Furever Friends

Phase 2 Project Documentation

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Frameworks and Architectures

Application Type: Mobile-friendly Web Application

Development Languages:

- HTML
- CSS
- JavaScript
- Python
- Ajax

Frameworks & Environments:

- **Node.js** Runtime Environment
- **React.js:** Provides a fully mobile-friendly cross-platform application without the need to duplicate GUI for users, while still providing access to the device components such as camera and GPS.
    - This also fits with likely use cases, as most users would only utilize the application once or twice to adopt a new pet. Organizations that use it more frequently would benefit from a web interface for the bulk of the work, with seamless integration into a mobile device for taking photos of the pets.

Database: Firebase
Learning System/Library: Scikit Learn to handle ongoing training of the match prediction system based on user data.
Web/Deployment Server: GitHub Pages or AWS Free Tier.
Promotional Website: WordPress at sites.psu.edu.

Software Process Schedule

The following chart summarizes our development plan for the project. Tasks marked **(LP)** were deemed of lower priority by the client (Dr. Blum) and will be implemented if other tasks are appropriately on track to be completed in time.

		Development Plan	Test and Demonstration Plan
Feb	**8**	**1. Environment Setup** 1.a Docker 1.b Node.js 1.c Setup React.JS Base 1.d Setup demo server **2. Database Setup** 2.a Create Firebase DB **3. Build Initial GUI** 3.a Static HTML/CSS prototype GUI	**1.1** Development team members can load base React App in Docker container **1.2** Development team can commit and push to the Github **2.1** Development team can log in to Firebase **3.1** User can view demo home, listing, profile pages on server
	15	**2. Database Setup** 2.b Integrate Firebase into App 2.c Setup initial DB structure **3. Build Initial GUI** 3.b Integrate initial pages into React **4. Plan Learning/Training System** 4.a Learn how to use Scikit 4.b Research Logistic Regression	**2.2** User can view test database data in demo listing page **3.2** User can view home, listing, profile pages on computer web browser **3.3** User can view home, listing, profile pages on mobile phone **3.4** User can view home, listing, profile pages on mobile tablet
	22	**2. Build Initial GUI** 2.b Integrate Petfinder listings 2.c Integrate user-created listings **4. Plan Learning/Training System** 4.b Plan initial infoset 4.c Plan initial training dataset **5. Petfinder API Integration** 5.a Setup API connection 5.b Display external listings	**2.3** User can view Petfinder pet listings in app **2.4** User can view pet listings from DB in the app **5.1** User can view Petfinder pet listings in app

Mar	**1**	**6. Account Creation** 6.a Setup OAuth for login 6.b Setup account types **7. Create Pet Listings** 7.a Build new listing GUI 7.b Save new listing to DB **8. Setup Learning/Training System** 8.a Add library to the app 8.b Setup initial test data	**6.1** User can log in using their email and password **6.2** Development team members can set up different user accounts **7.1** User can create a new pet listing **8.1** Development team can view test data
	8	**6. Account Creation** 6.c Create user profile **7. Create Pet Listings** 7.c Integrate DB listings to GUI 8. **Setup Learning/Training System** 8.c Log data from users 8.d Create infoset from user data 8.e Create infoset from pet listings **9. Personality Quiz** 9.a Create quiz based on infoset 9.b Log quiz data from user **10. Google Maps Integration** 10.a Setup API connection	**6.3** User can edit their account profile **6.4** User can view their account profile **7.2** User can set up can interact with the DB listings **8.1** Development team can view user data related to matching **9.1** User can take the Furever Quiz **10.1** Development team members can access and display content from Google Maps through API connection
	15	**8. Setup Learning/Training System** 8.e Log and interpret initial matching 8.f Plan changes based on results **10. Google Maps Integration** 10.b Fetch GPS from device 10.c Fetch location of pet by zipcode/location 10.d Filter pets by location **11. Setup Search Functionality** 11.a Filter adoptable pets 11.b Filter lost/found pets	**8.2** Development team can view match results **10.1** Users can explore the GPS in the app **10.2** Users can view nearby pet for adoption **11.1** Users can filter their page by adoptable pets **11.2** Users can filter their page by lost/found pets

	22	**12. Private Messages** 12.a Setup private message GUI 12.b Send a private message 12.c View private message **13. Camera Integration** 13.a Access computer camera 13.b Access android/ios phone camera 13.c Access android/ios phone camera **14. Pet Matches** 14.a Generate pet matches based on L/T system 14.b Display matches in adoptee user account 14.c Analyze matches and change L/T as needed	**12.1** Users can send private messages to each other **12.2** Users can view their private messages **13.1** Users can access their computer camera through the app **13.2** Users can access their phone camera through the app **14.1** Users can match with the pet’s profile they choose to match with
	29	**13. Camera Integration** 13.c Store pet photos taken by device 13.d Store document photos taken by device 13.e Investigate photo filter options **14. Pet Matches** 14.d Increase user data to improve training 14.e Analyze matches and change L/T as needed **15. Notifications** 15.a Auto-generate notification for new messages 15.b Auto-generate notification for new matches	**13.3** Users can upload pet photos **13.4** Users can upload details about the pet **14.5** Suggest pets based on previous viewings **15.1** Users can get alerts when someone has messaged them **15.2** Users can get alerts when they are matched with a new pet
Apr	**5**	**13. Camera Integration** 13.f Implement photo filter options 13.g Design GUI for photo filter options **14. Pet Matches** 14.e Finalize matching criteria/algorithms **15. Notifications** 15.c Display notifications in account GUI 15.d Investigate ways to send notification emails **16. Safe Spawts (LP)** 16.a Sort data from Maps API to determine dataset 16.b Generate Safe Spawts near adopter location **17. Promotional Website** 17.a Setup WordPress site 17.b Setup theme/design	**13.6** Allow users to apply filters on their pets **14.5** Allow users to match with pets based on the user preferences **15.3** Users can see notifications about pets or other interactions **15.6** Users will receive email notifications about certain actions in regards to their account **16.2** Based on matches, users can pick locations to meet for pet adoption **17.1** Promotional site to display the website incentives

		17.c Build the main page	
	12	**13. Camera Integration** 13.h Implement document scanning **14. Pet Matches** 14.g Create test cases to demonstrate matching 14.h Setup on the server for live, online matching **15. Notifications** 15.f Implement notification emails. **16. Safe Spawts (LP)** 16.c Generate Safe Spawts near both adopter/adoptee 16.d Design GUI to recommend Safe Spawts **17. Promotional Website** 17.d Build about page 17.e Create support documents/videos 17.f Build Download/Try me page	**13.1** Users can take pictures of their adoption application document and view it on the app. **14.1** Development team members can search for pets and have recommendations for other pets in their ‘For You’ page. **14.2** Users can search for their furever friends on a live website. **15.1** Users can get notified in both their emails and account page when there is a new match, a new private message or a change of application status. **16.1** Users can choose a location between them and another user of their choosing where they can meet. **17.1** Users can click on the About Us link to view information regarding the development team **17.2** Development team members can view documents/videos regarding how Furever Friends works. **17.3.** Users can click on the Try Me button to be redirected to the Furever Friends web application..
	19	**17. Promotional Website** 17.g Create system documentation 17.h Build support page	**17.4** Development team members can view the system documentation pages. **17.5** Users can click on the Support link to view information regarding Furever Friends website functionality and demonstration.
	26	**18. Presentation Demonstration** 18.a Create slides and plan demonstration 18.b Finalize any documents/code as needed 18.c Deploy final product to the server	**18.1** Development team can successfully present the final product **18.2** Users can view and navigate within the app on the server

Gantt Chart

	Feb			Mar					Apr			
	8	15	22	1	8	15	22	29	5	12	19	26
1. Environment Setup	🟦											
2. Database Setup	🟦	🟦										
3. Build Initial GUI	🟦	🟦	🟦									
4. Plan Learning/Training System		🟦	🟦									
5. Petfinder API Integration			🟦									
6. Account Creation				🟦	🟦							
7. Create Pet Listings				🟦	🟦							
8. Setup Learning/Training System				🟦	🟦	🟦						
9. Personality Quiz					🟦							
10. Google Maps Integration					🟦	🟦						
11. Setup Search Functionality						🟦						
12. Private Messages							🟦					
13. Camera Integration							🟦	🟦	🟦	🟦		
14. Pet Matches							🟦	🟦	🟦	🟦		
15. Notifications								🟦	🟦	🟦		
16. Safe Spawts (LP)									🟦	🟦		
17. Promotional Website									🟦	🟦	🟦	
18. Presentation Demonstration												🟦