up orders that are not theirs. Because of the contactless method of exchange, users can also have a wider window of trade, so that if schedules are conflicting, it does not interfere with the swap. By having the method of exchange rely on only trading toys, instead of a money or point system, there are two benefits. First, it reduces the financial pressure that

parents feel that comes along with providing for their children. Second, it provides a way for parents to effectively recycle old toys so that they can be of use to others. For parents of children who form attachments to their toys, this method also allows these children to weigh the cost versus benefit of keeping their old toy or receiving a new one, so that no feelings are hurt when old toys are disposed of. With these benefits, trading can be simple, safe, and environmentally friendly.

Competitors

Toy Trade has several competitors: Craigslist, Facebook Marketplace, and toy companies such as Lego, Hasbro, and Mattel. Craigslist and Facebook Marketplace offer the services of buying and selling items such as furniture, clothing, and electronics. However, Toy Trade will be an application designed specifically for the trading of children's toys. Furthermore, it is important to note that Toy Trade will not involve the use of currency to exchange items. Craigslist and Facebook Marketplace sales are typically local and require coordination between the buyer and seller for when and where to pick up the item. This often introduces security and privacy concerns. Toy Trade will seamlessly perform the transaction without traders having to meet face to face with the use of transaction identifiers and QR code generators. The exchange of items will be more safe and secure than that of competitors such as Craigslist and Facebook Marketplace. Major toy companies like Lego and Hasbro will also be chief competitors of Toy Trade. Children's toy consumers might prefer buying from these large corporations because they may like new items that haven't been used before. Our application promotes the reuse of children's toys, while major toy companies manufacture new toys, raising environmental concerns about plastic waste. With increased awareness about the issue of waste coming from

the toy industry, the original customers of major toy companies may shift towards trading toys rather than buying brand new ones.

Another competitor of Toy Trade is Mercari: Japanese e-commerce company meant to help people declutter and discover new items. On Mercari, shipping is the only way to deliver items to the buyer which reduces security concerns. However, Mercari requires that an item be priced between $5 and $2000 while Toy Trade will solely rely on a bartering system.

Stakeholders

The stakeholders for our Toy Trade app consists of parents, children, and a middle man. These people all get value out of our app in many different ways. To start, everyone gains value from this app by having a central hub for all toy trading events. This allows all the stakeholders as a whole to know where to go for a toy trade. Specifically, the parents gain almost the most value out of our app, since the average cost of a toy is about $14 dollars, that amount adds up fairly quickly considering the average number of kids in a family is approximately 2 kids. This cost quickly adds up as according to, mother.ly, the average kid will have between 70 and 200 toys at any given age and the average parent will spend $6,500 on toys per child before they even reach their teens. As stated above, our toy trade app can save parents' value by being able to trade in a toy in order to gain value from another toy that someone else owns without having to spend more money on more toys. According to another study, the fewer the toys children have, the better their social skills become. With our app limiting the number of toys children have doesn’t have to be the only solution to bettering their social skills. Kids can gain value from our app by being able to interact among other kids their age at our toy trade events, in part enabling the children to communicate with other kids and maybe even find some

friends! Our app also will be able to give value to kids who constantly like new toys to play with than the same old toys they get bored of. This allows for new toys without the extra hassle of parents spending extra money on toys after their kids get bored. Lastly, the middleman gets value as they are able to set up the location of the toy trade and create an event listing. This helps the middleman "connect" with the parents in order to set up a well organized event.

Interesting technologies

Functional and non-functional requirements

There are several functional requirements that will ensure the success of our application. The user will be able to create a Toy Trade account and log in using a secure authorization system. When two users confirm a toy swap, they will receive a unique transaction code which will guarantee a smooth exchange process. Both parties will be able to communicate with each other through an integrated chat feature in order to decide upon a neutral location where the exchange will take place. When users first create an account, they will be assigned a unique account identification code which will further ensure precision of the transaction. Because we will be utilizing transaction and user identification codes, the toy exchange will not need to involve in-person contact, protecting the privacy of both parties involved. Furthermore, the user will be able to upload images of the toys they would like to make available for trading, and they can do so by selecting an image from their computer, phone, or tablet. When a user finds a toy that they like, they may request that toy from the owner by submitting a request. The user may additionally reach out to other users over chat. When a user receives a request, they may either decline the offer or select a toy of interest

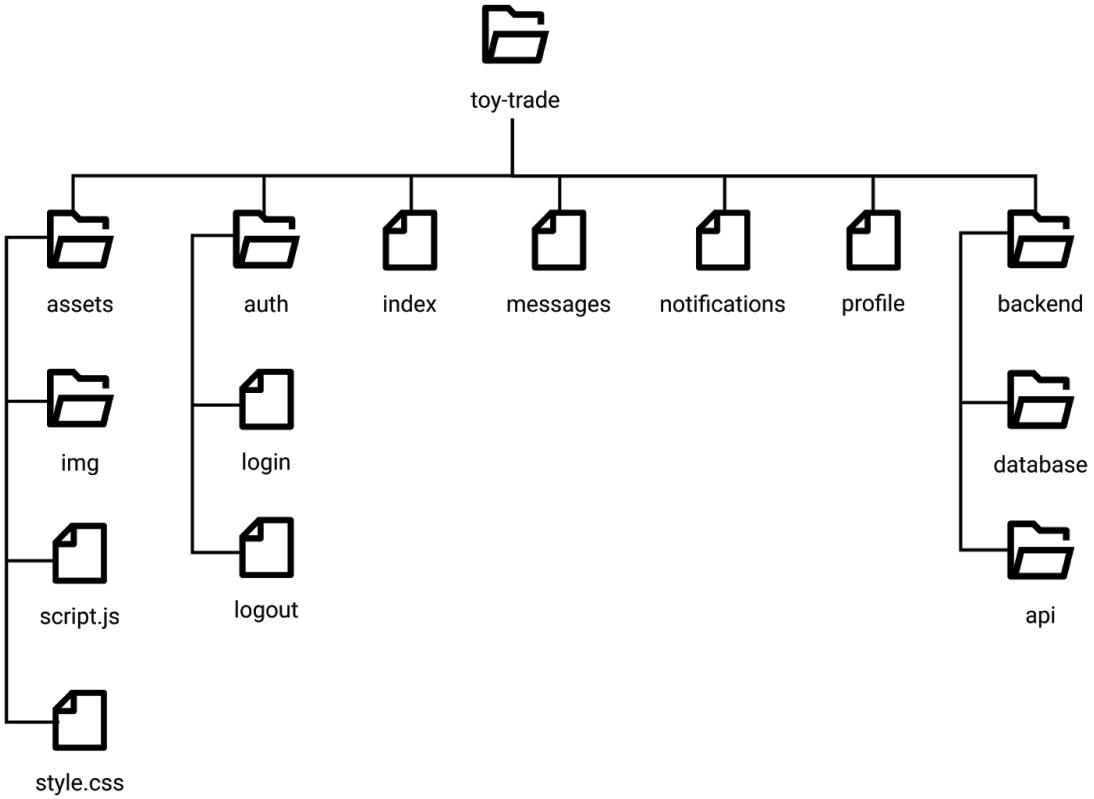
from the other user's dashboard. Moreover, in order to facilitate the toy search process, users will be able to filter out items by particular categories to narrow their search.

Additionally, there are multiple non-functional requirements including security and privacy, portability, maintainability, scalability, and reliability. Protecting the privacy of our users is a high priority. This is why we will be using a safe and public third-party location, such as a library or school, for the transaction. The use of identification codes also ensures that people not involved in the transaction cannot claim the toys as their own. In addition, a user's session will expire after five or ten minutes of inactivity in order to prevent others from accessing a user's private data. Portability is also an important non-functional requirement. We want our application to be accessible to users no matter where they are and what devices they own. For this reason, our application will be responsive to different screen sizes as well as fully mobile-friendly. Maintainability of our code base will make our application scalable and allow it to be expanded in the future. We will need to be able to handle the increase in user activity without sacrificing the user experience or performance of our website. The reliability of our website will encourage users to continue using Toy Trade after their first experience. In the event that a toy exchange is unsuccessful, users will be able to consult with customer service through our Toy Trade contact. Because the trading of toys is based on trust and involves no billing, we are unable to reimburse users. We encourage feedback from our users in order to improve upon their experiences in the future as well as the reliability of our application.

Estimated project schedule

Task	Estimated completion or deadline
Project proposal and presentation	Tuesday, February 9
Design interface using Figma	Saturday, February 13
HTML and CSS (Bootstrap)	Saturday, February 20
Create API	Tuesday, February 23
Decide on and integrate JavaScript framework	Tuesday, March 9
Midterm presentation and demo	Friday, March 12
Set up MongoDB database	Saturday, March 27
Integrate data visualization	Wednesday, April 7
Finalize project	Tuesday, April 13
Project preview day	Tuesday, April 13; Friday, April 16
Final presentation and demo	Friday, April 23; Tuesday, April 27; Friday, April 30

Site map


toy-trade
assets
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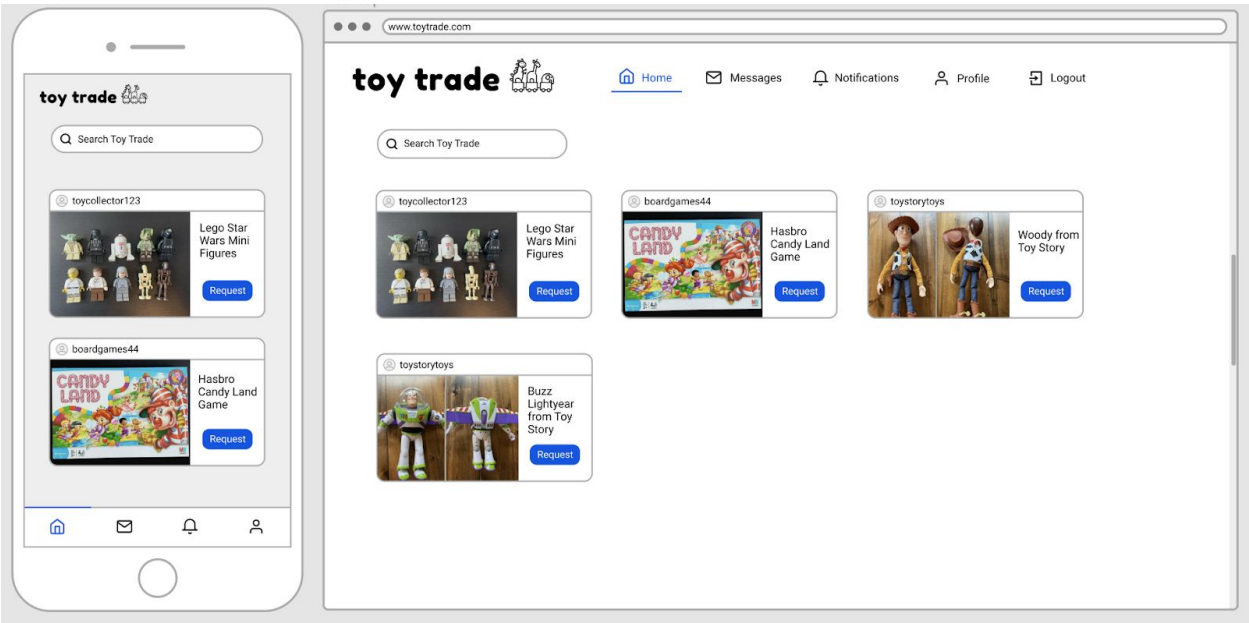
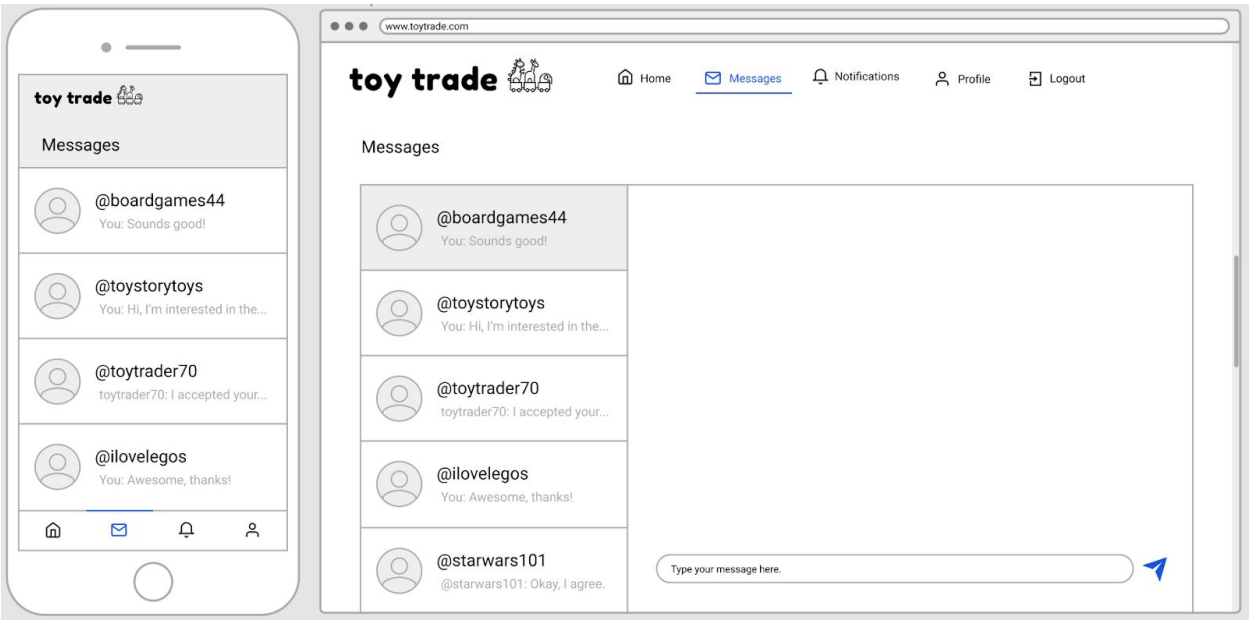
index
messages
notifications
profile
backend
img
login
database
script.js
logout
api
style.css

Wireframes

Home Page: Displays all of the listings of toys up for trading. Includes a search bar and the option to request various toys.



Messages Page: This page allows users to chat with one another and decide on what to trade.



Notifications Page: Displays the new requests from other users. It also shows the history of previously accepted and denied requests.