
DELIVERABLE 2

Design Report



Introduction

Globeshoppers Website

In today's context where getting items overseas might seem easier than before due to logistical advancement, one could not escape from paying expensive international shipping fees just to obtain items abroad. Some items are also exclusive overseas hence it is hard to acquire unless done by travelling. While travelling, traveler's extra luggage space often gets wasted too. There is also no website that shows the most sought-after items in different countries. Thus, we decided to create a peer to peer marketplace that matches locals who want to buy things from overseas, with travelers who have extra luggage space and are keen to earn some money.

Globeshoppers relies on its users for its functioning as Australian consumers post products they want and people travelling overseas can visit the website and offer to buy these products. Similar to gumtree, in order for the consumer to receive their goods, a messaging system will be in place for the consumer and the traveller to organise a mechanism to exchange payments and products.

In order for Globeshoppers to be a functioning and effective website, software architecture and design must be considered and well-thought out to give the developers an accurate idea of how the website should be designed and produced.

Software Architecture

1 THE SYSTEMS EXTERNAL DATA SOURCES

Globeshoppers will be using external data sources to provide information in order to make the website functional for its users. These functions include converting currencies and creating a 'mock-up' product inventory to allow browsing of products, viewing products by their category and viewing trending products. In order for our application to access external data sources, several Application Programming Interfaces (API) will be used.

Foreign exchange rates API by European Central Bank:

This API is a free service that provides past and present exchange rates. The data it uses allows for currency conversion which will be useful for the Globeshoppers website. The price uploaded by the Australian user will be in Australian dollars however, if another user decides to provide help whilst travelling, it would be useful to show the retail and offered price in the country's currency where the product is located. Since the exchange rates are fluctuating constantly and the vast amount of countries where products may be from, it would not be logical to program a currency conversion. Hence, an external data source will be used to provide an easier option to incorporating this feature in our website.

Browse API by eBay:

The Browse API provides data on eBay's items including its description, category, reviews and images. Using the metadata provided by eBay, the API allows searching and gives information to sort products into categories. In relation to the Globeshoppers website, the API will provide a set of 'mock-up' products, i.e. products that have been posted by users for others to buy overseas, as well as allowing keyword searches. Also, viewing products by category is another feature incorporated into this API which will be used and extended to better suit the website. Thus, this API will be useful in developing the websites browsing features and to display a wide range of products by their category to replicate a running website with pre-existing users.

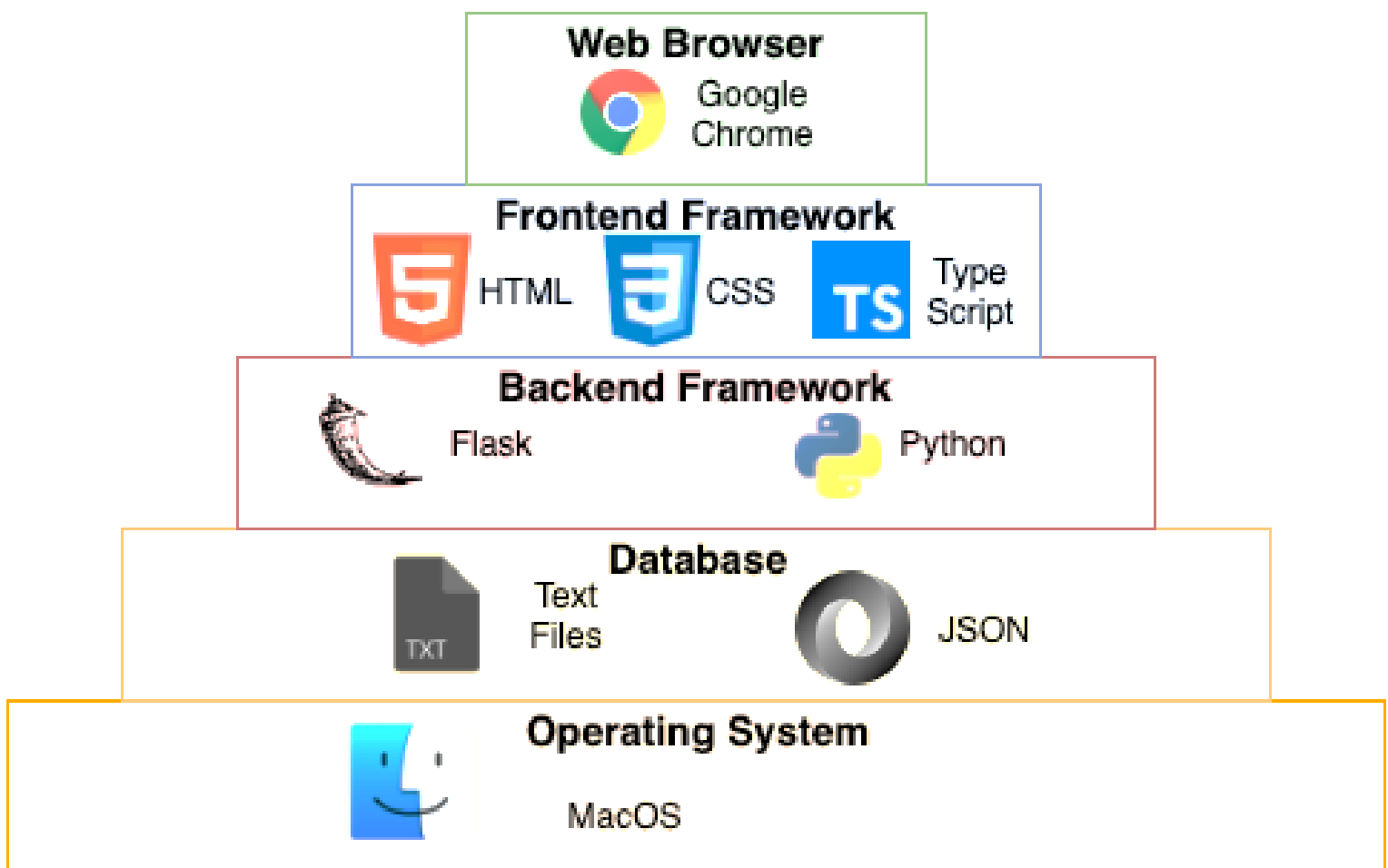
Recommendations API by Best Buy:

This API provides data on Best Buy's products that have the highest buying frequency. The statistical analysis provided by the Recommendation API will be used to help create a 'Trending' category found on Globeshoppers main page.

Upload API by cloudinary:

The Upload API will be used to allow users of the website to upload images of the product they want from their computer when creating a post. This API will allow the users to upload a file from their computer since this is hard to achieve without getting help from external sources. The API basically takes the file that was uploaded and saves it to a cloud service and the website's database.

2 SOFTWARE COMPONENTS – THE WEBSTACK



3 CHOICE OF LANGUAGE COMPONENTS

Backend Language

For the backend software development, multiple languages were considered. Each of these languages had their advantages and disadvantages which allowed the decision to be made on what language to use.

The following were the languages that were considered by the team during the decision process

C

Advantages:

- Every team member was familiar with the language and thus the learning curve needed for was smaller
- Has a good performance when used on multiple devices

Disadvantages:

- Not frequently used for backend programming thus less libraries are available
- Time consuming
- Harder to maintain software in comparison to other languages such as python

JavaScript

Advantages:

- JavaScript is relatively simple to learn and implement.

Disadvantages:

- Team members are unfamiliar with the language and thus it could be harder to develop the backend
- No Object-Oriented Programming available
- May be exploited for malicious purposes since the code executes on the user's computers. (This is one reason why some people choose to disable JavaScript)
- Client-side servers can be unpredictable causing different interpretations across different browsers (whereas server-side scripts always produce the same output)

Python

Advantages:

- Team members past experience working with the language limits the learning curve in programming with this language
- High level language with multiple resources available online to help solve any problems
- It is an Object-Oriented language.
- Multiple libraries for web development
- Compatible with multiple APIs which are needed
- Good at error handling
- Very compatible with the web server Flask which is going to be used
- Good performance across devices

Disadvantages:

- Slower to run than C
- High memory consumption due to flexible data types limiting its use with memory intensive tasks
- Requires more testing and more errors at runtime because its dynamically typed

Hence, Python is overall the best language to choose out of the selected options due to it being an Object-Oriented Language which is good at error handling. Due to the vast compatibility of Python with the different APIs as well as the browsers which are available, this language was the ideal choice to be used for the backend framework of our program.

Frontend Language

For the frontend development of our program, we had to consider a language which is compatible while working with HTML and CSS. The language we found which was most efficient for this was JavaScript.

JavaScript

Advantages:

- More dynamic, aesthetically pleasing webpages due to popups and page slides
- Good compatibility across devices and thus can work well on different operating systems with various web browsers
- Quickly interprets and runs code
- Abundant resources to learn JavaScript
- Plugins can be used

Disadvantages:

- Team members unfamiliarity with the language and thus it could be harder to develop
- Client-side servers can be unpredictable causing different interpretations across different browsers (whereas server-side scripts always produce the same output)
- Lack of Object-Oriented Programming
- Does not support modules and interface

Even though we decided to use JavaScript, we found that TypeScript which is a superset of JavaScript, had better features which could help in the overall implementation of our program.

TypeScript

Advantages:

- Compiles to JavaScript
- Can write only one type of code which can be implemented on various different browsers without the use of building tools like Webpack
- Easy implementation since one type of code can be implemented across browsers without using building tools like Webpack
- Easier to maintain larger projects
- Helps to structure the system making the project more maintainable
- Supports modules and interface
- Less runtime errors
- Similar to JavaScript but with more features

Thus, TypeScript being an Object-Oriented Programming Language allows us to create classes in order to increase the maintainability of our code and this is going to be used for the frontend framework for our software.

4 CHOICE OF IMPLEMENTATION/TECHNOLOGY OR FRAMEWORKS

Frameworks and technologies chosen or considered

The frameworks/libraries that will be used are Flask (which contains flask login and redirection), jQuery and possibly Bootstrap for design and feature styling.

Client-side frameworks make it easier to produce interactive and dynamic pages compatible with multiple browsers/devices. They also provide pre-configured libraries for common functions. Low coupling can be achieved by separating the contents of the page to HTML, styling and layout to CSS and the pages' behaviour through Typescript.

Other client-side options included React and Angular. Angular uses Typescript and plain HTML templates to set up routing and http request handling. It is highly testable and uses languages that are already being used making it more familiar which means faster prototyping, however, it still has a

steep learning curve especially with the inexperienced knowledge of Model-View-Controller architectural patterns. React is a scalable, re-usable, flexible JavaScript library which has a big community and ecosystem and it constructs efficient virtual Document Object Models to allow faster rendering. However, it's View-oriented and requires prior knowledge on JSX. There is also no defined methodology yet on how to implement React, and isn't as straightforward as Typescript and HTML.

Server-side frameworks make it easier to write, maintain and scale web applications. They consist of libraries that simplify databases, authorization and rerouting URLs. JSON will be used, which is a templating system which takes stored data and formats it into text files. Flask (@app.route) helps us to route requests to the appropriate handler. This is useful because it allows URLs to change without having to change the code. Flask will also make it easier to access data in a request through working with HTML forms in get/post requests.

Alternative server-side options included Rails, Node.js/ Express.js, Django, Laravel and Spring. Rails uses Ruby, Laravel uses PHP and Spring uses Java, which eliminates them. This leaves Django and Express/Node.js. Django is similar to flask because they both are based off Python; however, Flask offers simplicity and flexibility while Django offers admin panels, database interfaces and ORM (Object-relational Mapping). The URL-router in Django is also more complicated because it uses regular expressions which are harder to use for beginners. (No members know Django). Flask was chosen over Django mainly because all team members have worked with Flask before. Express was another option since Typescript would be used in front end anyways, however Python syntax is easier and more readable, and also has more extensive documentation, libraries and is object-oriented.

Hence, the main reason these technologies were chosen, is that we're familiar with how they work and they serve their purpose well, as well as a few new technologies (JSON and Typescript) because they're quick to learn and there's plenty of documentation out there to learn when needed.

Table of Technologies with their uses and benefits

TECHNOLOGY	USE	BENEFITS
Python classes and libraries	Managing information about users and products. This includes creating new users when they register, storing updated information, adding and deleting products.	Making classes is efficient (we've all used it before), as well as it allows us to create attributes, methods(functions) and sub-classes that can inherit/override from their parent class.
JSON	Making stored class instances persist in a database (e.g. store available products so that when we add new products, they do not disappear from the website when we refresh).	We chose JSON over SQL or other databases, because it works cohesively with python classes (python classes can easily be translated into JSON and saved in text files and can also be used in front-end JavaScript). JSON is also more compact and readable and allows use of arrays compared to XML. XML parsing process is also slower.

		JSON is better for us than SQL since it is more flexible than a relational database with set schemas, and is a better system for variable data structures.
HTML/CSS	Displays information on websites and manages layout.	We've all coded in this language and there are lots of source codes online for layout and styling. It also works cohesively with Flask in terms of forms, submit buttons etc.
Flask and Typescript including their libraries (redirect, url_for, request, render_template)	Accept requests from client/user. Flask will be used mainly for redirection of pages, and Typescript for pop-ups.	We used a combination of both so that not every request requires refreshing and keeps the website more efficient and professional. Flask will handle requests which require authorization or going through many conditional statements, while Typescript handles confirmation or error messages. Additionally, Flask/Python has large libraries of functions which we can use for conditional statements.
Flask-Login	User session management: logging in, logging out and remembering users' sessions over extended periods of time	We can use this to help authorise users and identify current users, which helps us find information about them to display or use. It also protects some pages/functions so that they can only be accessed when logged in.
jQuery	This can be used for animating drop downs, calendars, hovering over rows in tables or getting and setting attributes or elements.	It creates a more dynamic and engaging website with movement and increases UI functionality. It also creates a more sophisticated design, styling and layout. It simplifies complicated Typescript functions. It also runs the same in all browsers. Alternatives include Webix and Wijmo however some of their functions are behind paywalls, and we've used jQuery before and it is easier to use because it uses CSS syntax.
Bootstrap	Provides HTML/CSS design templates for buttons, navigation, tables and also supports JavaScript plugins	It has thorough documentation online and is open source. Bootstrap also is compatible across all modern browsers and internet explorer versions. It is also consistent and features look the same across Internet Explorer, Chrome and Firefox.

5 CHOICE OF PLATFORM

Since all members have MacOS all code will be written and initially tested on MacOS and Chrome. Our customers should be able to access our website and it should look the same on recently updated (current update or one previous) MacOS, and on Chrome, Firefox and Safari.

Machine Requirements:

- Website should display all necessary features in a useable and easy to navigate manner on multiple machines using the same browser especially Windows, MacOS and Linux.
- Website should display all necessary features in a useable and easy to navigate manner on multiple browsers such as Chrome, Safari, Firefox etc.
- Website should display correctly on mobile browser as well.
- Styling of buttons, tables, texts and fonts should remain consistent across the three machines and all browsers
- Spacing and layout of information should remain consistent. When the browser display resolution is changed, text/information should not be cut off or hidden and must adjust.

Websites do not look the same across different platforms because different browsers interpret code and render pages differently. Issues can also occur when an old browser version doesn't support the latest standards e.g. HTML5 forms. Different operating systems also visualise buttons, check boxes and fields differently based on their own style. For example, Mac default submit buttons are ovals with shaded gradient but look square and flat on PC. The user's display resolution (whether it takes up the whole screen or smaller) also affects how the website looks.

Solutions

- We can do cross-browser testing (For example, we develop in one browser e.g. Firefox and check to make sure all features render the same on other browsers/machines and fix those that specifically don't).
- We can create custom buttons to bypass the issue with different operating systems using different default styles.
- We can use relative dimensions instead of static. For example, width = 100% rather than width = 1024px so that the size of the image/ feature adjusts depending on resolution and page size.
- We can use CSS reset rules to prevent browser engines having different default values for line height and padding from affecting how the page looks.
- We can provide fallbacks or avoid features that do not display on all browsers. For example, images should have an alt attribute describing the picture and we can avoid using flash.
- We can use conditional statements to determine which browser the client is using, and provide the right html for their browser/machine. For example, Internet Explorer conditional

comments can be used to selectively apply HTML code to different versions of Internet Explorer.

- We can use cross-browser friendly frameworks and libraries. For example, jQuery works across the 2 latest versions of Chrome, Safari and Firefox. Meanwhile, Bootstrap works across Android and IOS mobile Chrome and Firefox as well as Chrome and Firefox for desktop Mac and Windows. Bootstrap also works for Chrome and Firefox on Linux. However, Bootstrap does not support Windows desktop Safari or Android mobile Safari.

6 SUMMARY OF KEY BENEFITS OF ARCHITECTURAL CHOICES

All architectural elements were chosen due to their advantages in developing the Globeshoppers website. These advantages range from their ease of use to their compatibility with other architectural features. Architectural choices include Application Programming Interfaces (API), the Frontend Framework, the Backend Framework, the database, web browsers and the operating system.

APIs were chosen to access external data due to their beneficial functions they allow in the website. The foreign exchange rates API provides a quicker, more time efficient way to convert the Australian dollar into different currencies. The addition of this API is an easy way to enhance the user experience whilst not detracting a lot of time from working on more complex functions such as the messaging system. Additionally, the eBay Browse API and the Best Buys Recommendations API allows the creation of a 'mock-up' inventory of products. These architectural choices are advantageous since they provide a platform to allow browsing, viewing by category and trends, to be developed that would previously have only been possible if products were added and bought by many users. Also, the Browse API already possesses searching capabilities decreasing the time needed to create the websites searching feature. Similarly, the Recommendations API provides data to create a trending page as displaying trending items may be impossible due to a lack of real users. Lastly, the Upload API by Cloudinary allows users to upload images of the product they want. This is too difficult to program using the languages we have picked so an API will be used to take the image and save it in the website's database. This is beneficial as it allows this feature in the website, saves time and makes implantation simpler and easier. Hence, these architectural choices were selected to enhance the experience of users, increase time efficiency and to achieve the full features of the website despite it being a prototype.

The Frontend Framework involves a combination of HTML and CSS files as well as the Frontend Language Typescript. One benefit of this Frontend Framework is the previous use and familiarity of HTML and CSS which will make development more time efficient. The usage of HTML is advantageous because it is supported across browsers and is easily integrated with CSS and Typescript. This allows the website to be easier to implement and ensures cohesiveness across programming languages. Furtherly, CSS is beneficial for the website due to its adaptable nature, fast loading time and compatibility with other Frontend languages. Similarly, Typescript, a superset of JavaScript, is favourable as it supports JavaScript's libraries whilst containing additional features. Despite being unfamiliar with this language, it is known to be easy to learn due to readily accessible online tutorials and the features it possesses will help to produce a better functioning website with little errors. The most notable benefit over JavaScript is the reduction of runtime errors since it checks typing errors and compilation errors during development. Also, Typescript is extremely compatible with HTML and CSS making it desirable for the website. Furthermore, the JavaScript library, jQuery, will be used to simplify HTML files which makes development faster. It also has the benefits of being supported widely across browsers and it contains a variety of visual features which could help to achieve a more visually appealing website.

Moreover, the Backend Framework including Python for the Backend Language and Flask for the Backend Server, were selected due to their array of benefits. Both Python and Flask have previously been used so familiarity with these languages made it optimal in order to save time. Python is an easy to use and simplistic coding language since it allows fewer lines of codes for the same outcome when compared to other languages such as C. Also, it is beneficial since it works well with other languages such as Typescript. Flask is a Python web framework so it's extremely compatible with the Backend Language. Flask enhances our Backend Servers extensibility as it is highly flexible, it contains the ability to add new features without disrupting previous functions and many extensions can be installed and used such as flask-login. Due to the extensions found in Flask, it also saves time whilst developing this website.

Another architectural choice includes the use of text files in exchange of a complex database. Combining a database into the website would not be advantageous due to its high complexity and lack of necessity in a website prototype. To prevent detracting attention from programming the functioning of the website, such as posting products and the messaging system, to create a proficient, persisting application, text files will be used. Also, to create a better database in combination with these text files, JSON will be used. This data interchange format stores class instances to ensure consistency of information. JSON is beneficial as no incompatibility issues with frontend or backend languages will arise since it works well alongside Typescript and Python. Additionally, JSONs flexible nature makes it more beneficial for variable data types, allowing details to be updated in the database without complications.

Additionally, third party components such as web browsers were also considered. Chrome was selected since it will be used whilst developing and testing the website. This browser is beneficial since it is the most common and widely used. However, it is noted that the website functionality will be tested across a few other browsers such as safari, internet explorer and Firefox.

For developing the website, Mac OS has been selected since all team members use this operating system. Due to past development of websites on this operating system, team members are familiar with its functionality and incompatibility and inconsistency issues will be reduced by using one operating system.

Software Architecture

1 Updated User Stories

Requirement 1: Users are able to login or register a new account

ID	US1a
Feature	Login to my existing account
Description	As a user, I want to login to my existing account So that I can access my previous activity on the website while keeping my information secure
Given I am on any page under the website When I select 'login' in a bar on the top of all the pages Then I am redirected to a login page displaying two textboxes for email and password and a button for 'login' and a button labelled 'create new account' When I type in my email and password and click 'Login' Then I am redirected back to the page I started on before logging in	
Estimate	3 (1SP = 2.5 hrs)
Priority	Moderate

ID	US1b
Feature	Register a new account
Description	As a new user, I want to register a new account So that I can access all of the website's features and create a profile which stores my information
Given I am on the login page When I click the "Create New Account" button Then I am redirected to a sign-up page displaying text-boxes for Email, Name and Password (which is hidden), 'sign up' and 'I already have an account' button When I type in my new account details and click 'Sign Up' Then I am redirected back to the page I started on before signing up	
Estimate	2 (1SP = 2.5 hrs)
Priority	Moderate

ID	US1c
Feature	Redirect to login page
Description	<p>As a user, I want to login first So that I can access features/pages that is only for users that have logged in</p> <p>Given I want to request item/post item/message users (pages that can only be accessed after logging in) When I click those action buttons Then I am redirected to the login page with email and password textboxes, 'login' and a 'create new account' button When I type in my email and password and click 'Login' Then I am redirected back to the page I was on before logging on</p>
Estimate	2 (1SP = 2.5 hrs)
Priority	Low

Requirement 2: User wants to request items from overseas

ID	US2a
Feature	Post a request for an item (login required)
Description	<p>As a user, I want to post a request for an item So that other users can view and accept my request if they are able to help</p> <p>Given I want to post a request for an item from overseas When I fill up the details of my item (name, country, price, category, quantity) at the "Request Product" column, upload a picture/add a product link and click the 'Submit Request' button to post my request Then a pop-up confirmation will appear</p>
Estimate	4 (1SP = 2.5 hrs)
Priority	High

ID	US2b
Feature	Add a new request onto existing item requests (login required)
Description	<p>As a user, I want to add a new request onto existing item requested by another user, So that I can obtain the same item requested by others</p> <p>Given I am on the item's description page When I click the "I want it too" button Then a pop-up appears where I have the option to write a message and select a quantity from a drop-down When I click 'submit' button Then my request will appear in the list labelled 'Requests' on the item's description page and my profile page When I click 'cancel' Then the pop-up will disappear and I will be back on the item's description page</p>
Estimate	4 (1SP = 2.5 hrs)
Priority	Moderate

Requirement 3: User wants to view requested items

ID	US3a
Feature	View list of own requested items (login required)
Description	<p>As a user, I want to view a list of my requested items, So that I can know the status of the items requested</p> <p>Given I am on any page in the website When I click "View Profile" at the icon at the top bar of the website Then I am redirected to my profile with a list of my current requests and previous purchases with their status And the status for my request will be "Accepted" or "Pending" depending if it's accepted by any user</p>
Estimate	3 (1SP = 2.5 hrs)
Priority	Moderate

Requirement 4: User wants to delete requested items

ID	US4a
Feature	Delete pending requests (login required)
Description	As a user, I want to delete my request for items, So that I don't have to spend money on something I no longer desired
Given I am on my home page When I click "View Profile" at the icon at the top bar of the website Then I am redirected to my profile with a list of my current requests and previous purchases with their status When I delete my request with a "Pending" status by clicking the bin button next to it Then a pop up will appear with "Ok" and "Cancel" button requesting deletion confirmation by the user	
Estimate	3 (1SP = 2.5 hrs)
Priority	Moderate

Requirement 5: Users want to find specific items that they want

ID	US5a
Feature	Search for the items that have been requested
Description	As a user, I want to search for the items that have been requested, So that I can add request on the existing item or accept that request
Given I am on any page in the website When I fill in the search bar with the item that I am interested and press the "Search" button Then I should see all the item requests that include the word or words I have searched in the title or description	
Estimate	5 (1SP = 2.5 hrs)
Priority	High

Requirement 6: Users want to view specific items by category

ID	US6a
Feature	View requested items by other users according to category
Description	As a user, I want to view items according to their category So that I can easily view all products I am interested in and view all similar products on one page
Given I am on the “Home” page When I press a category button (“beauty”, “clothes”, “accessories”, etc) Then I will be redirected to the category page which shows all of the items within the matching category	
Estimate	2 (1SP = 2.5 hrs)
Priority	Low

Requirement 7: User wants to view items requested by other users

ID	US7a
Feature	View item request made by another user
Description	As a user, I want to view an item request made by another user, So that I can add my request if I’m interested or want to offer help to other users
Given I am on the “Home” page and see a list of items requested by other users When I click on the item’s name to see more of a particular item request Then I should be on the item’s description page with the item’s details such as the name, images, country, quantity, price offered, user’s name and profile link	
Estimate	3 (1SP = 2.5 hrs)
Priority	High

Requirement 8: User wants to offer help by accepting purchase requests by other users

ID	US8a
Feature	Accept item requests (login required)
Description	<p>As a user, I want to accept an item request from another user, So that I can make a profit with my extra luggage space</p> <p>Given I am on the requested item's description page When I press the 'offer help' button at the request column Then a verification message will appear with the item's details reiterated with a message column, submit and cancel button When I click the submit button to confirm offer Then I will be redirected back to the item's description page and an offer message will be sent to the customer's inbox</p>
Estimate	4 (1SP = 2.5 hrs)
Priority	High

Requirement 9: User wants to accept offers by other users

ID	US9a
Feature	Accept offers by other users (login required)
Description	<p>As a user(customer), I want to be able to accept offers by the other users (travellers), So that I can have a choice to decide which traveller I would like to accept</p> <p>Given I am at any page on the website When I click the "Inbox" button at the top bar of the website Then I will be redirected to the "Inbox" page with messages and offers by users(travellers) When I click the "Accept Offer" button next to their user's profile icon Then the status of my item in my profile page will change from "Pending" to "Accepted"</p>
Estimate	4 (1SP = 2.5 hrs)
Priority	High

Requirement 10: Users need to be able to review each other to provide feedback

ID	US10a
Feature	Write reviews for other users (login required)
Description	As a user, I want to write reviews for another user after completing a purchase with them So that other users can know their reliability
	Given I am on another user's profile page When I click the "Review Me" button on their profile Then I am redirected to the review page with ratings and a comment section When I select the star ratings or/and type in my feedback And I press "Submit" button Then I should see my review and updated ratings under the user's profile page
Estimate	2 (1SP = 2.5 hrs)
Priority	Low

Requirement 11: User need to be able to view, edit their own profile and view other users' profiles

ID	US11a
Feature	View another users' profile
Description	As a user, I want to view other users' profiles So that I can learn more about the user I am selling to/buying from.
	Given I am on any page that displays another user's name or icon such as an item's information page or in my inbox When I select the other user's name or icon Then I am directed to their profile page with their bio, ratings, reviews, current requests, previous purchases, future trip information, review and message buttons
Estimate	2 (1SP = 2.5 hrs)
Priority	Low

ID	US11b
Feature	View my own profile (login required)
Description	<p>As a user, I want to view my own profile So that I can update my information, check my information is correct and implement the feedback I received from reviews.</p> <p>Given I am on any page on the website When I select my profile icon in the bar at the top bar of the website Then I am directed to my own profile page And I am able to see reviews others have written about me, my bio, current requests, previous purchases, future trip information and an 'Edit profile' button.</p>
Estimate	2 (1SP = 2.5 hrs)
Priority	Low

ID	US11c
Feature	Update my personal information (login required)
Description	<p>As a user, I want to update my personal information So that other users can receive the correct updated information and to help them find an appropriate user to suit their needs.</p> <p>Given I am on my profile page When I select 'Edit profile' button Then I can replace my profile picture And add or remove information in my 'about me' bio And change my username, email or contact number When I click the 'Edit' button to save these changes Then I will be redirected back to my own profile with the information updated</p>
Estimate	2 (1SP = 2.5 hrs)
Priority	Low

Requirement 12: Users are able to view and reply messages in inbox

ID	US12a
Feature	View a list of conversations in the inbox (login required)
Description	As a user, I want to view a list of messages in their inbox So that I can know which user accepted my request or users that are interested to connect with me
Given I am on any page under the website and have logged in When I select the "Inbox" in a bar on the top of all the pages Then I am redirected to the Inbox page And I am able to see a summary list of all conversations between other users and I including their profile icon, name, requested item and country and a button to read the full message/previous conversation	
Estimate	4 (1SP = 2.5 hrs)
Priority	High

ID	US12b
Feature	View the whole message in the inbox (login required)
Description	As a user, I want to view the whole message in my inbox So that I can know the whole message other users sent to me
Given I am on the inbox page and have logged in When I want to view the user's message Then I click the "Read Messages" button And a pop up appears displaying their name, their full message/past conversation and a text-box where you can reply as well as a 'submit' and 'cancel' button When I finish reading the message or want to close the pop up Then I click the cancel button on the pop up	
Estimate	2 (1SP = 2.5 hrs)
Priority	Low

ID	US12c
Feature	Reply to the message in the inbox (login required)

Description	As a user, I want to reply to the message in my inbox So that I can tell the other user my purchase intention or some information of the meet-up place/time	
	Given I have clicked the 'read messages' button on the inbox page and have logged in When I write a reply in the pop-up box and click 'submit' Then a confirmation message pops up When I press the "OK" button Then I will be redirected back to my inbox	
Estimate	2 (1SP = 2.5 hrs)	
Priority	Low	

Requirement 13: Users are able to contact each other through messages

ID	US13a	
Feature	Contact other users (login required)	
Description	As a user, I want to contact another user So that I can clarify purchase details with them	
	Given I am on that user's profile page When I click the "Message" button on their profile Then a pop-up message box will appear When I click the "Cancel" button in the message box Then I am redirected to the user's profile When I type in my question/message to the user and click the "Submit" button Then a confirmation message pops up	
Estimate	3 (1SP = 2.5 hrs)	
Priority	Moderate	

Requirement 14: Users are able to add or delete their upcoming trip information

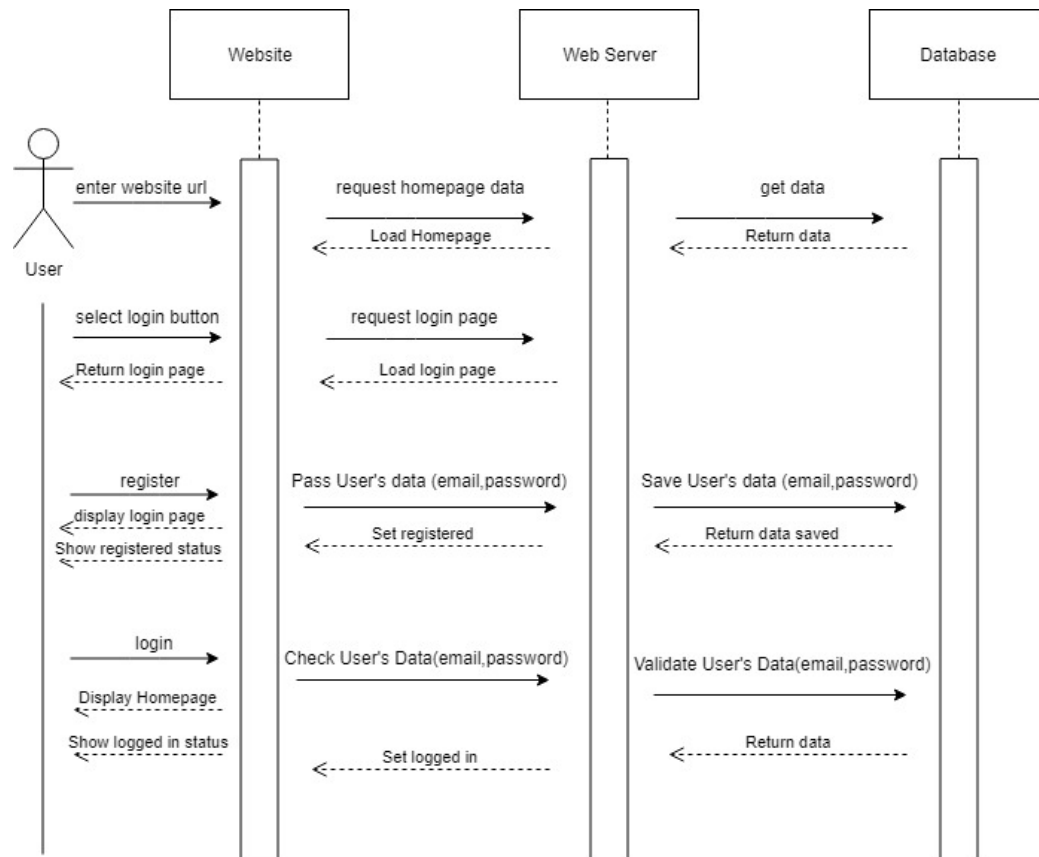
ID	US14a	
Feature	Add upcoming trips information onto my profile (login required)	
Description	As a user, I want to add my upcoming trip information on my profile	

So that other users can contact me if they need my help to purchase their request from my destination country	
Given I am on any page on the website and have logged in as a user When I click the “Add trip” button at the top bar of the website And I will be directed to a trip details page with a drop down to select my destination country, trip start and return date When I have filled in my trip details And want to post it onto my profile and click the “Post Trip” button Then the trip information will appear on my profile	
Estimate	3 (1SP = 2.5 hrs)
Priority	Low

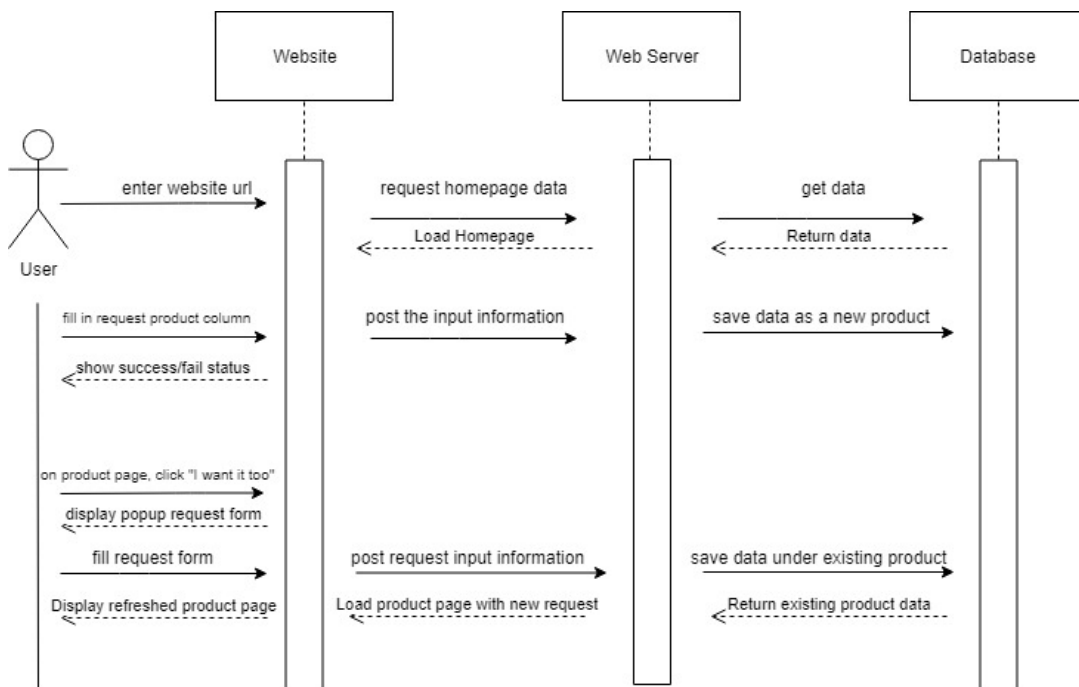
ID	US14b
Feature	Delete trips information on profile (login required)
Description	As a user, I want to delete my upcoming trip information on my profile So that I can notify other users that I am no longer travelling to a country and cannot buy products there
Given I am on my profile page and have logged in as a user When I click the bin icon next to the trip details Then a pop-up confirmation will appear with an “OK” button to confirm and a “Cancel” button to cancel the deletion	
Estimate	2 (1SP = 2.5 hrs)
Priority	Low

2 Sequence diagrams for each use case

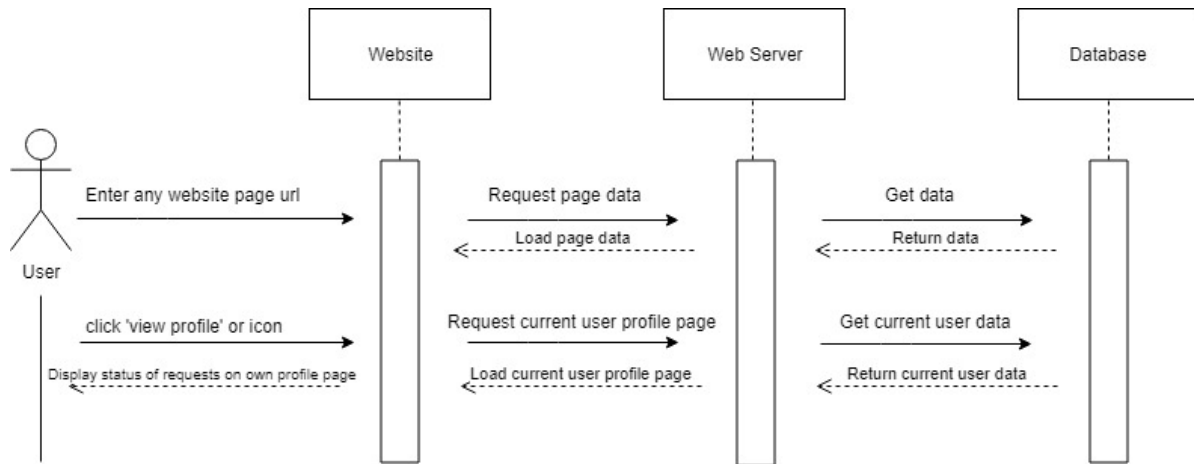
Use Case 1



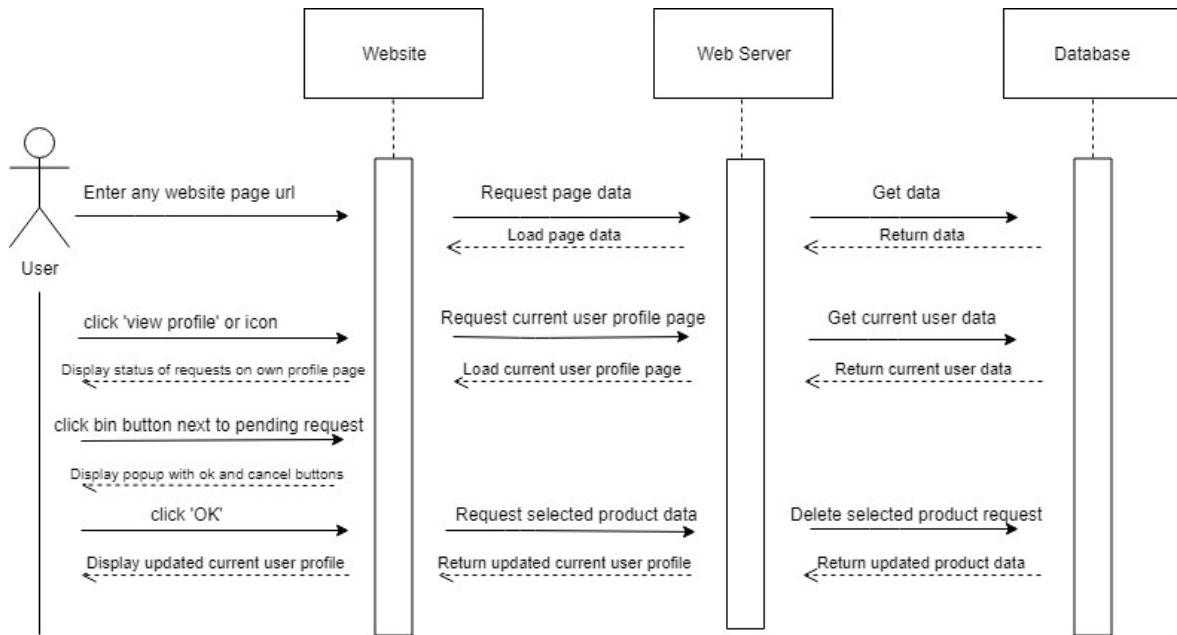
Use Case 2



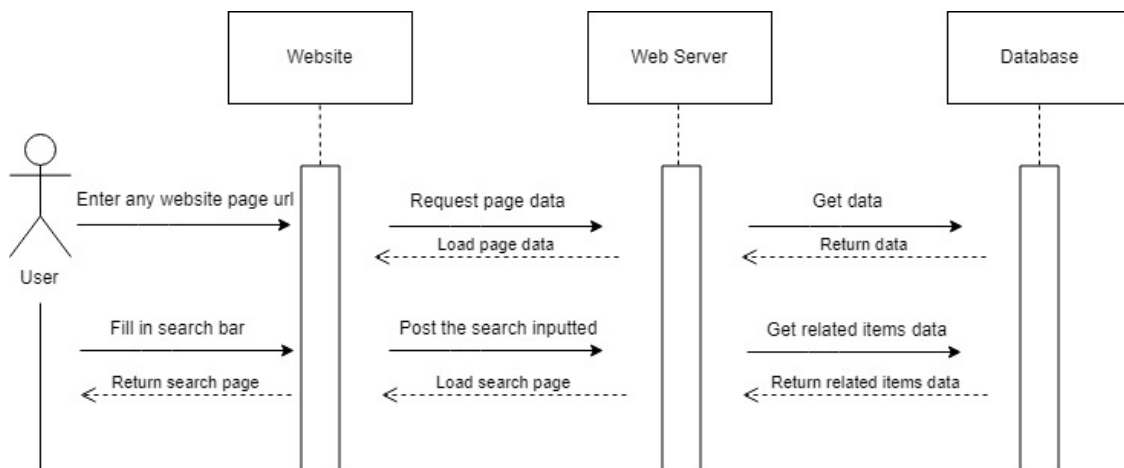
Use Case 3



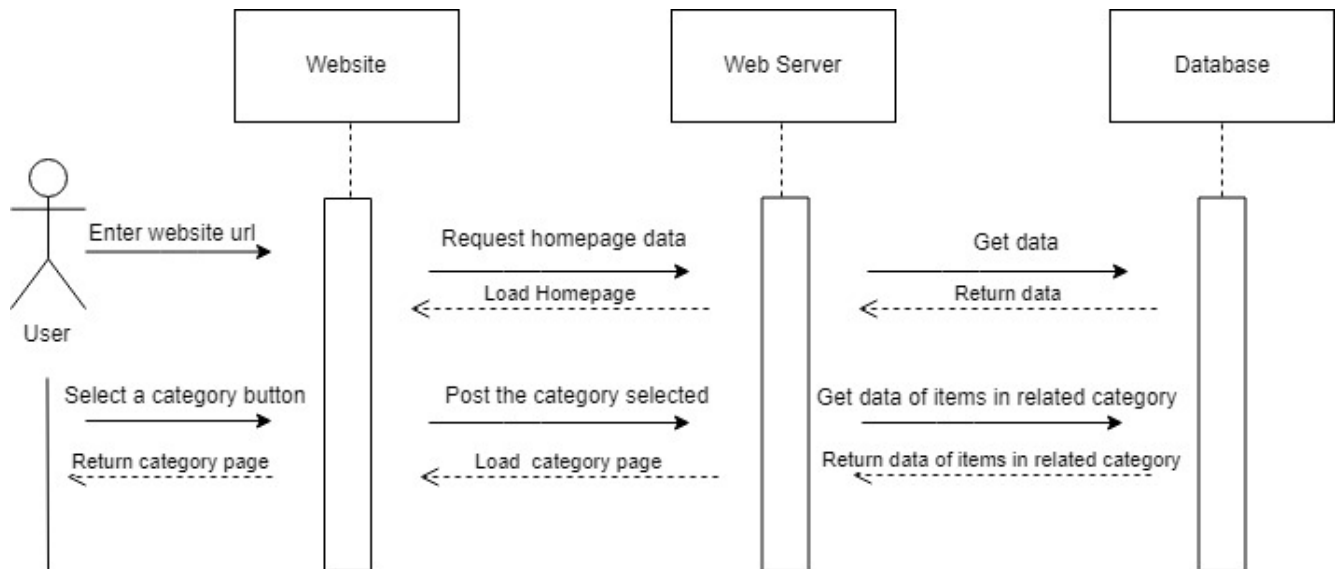
Use Case 4



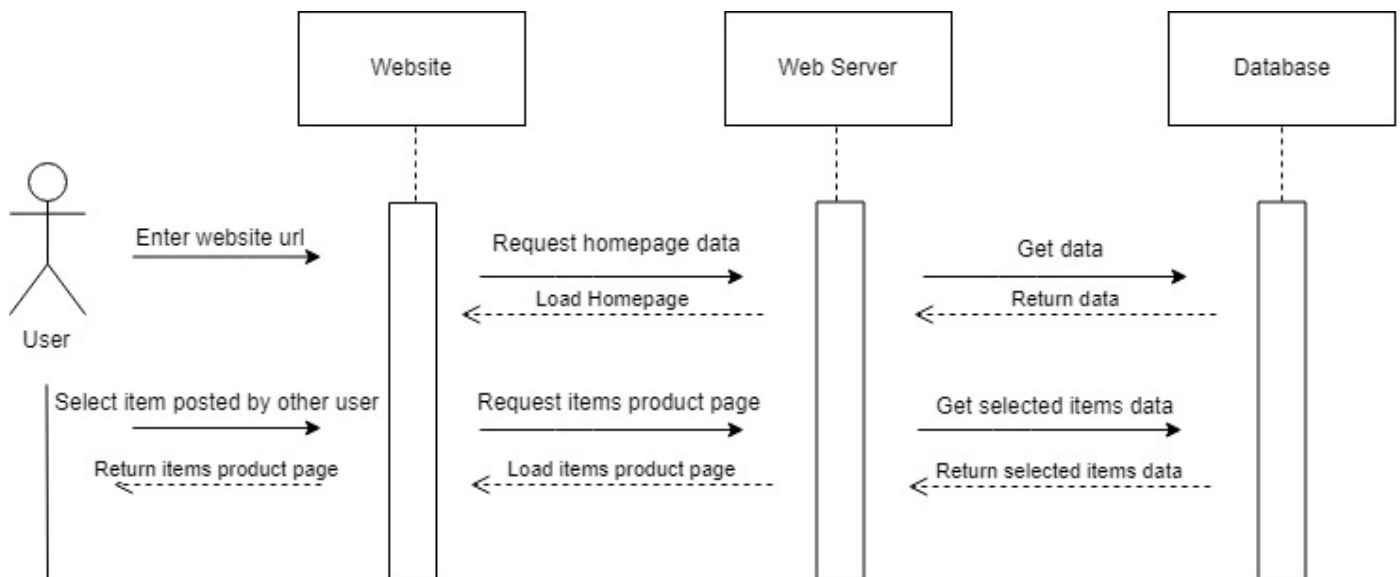
Use Case 5



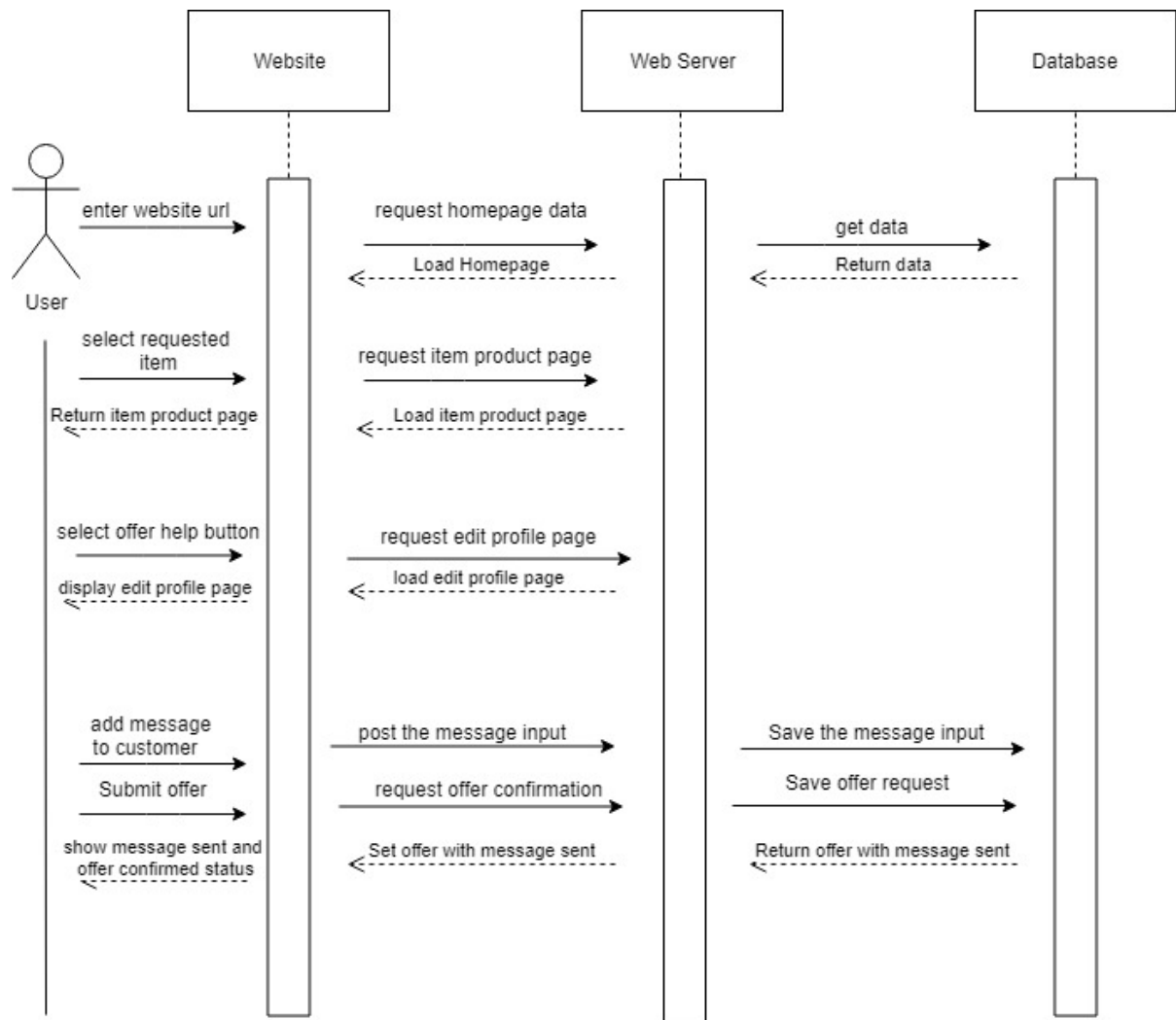
Use Case 6



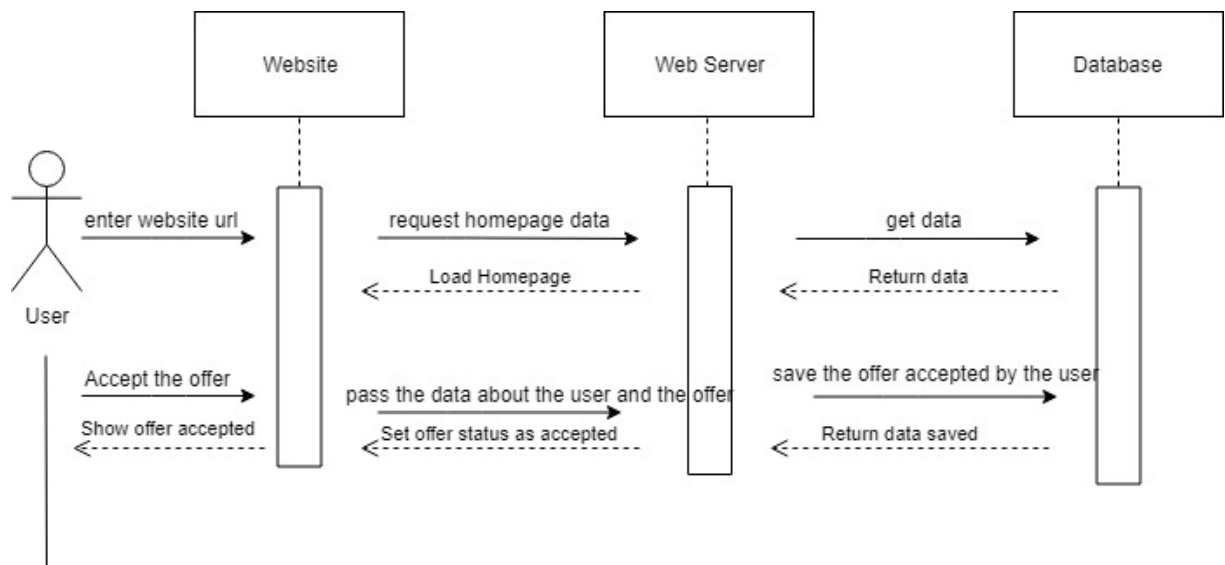
Use Case 7



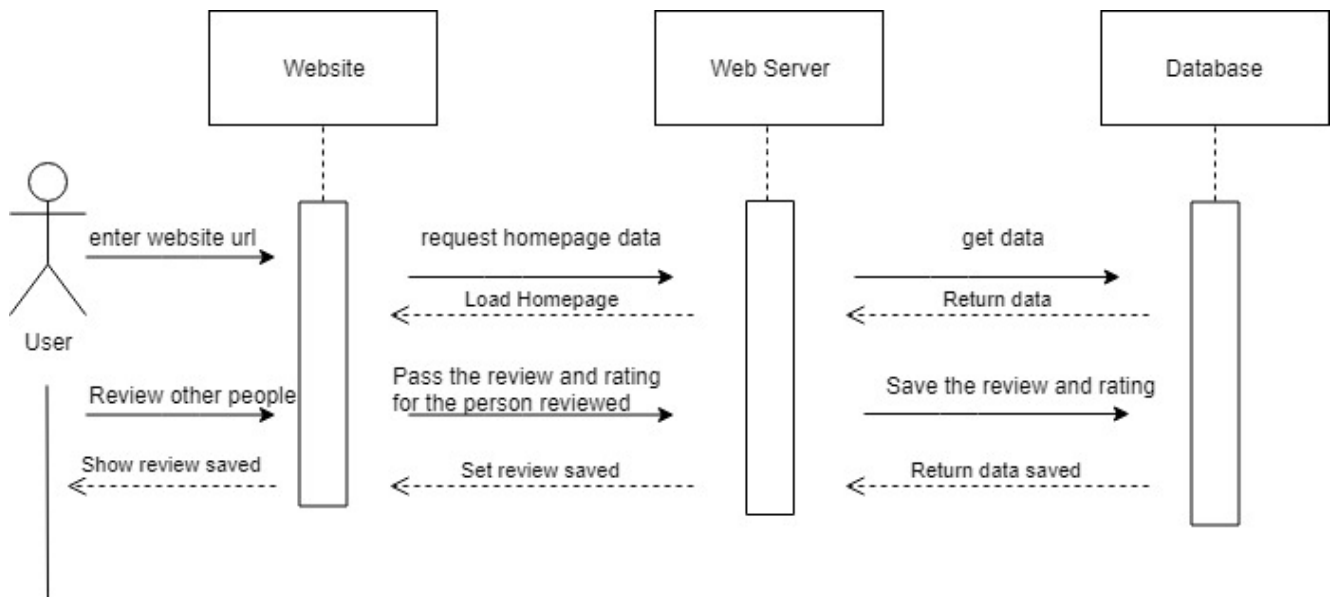
Use Case 8



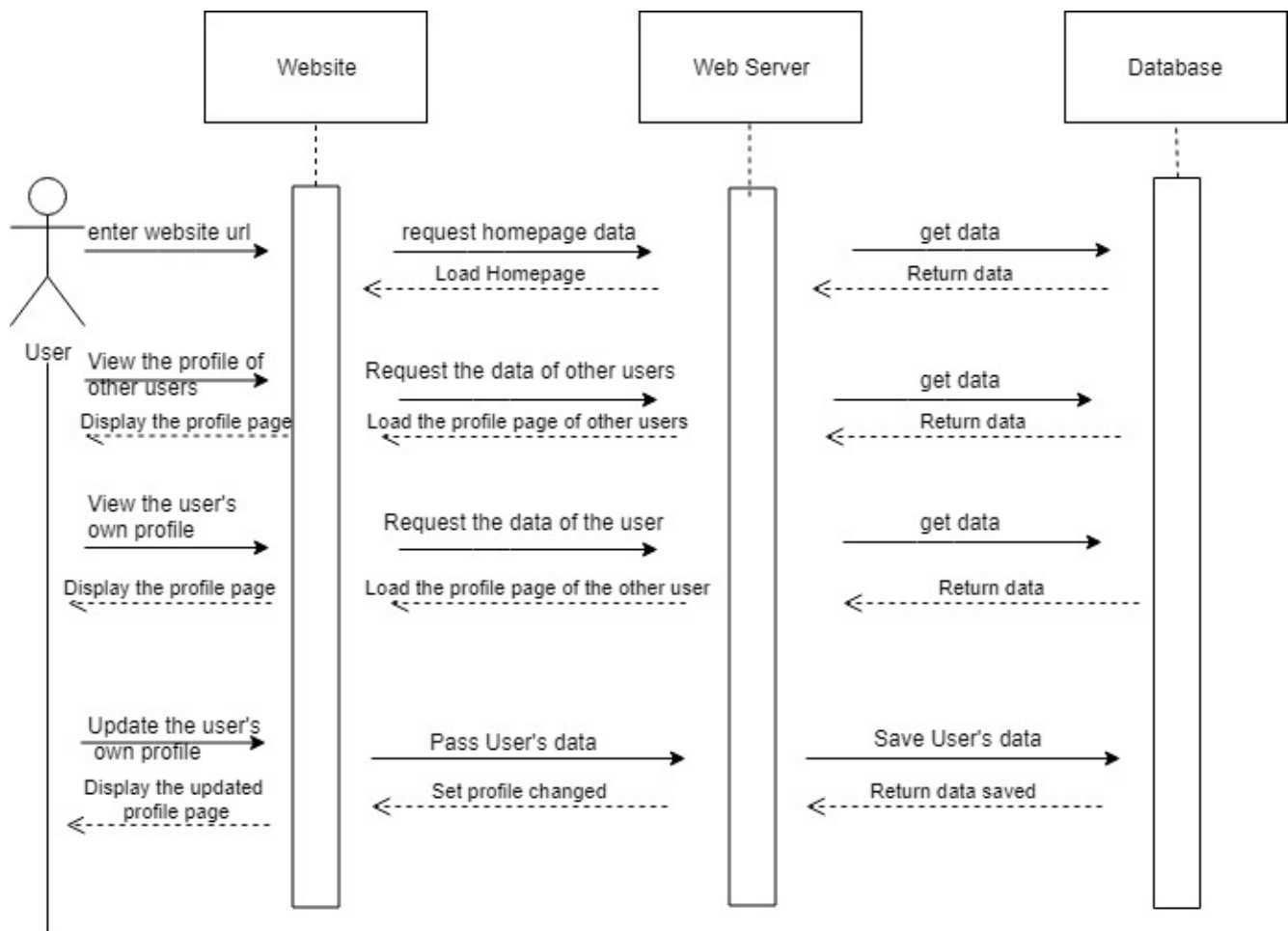
Use Case 9



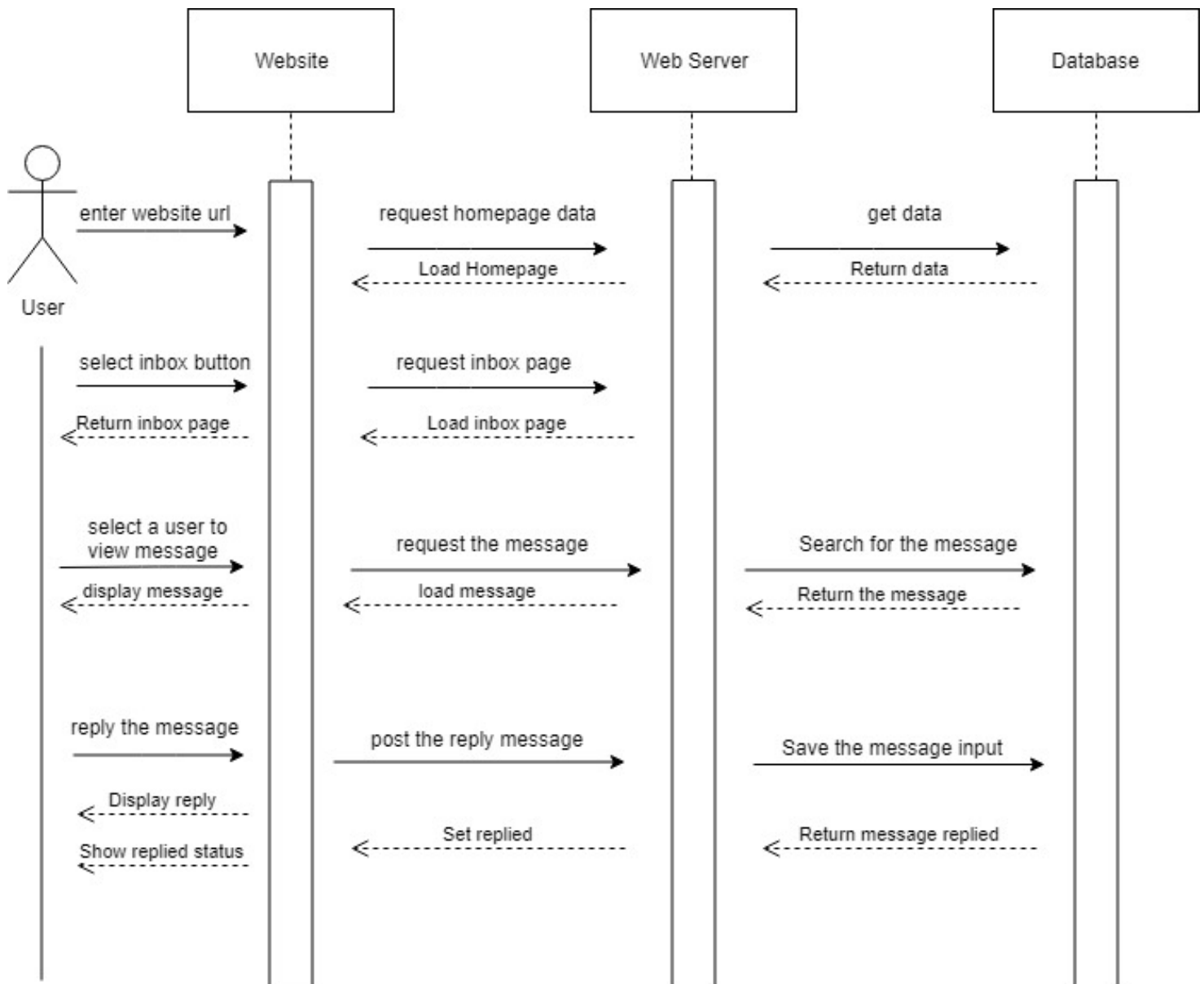
Use Case 10



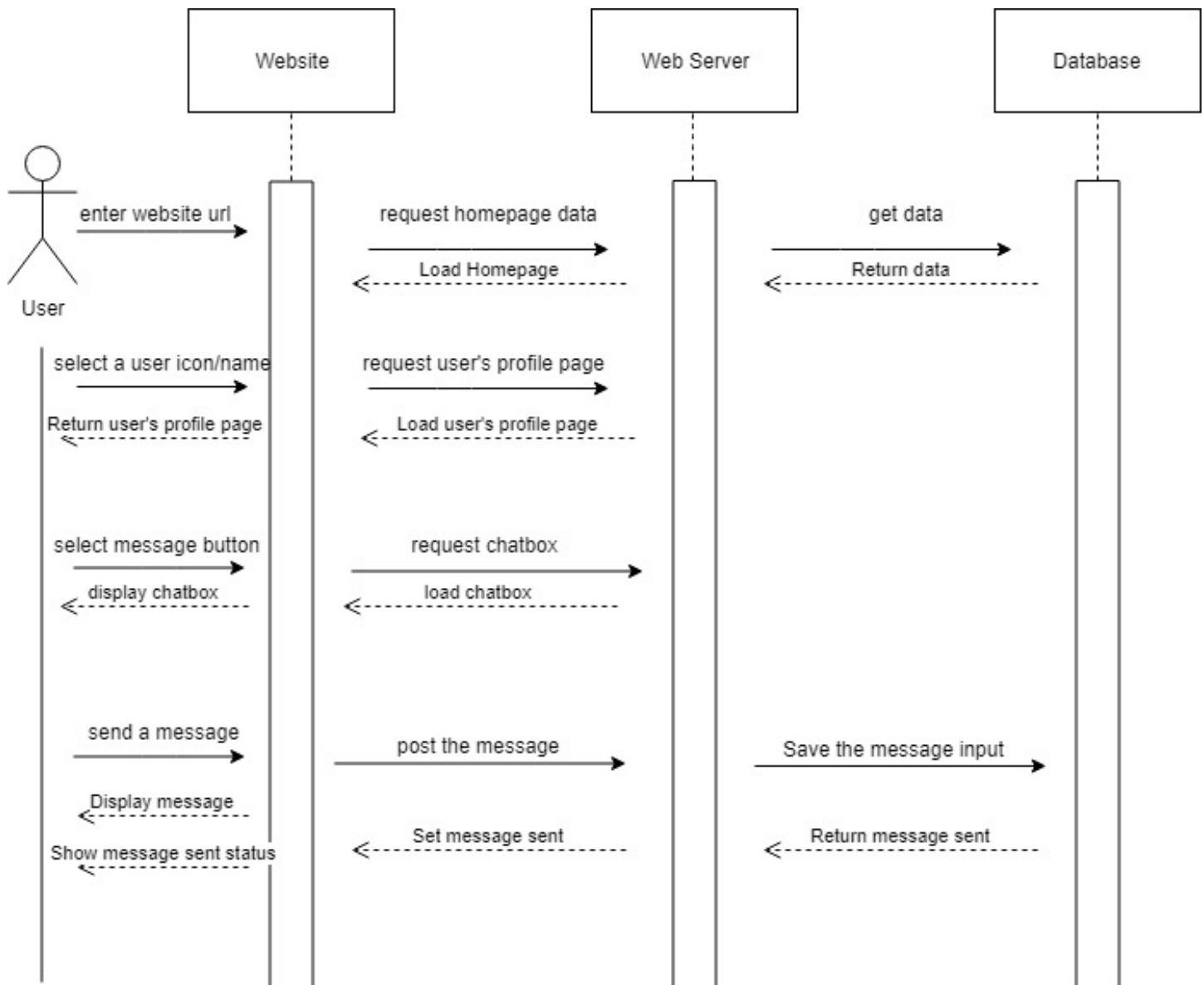
Use Case 11



Use Case 12



Use Case 13



Use Case 14

