SWE 632 Spring 2023 Project Checkpoint #2

Website URL: http://mason.gmu.edu/~mveludut/home.html

Project Argument

Why this website?

Pets are an integral part of many people's lives, and they deserve to be treated with the best care possible. With an increasing number of pet owners worldwide, there is a growing need for a convenient and efficient platform that provides all the necessary pet care products and services in one place. Therefore, creating an e-commerce platform dedicated to pets (at present for dogs and cats, but will cater to other animals as well as and when deemed appropriate by the market) needs and accessories is essential to cater to this growing demand.

What we are solving:

The problem we are solving is the lack of a comprehensive e-commerce platform dedicated to pet care products and services. Many pet owners struggle to find high-quality and reliable products and services for their fur friends, which can be time-consuming and frustrating. Our platform, "Paws & Tails," aims to solve this problem by providing a one-stop-shop for all pet care needs, including pet food, toys, grooming products, and veterinary consultation services. Presently we are only focusing on Dogs and cat. In future we will expands to all Pet animals

Target domain/ who needs it?

Pet owners, animal lovers, and anyone looking for high-quality pet care products and services will benefit from our platform. The platform is designed to cater to the needs of pet owners with different types of pets. Presently exclusive for dogs and cats, making it accessible for these pet owners. In future we will expand to all kinds of pets.

Our plan How to tackle this problem & objective:

We plan to solve this problem by developing a high-quality user interface (UI) for our e-commerce platform that is user-friendly, visually appealing, and functional. Our platform will feature various hyperlinks, buttons, pop cards, and other components that provide affordance to the user, making it easy to navigate and find the necessary products and services. We have also incorporated signifiers in the form of buttons that change colors, navbar menus that change background colors, and cards that scale up on hovering, making the platform more engaging and interactive for the users. Additional features include autocomplete feature in FAQS which enable user to search their queries quickly. We will continue to improve and iterate on the platform to ensure that it remains user-friendly and meets the evolving needs of our users like minimal interaction and yet to be look beautiful.

Objective

Our objective for this project is to create a user interface (UI) for an online e-commerce platform dedicated to pet needs and accessories. The name of the website is "Paws & Tails". The main goal is to have a one stop platform which will cater to almost every need a pet and a pet parent has, including but not limited to Pet food, Pet toys, Grooming products, and even veterinary consultation services.

Users will be able to find a wide variety of pet products and services on our website, making it a one-stop shop for all their pet care needs. We plan to develop a high-quality website that will be user-friendly, visually appealing, and functional, providing users with a satisfying UI experience.

We aspire to make this website as user friendly as possible. Minimizing the Gulfs of Execution to the bare minimum is one of our primary goals. We plan to achieve this by keeping our page simple and providing an easy and smooth flow between components. No big knowledge of anything would be required to use the website.

Using bootstrap, we have tried to make the overall look and feel of the website visually appealing and pleasant to the users. We have provided various hyperlinks, buttons, pop cards and other stuff to provide affordance to the user while using them. We have provided signifiers in the form of buttons that change the colors, navbar menus that change the background colors and cards that scale up on hovering. We intend to make them more significant by bringing other effects and ideas in the further iterations of the project.

Main Components/Pages/Features of our website:

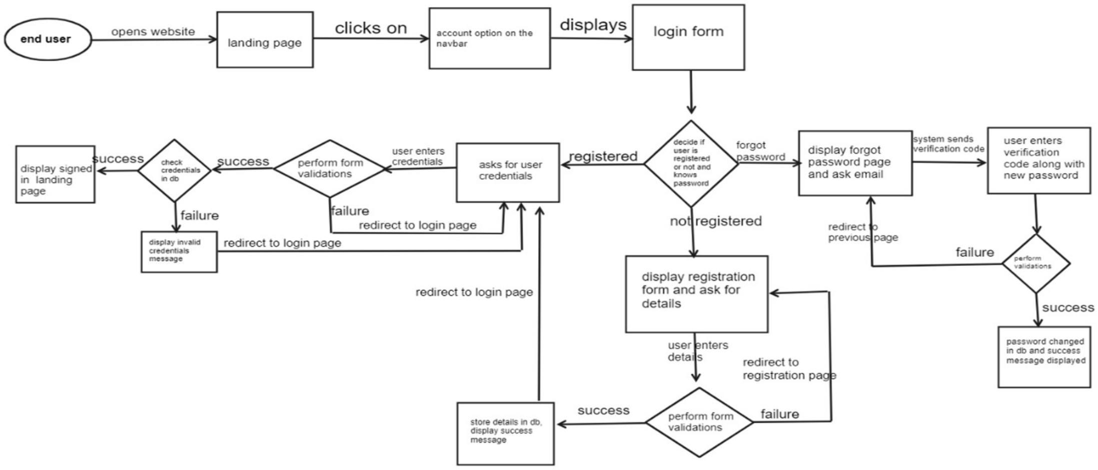
1. Interactive and Easy to navigate Landing page.
2. Exclusive Page to showcase offers and deals. (Part of next iteration)
3. Account login modal.
4. Account Registration page.
5. Password Recovery (Part of next iteration)
6. Cart view of all products and checkout.
7. Tele Consultation for your pets from the comfort of your home.
8. Responsive Navbar containing various categories and options.
9. Footer containing links to various components and pages of the website.
10. Landing page showing top categories, top brands and a small glimpse of the offers and deals available.
11. Contact us page contains information useful to contact the owners.
12. About us page telling users about who we are, our story and what we aspire to do.

Technologies being used: HTML, CSS, Bootstrap, JavaScript, jQuery, JSON

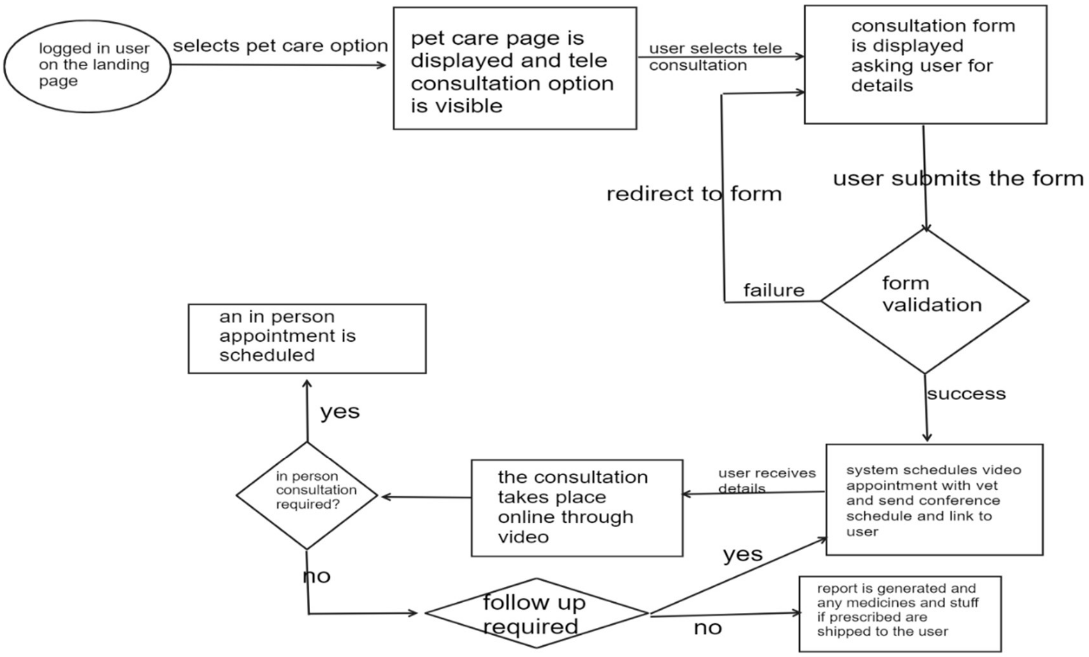
Testing Technologies : Selenium, Jest

Information flow diagrams:

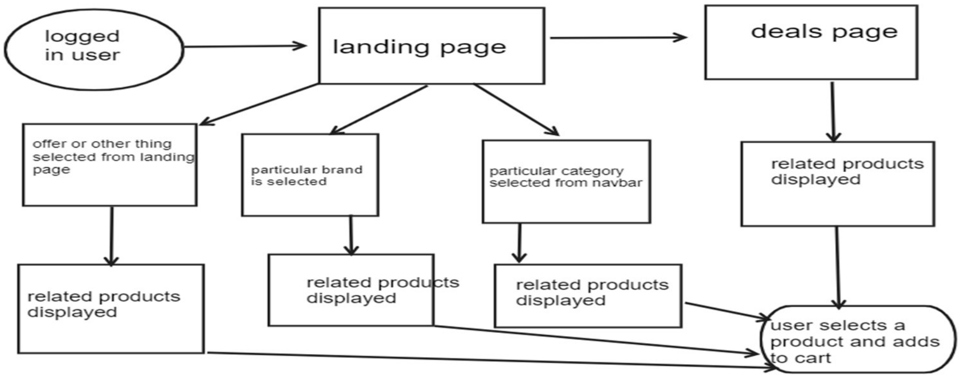
1. Login , Register and Forgot Password information flow diagram between the components.


end user
opens website
landing page
clicks on
account option on the navbar
displays
login form
decide if user is registered or not and knows password
registered
forgot password
not registered
asks for user credentials
user enters credentials
perform form validations
success
failure
redirect to login page
check credentials in db
success
display signed in landing page
failure
display invalid credentials message
redirect to login page
display forgot password page and ask email
system sends verification code
user enters verification code along with new password
perform validations
failure
redirect to previous page
success
password changed in db and success message displayed
display registration form and ask for details
user enters details
perform form validations
failure
redirect to registration page
success
store details in db, display success message
redirect to login page

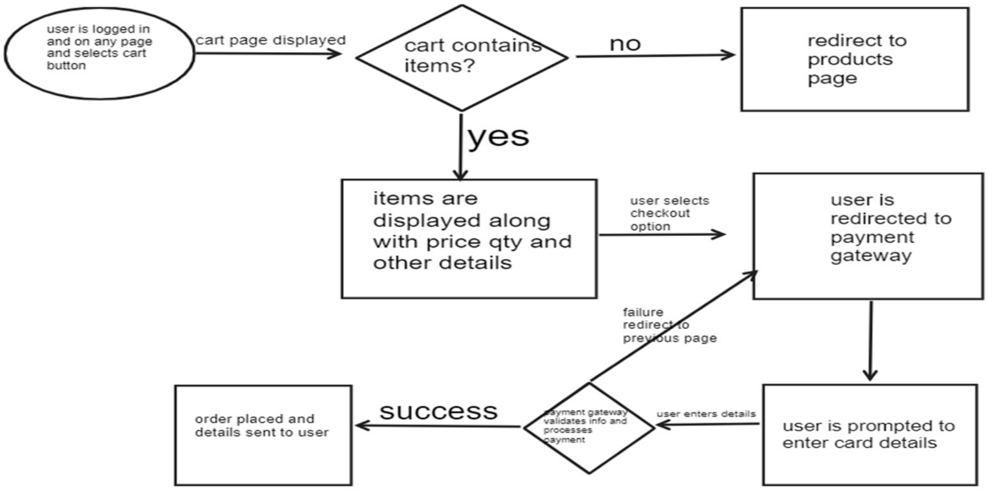
2. Pet health and Care Component information flow.


logged in user on the landing page
selects pet care option
pet care page is displayed and tele consultation option is visible
user selects tele consultation
consultation form is displayed asking user for details
user submits the form
form validation
failure
redirect to form
success
system schedules video appointment with vet and send conference schedule and link to user
user receives details
the consultation takes place online through video
in person consultation required?
yes
an in person appointment is scheduled
no
follow up required
yes
no
report is generated and any medicines and stuff if prescribed are shipped to the user

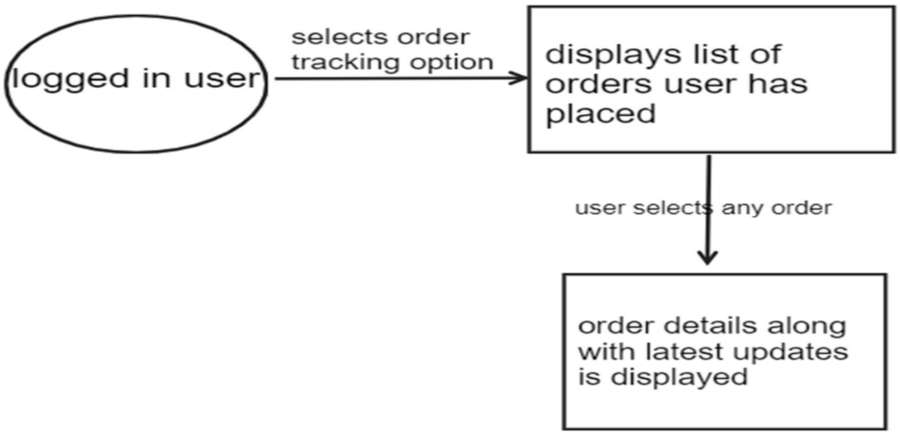
3. Deals and Product shopping information flow.


logged in user
landing page
deals page
offer or other thing selected from landing page
particular brand is selected
particular category selected from navbar
related products displayed
related products displayed
related products displayed
related products displayed
related products displayed
user selects a product and adds to cart

4. Cart and Payment.

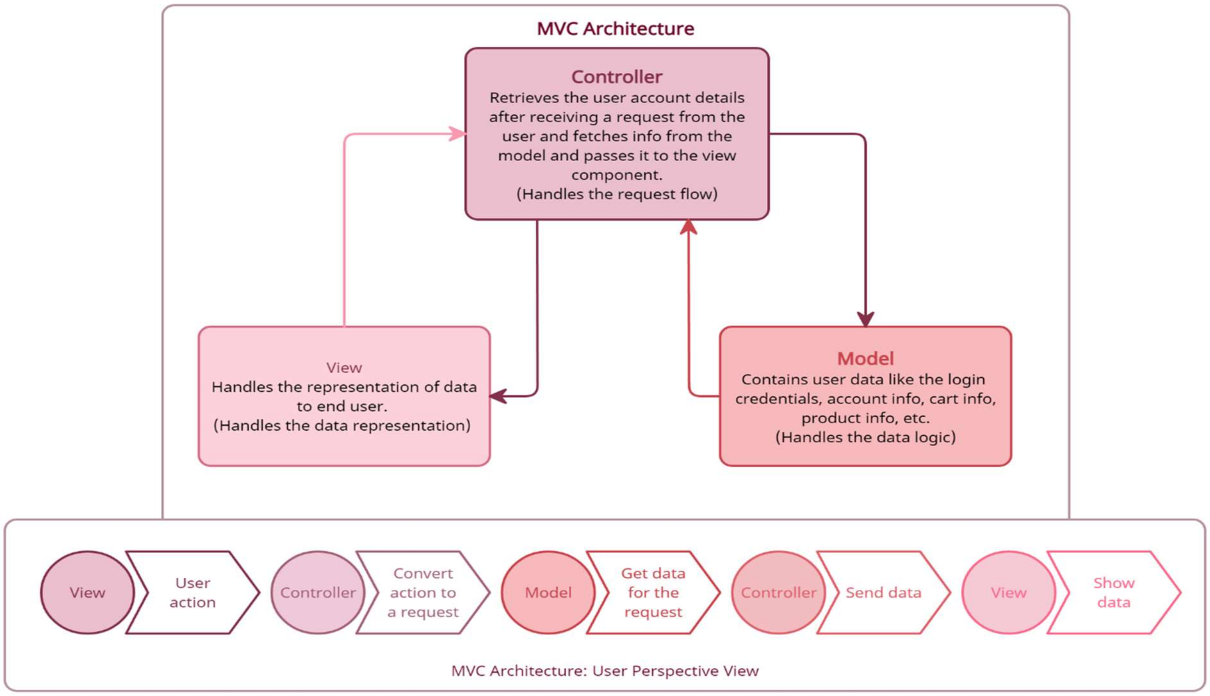

user is logged in and on any page and selects cart button
cart page displayed
cart contains items?
no
redirect to products page
yes
items are displayed along with price qty and other details
user selects checkout option
user is redirected to payment gateway
failure redirect to previous page
user is prompted to enter card details
user enters details
payment gateway validates info and processes payment
success
order placed and details sent to user

5. Order Tracking.


logged in user
selects order tracking option
displays list of orders user has placed
user selects any order
order details along with latest updates is displayed

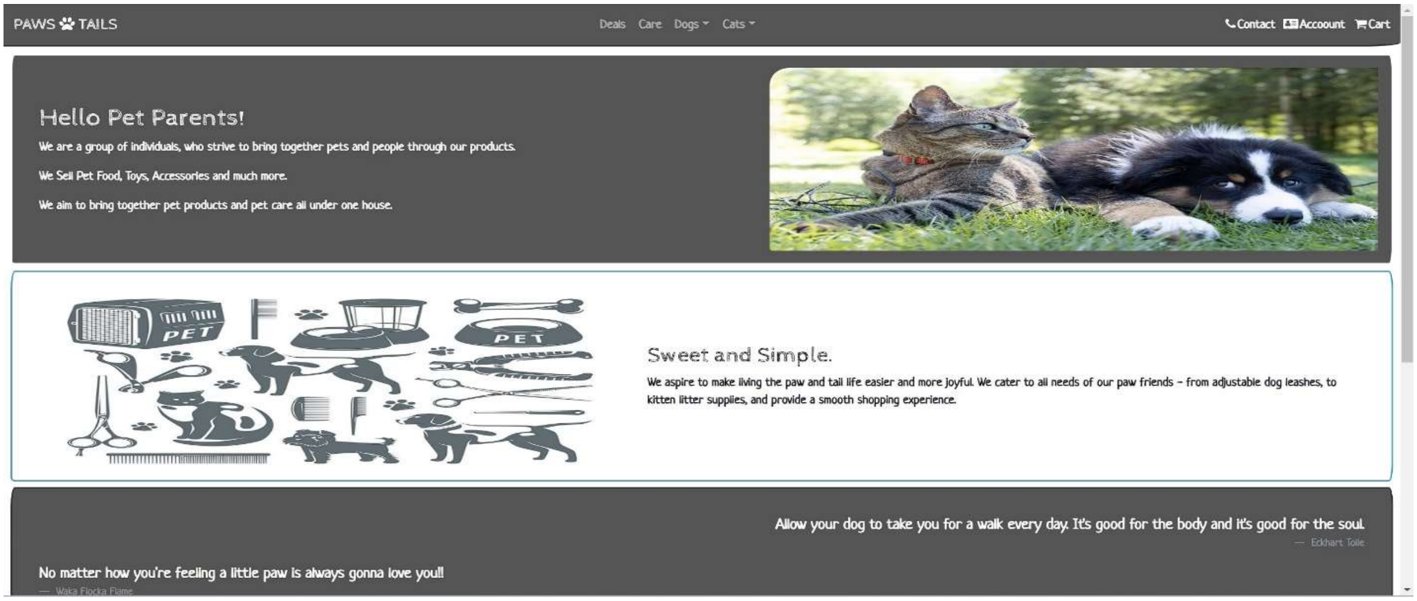
Architectural Diagram:

MVC architecture diagram for our website is as below,


MVC Architecture
Controller
Retrieves the user account details after receiving a request from the user and fetches info from the model and passes it to the view component.
(Handles the request flow)
View
Handles the representation of data to end user.
(Handles the data representation)
Model
Contains user data like the login credentials, account info, cart info, product info, etc.
(Handles the data logic)
View
User action
Controller
Convert action to a request
Model
Get data for the request
Controller
Send data
View
Show data
MVC Architecture: User Perspective View

Sample Screenshots of the website:

About Us Page:



Hello Pet Parents!

We are a group of individuals, who strive to bring together pets and people through our products.

We Sell Pet Food, Toys, Accessories and much more.

We aim to bring together pet products and pet care all under one house.

Sweet and Simple.

We aspire to make living the paw and tail life easier and more joyful. We cater to all needs of our paw friends - from adjustable dog leashes, to kitten litter supplies, and provide a smooth shopping experience.

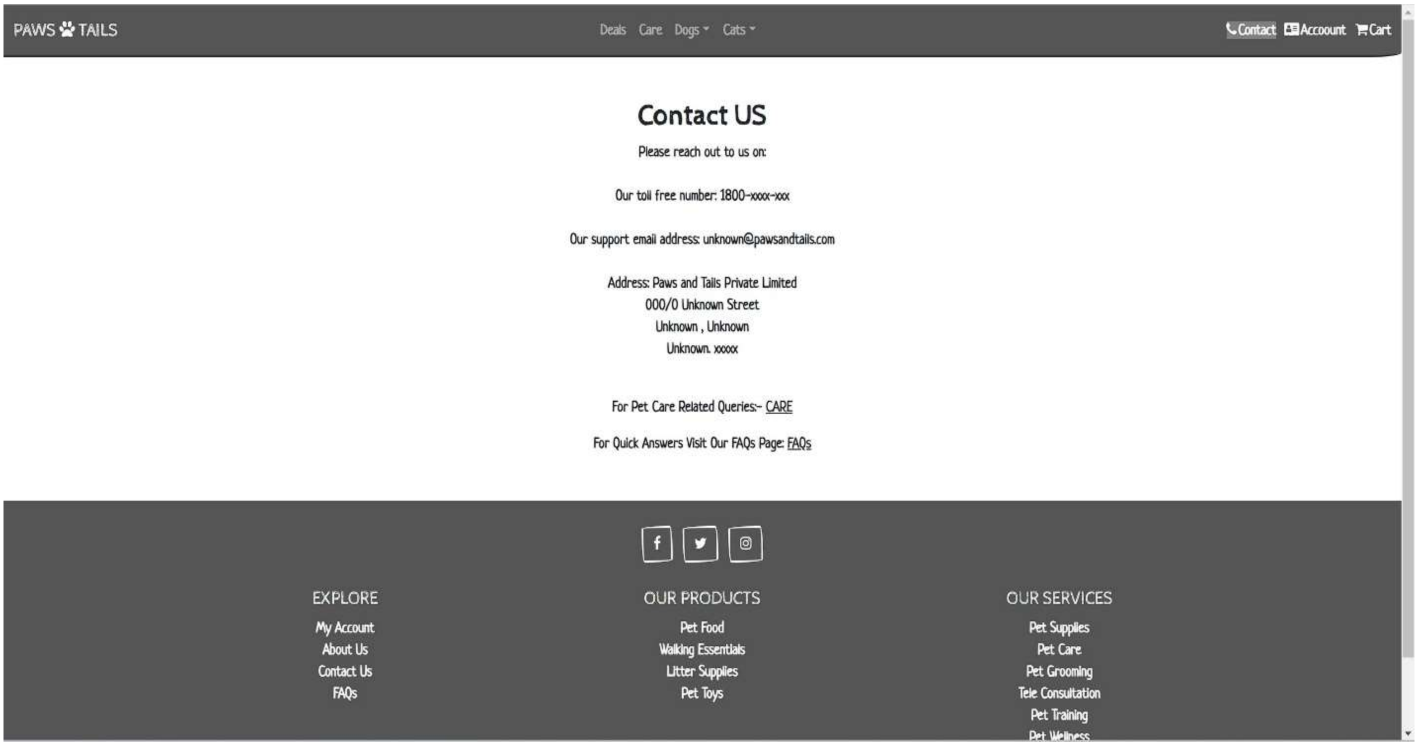
Allow your dog to take you for a walk every day. It's good for the body and it's good for the soul.

— Eckhart Tolle

No matter how you're feeling a little paw is always gonna love you!!

— Waka Flocka Flame

Contact info page:



Contact US

Please reach out to us on:

Our toll free number: 1800-xxxx-xxx

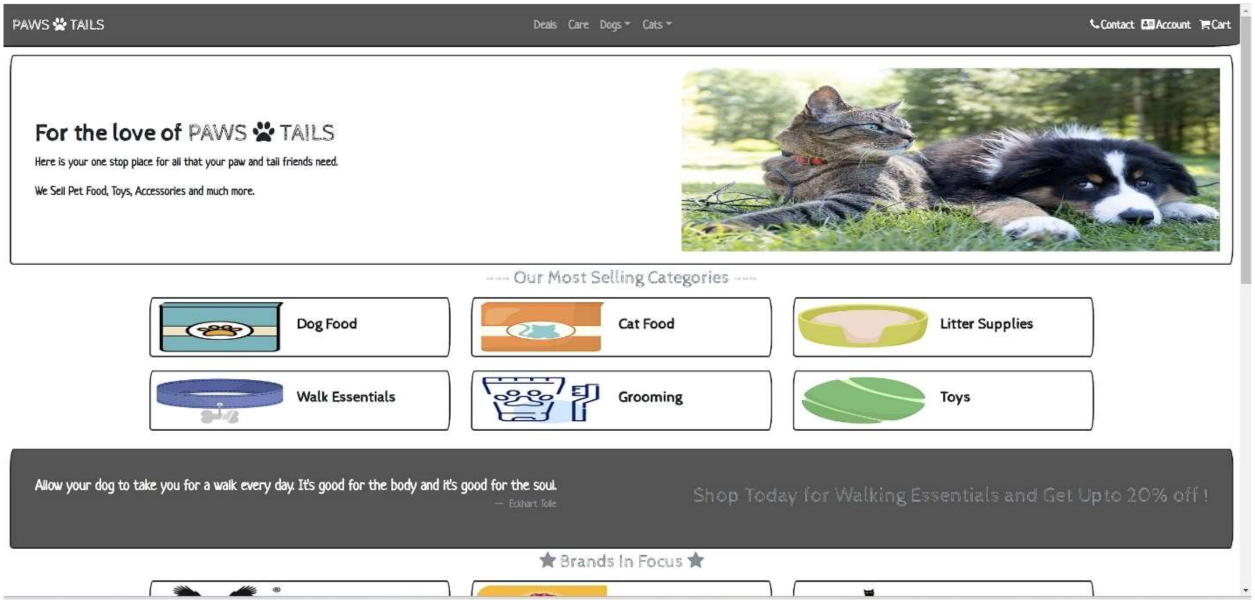
Our support email address: unknown@pawsandtails.com

Address: Paws and Tails Private Limited
000/0 Unknown Street
Unknown , Unknown
Unknown. xxxxx

For Pet Care Related Queries:- CARE

For Quick Answers Visit Our FAQs Page: FAQs

Landing page:



For the love of PAWS 🐾 TAILS

Here is your one stop place for all that your paw and tail friends need.

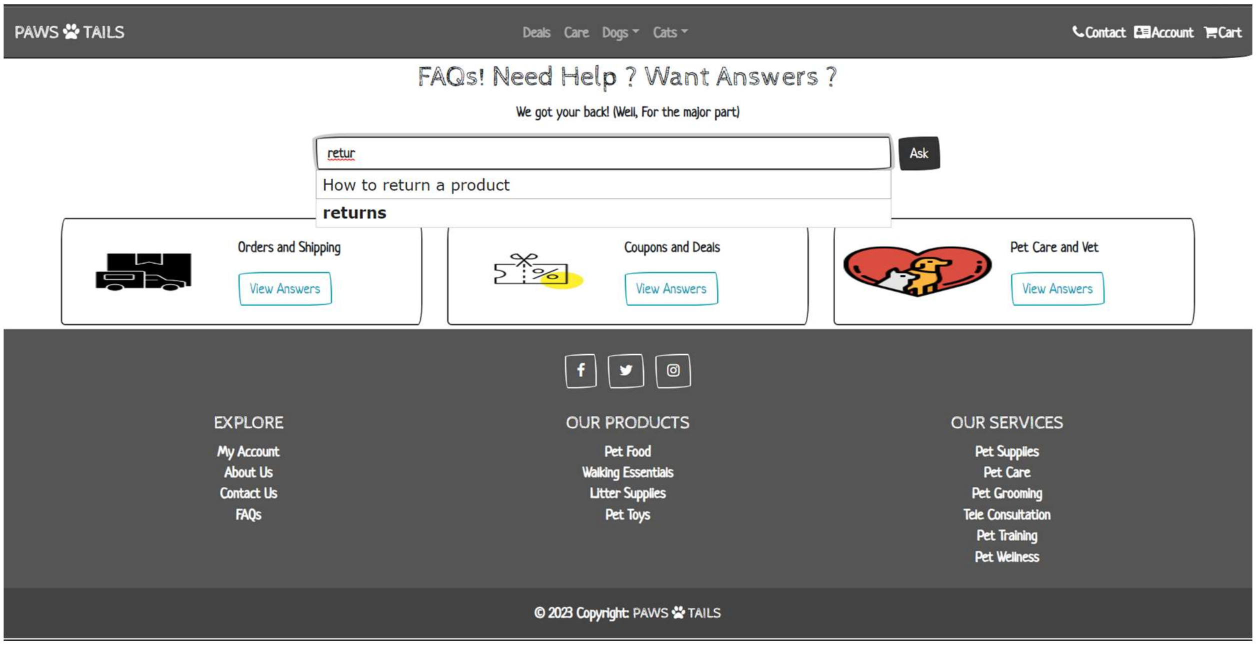
We Sell Pet Food, Toys, Accessories and much more.

Allow your dog to take you for a walk every day. It's good for the body and it's good for the soul.

— Eckhart Tolle

Shop Today for Walking Essentials and Get Upto 20% off !

FAQ Page



FAQs! Need Help ? Want Answers ?

We got your back! (Well, For the major part)

retur

How to return a product

returns

© 2023 Copyright: PAWS 🐾 TAILS

Use Cases:

1. **User login:** Implementation of user login use case has been performed using jquery. The main and the most important part of this use case is the json file names “data.json” which contains all the user data.
   Using this use case any registered user can login to the application using their credentials. By logging in they gain access to some exclusive offers and deals. Also one has to login before they can view their cart and checkout and place order. It also gives them access to book a tele consultation session.
   To implement this module, first the data is loaded from the Json file and then it is compared to the credentials entered by the user in the login form. Alerts are displayed for any incorrect credentials entered by the user. Upon entering the correct credentials and verification being performed, login success message is displayed onto the screen.

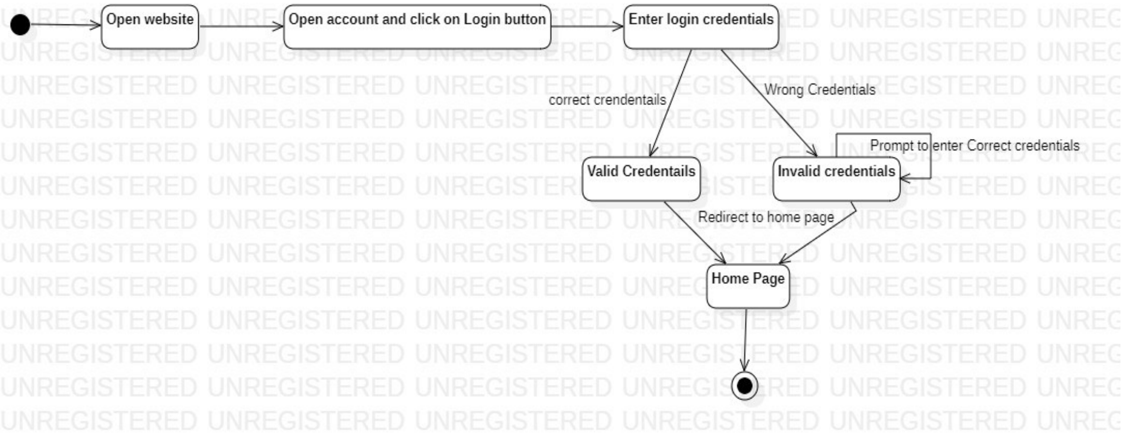
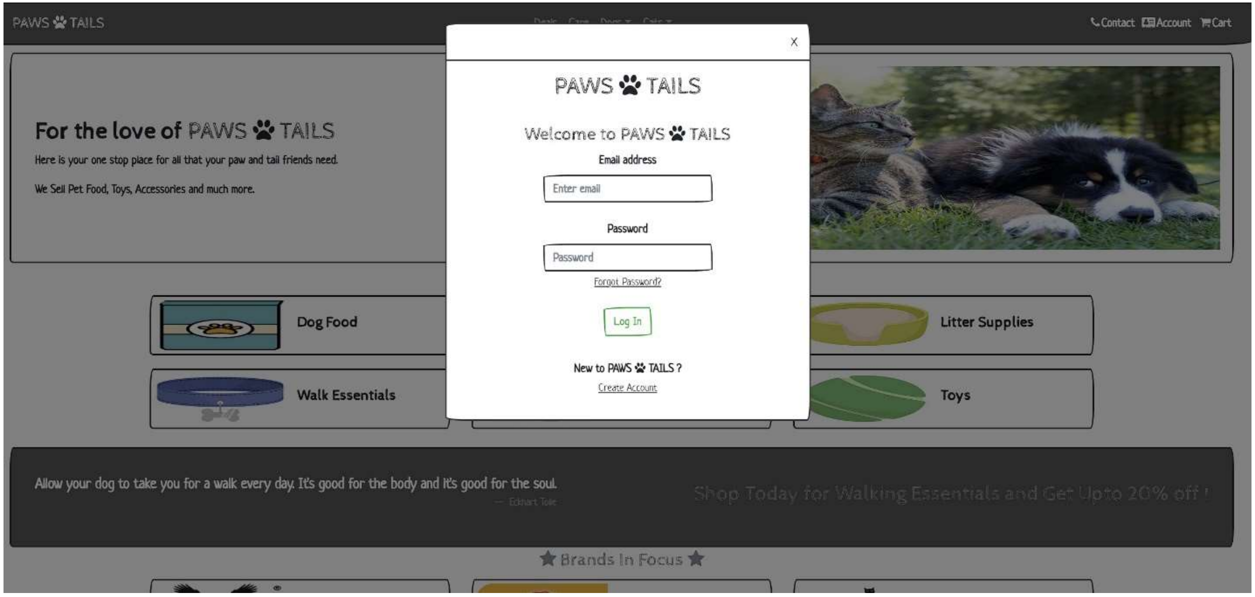


Fig : User login state diagram



For the love of PAWS TAILS

Here is your one stop place for all that your paw and tail friends need.

We Sell Pet Food, Toys, Accessories and much more.

Welcome to PAWS TAILS

Email address: Enter email

Password: Password

Forgot Password?

Log In

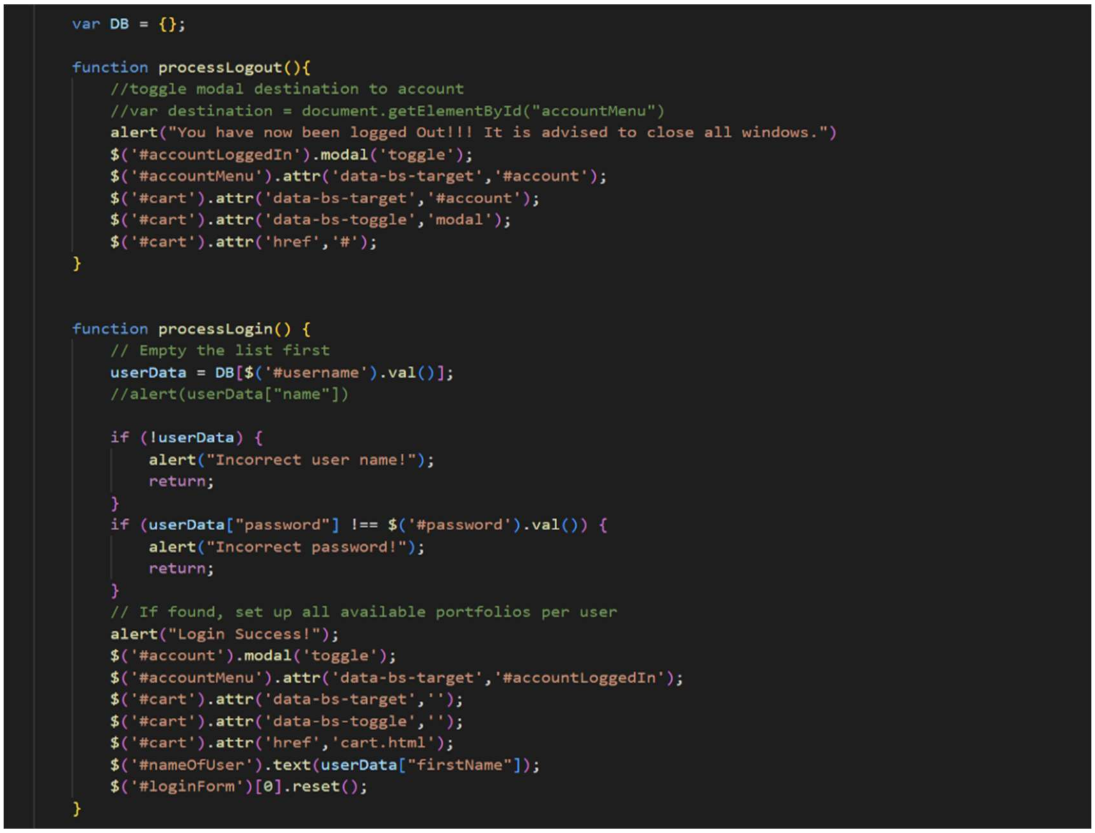
New to PAWS TAILS ?

Create Account

Allow your dog to take you for a walk every day. It's good for the body and it's good for the soul.
— Eckhart Tolle

Shop Today for Walking Essentials and Get Upto 20% off !

Fig: Login Page



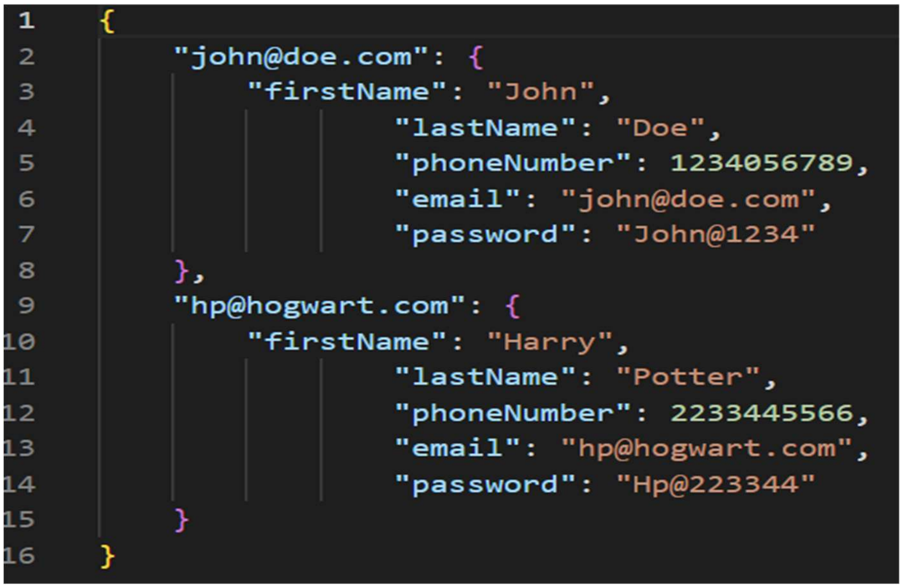
```
var DB = {};

function processLogout(){
    //toggle modal destination to account
    //var destination = document.getElementById("accountMenu")
    alert("You have now been logged Out!!! It is advised to close all windows.")
    $('#accountLoggedIn').modal('toggle');
    $('#accountMenu').attr('data-bs-target','#account');
    $('#cart').attr('data-bs-target','#account');
    $('#cart').attr('data-bs-toggle','modal');
    $('#cart').attr('href','#');
}


function processLogin() {
    // Empty the list first
    userData = DB[$('#username').val()];
    //alert(userData["name"])

    if (!userData) {
        alert("Incorrect user name!");
        return;
    }
    if (userData["password"] !== $('#password').val()) {
        alert("Incorrect password!");
        return;
    }
    // If found, set up all available portfolios per user
    alert("Login Success!");
    $('#account').modal('toggle');
    $('#accountMenu').attr('data-bs-target','#accountLoggedIn');
    $('#cart').attr('data-bs-target','');
    $('#cart').attr('data-bs-toggle','');
    $('#cart').attr('href','cart.html');
    $('#nameOfUser').text(userData["firstName"]);
    $('#loginForm')[0].reset();
}
```

Fig: Implementation of login validation using Javascript



```
{
    "john@doe.com": {
        "firstName": "John",
                "lastName": "Doe",
                "phoneNumber": 1234056789,
                "email": "john@doe.com",
                "password": "John@1234"
    },
    "hp@hogwart.com": {
        "firstName": "Harry",
                "lastName": "Potter",
                "phoneNumber": 2233445566,
                "email": "hp@hogwart.com",
                "password": "Hp@223344"
    }
}
```

Fig: Json data file for user login credentials

2. **User registration:** The user registration use case of this application has been implemented using HTML, CSS, Bootsrap, JavaScript and jQuery.
   Here in this use case any new user can register themselves onto the website by filling the user registration form. Upon successfully entering all the details one can consider themselves members or users of this application.
   This use case also has custom form validations. The actual aim of this use case was to generate a Json file which would store the details of all the users. But this was practically not possible to implement owing to browser and http security issues. Instead we have mocked this step and are displaying the user with successful registration message if the user has entered all the details in a correct fashion. We are actively working on this and are looking to fix this in the future.

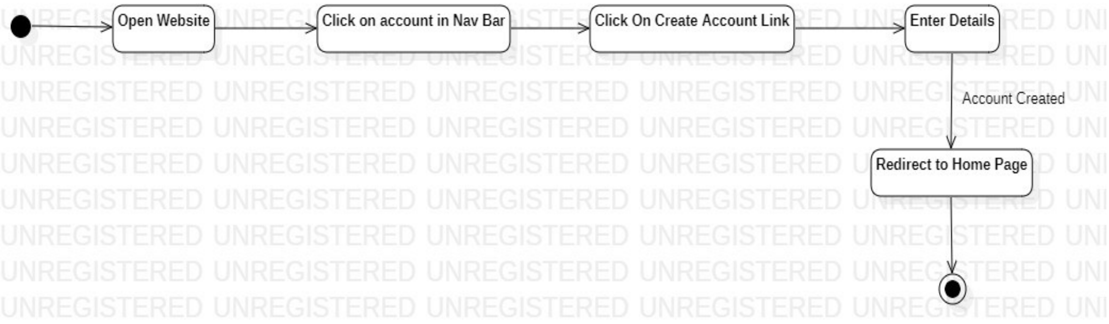
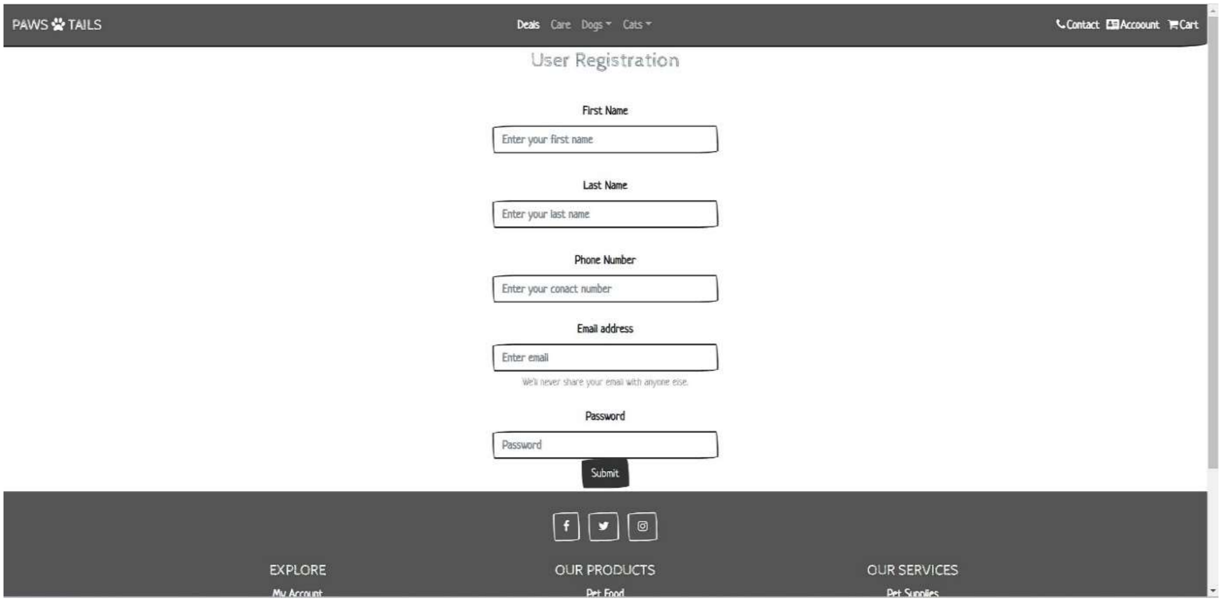


Fig: User registration state diagram



User Registration

First Name

Enter your first name

Last Name

Enter your last name

Phone Number

Enter your conact number

Email address

Enter email

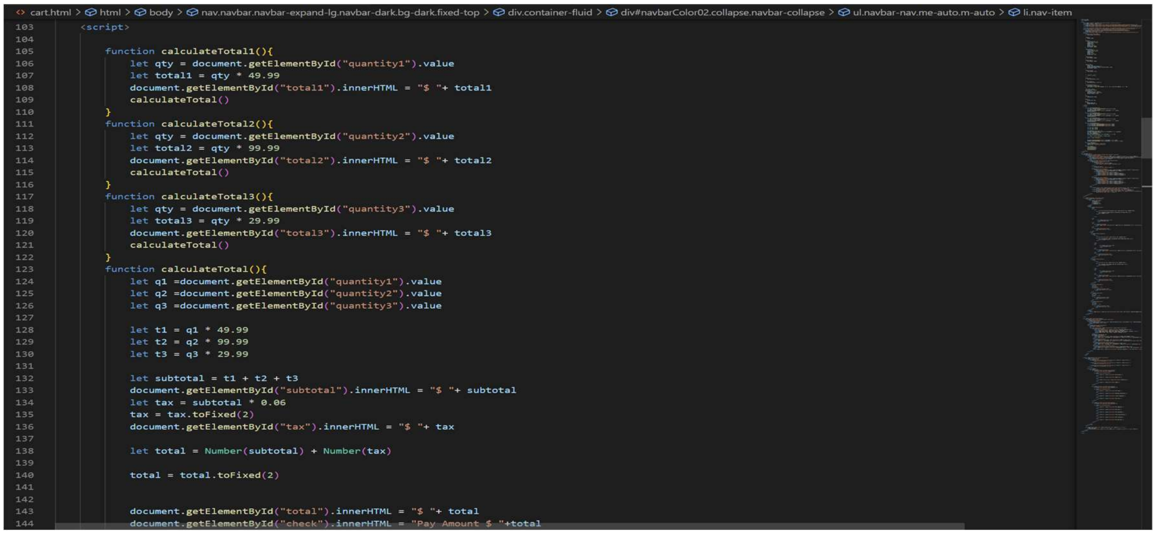
We'll never share your email with anyone else.

Password

Password

Fig: User Registration Page

3. **Shopping cart & checkout:** We have implemented the cart and checkout use case. We used JS to calculate the total by taking input from the quantity fields. First the values are taken from the page and the totals are computed and displayed on to the screen. The values are computed every time there is a change to the items in the cart.
   After finalizing the cart the user can checkout using the button present at the bottom. Signifiers like hovering effect have been provided to indicate the presence of the button on the screen. Also the gulfs of execution have been reduced to a vast extent and the user need no knowledge of anything to use this feature.
   Once the user clicks on the checkout button, the user is prompted through a modal to enter shipping information, also included in the same modal are payment details. Upon successful entering the details the system process the payment information in the backend(mocked this step) and displays a order placed message onto the screen.


cart.html > html > body > nav.navbar.navbar-expand-lg.navbar-dark.bg-dark.fixed-top > div.container-fluid > div#navbarColor02.collapse.navbar-collapse > ul.navbar-nav.me-auto.m-auto > li.nav-item

```
    <script>

        function calculateTotal1(){
            let qty = document.getElementById("quantity1").value
            let total1 = qty * 49.99
            document.getElementById("total1").innerHTML = "$ "+ total1
            calculateTotal()
        }
        function calculateTotal2(){
            let qty = document.getElementById("quantity2").value
            let total2 = qty * 99.99
            document.getElementById("total2").innerHTML = "$ "+ total2
            calculateTotal()
        }
        function calculateTotal3(){
            let qty = document.getElementById("quantity3").value
            let total3 = qty * 29.99
            document.getElementById("total3").innerHTML = "$ "+ total3
            calculateTotal()
        }
        function calculateTotal(){
            let q1 =document.getElementById("quantity1").value
            let q2 =document.getElementById("quantity2").value
            let q3 =document.getElementById("quantity3").value

            let t1 = q1 * 49.99
            let t2 = q2 * 99.99
            let t3 = q3 * 29.99

            let subtotal = t1 + t2 + t3
            document.getElementById("subtotal").innerHTML = "$ "+ subtotal
            let tax = subtotal * 0.06
            tax = tax.toFixed(2)
            document.getElementById("tax").innerHTML = "$ "+ tax

            let total = Number(subtotal) + Number(tax)

            total = total.toFixed(2)


            document.getElementById("total").innerHTML = "$ "+ total
            document.getElementById("check").innerHTML = "Pay Amount $ "+total
```

Fig: JavaScript functions to calculate the total amount of cart items

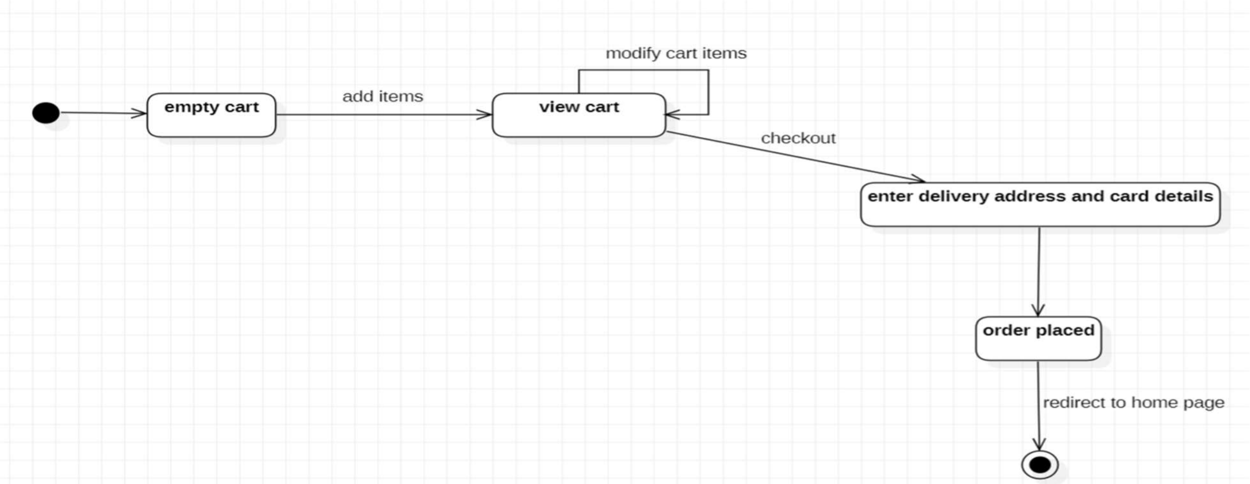
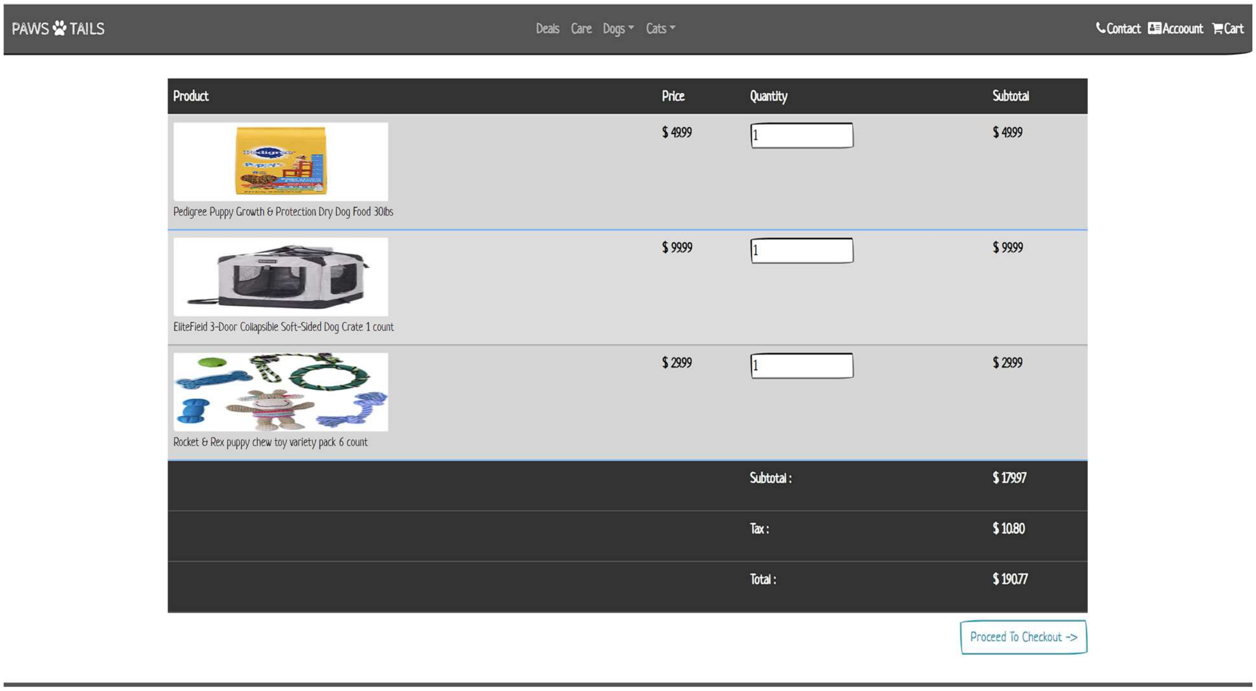
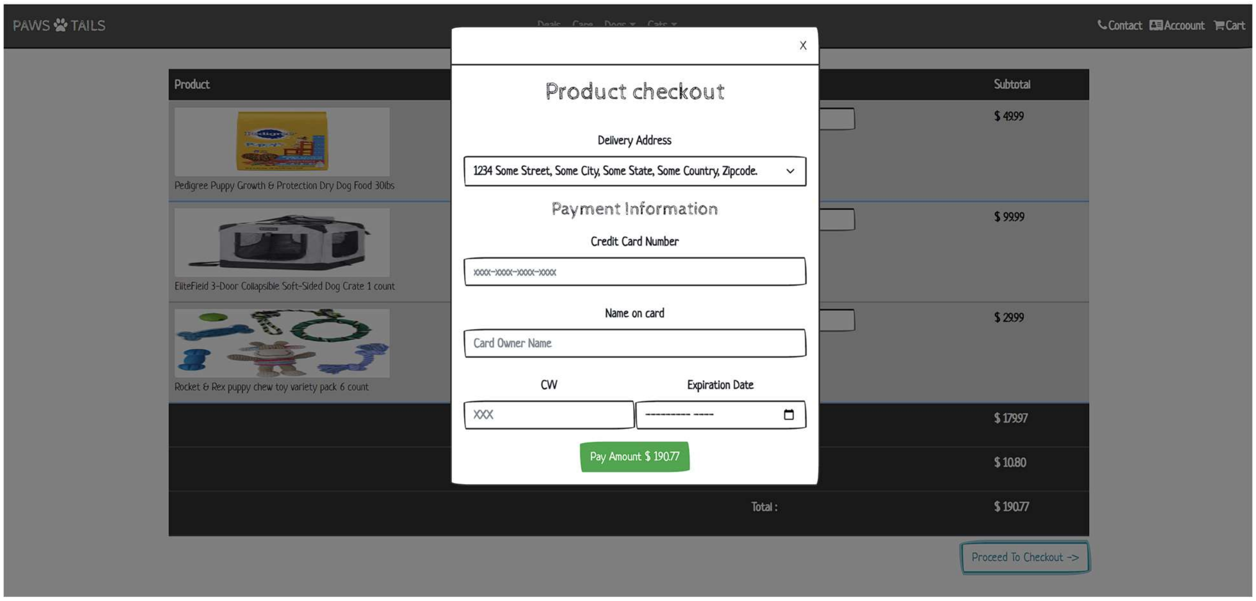


Fig: Shopping cart & checkout state diagram



Product	Price	Quantity	Subtotal
Pedigree Puppy Growth & Protection Dry Dog Food 30lbs	$ 49.99	1	$ 49.99
EliteField 3-Door Collapsible Soft-Sided Dog Crate 1 count	$ 99.99	1	$ 99.99
Rocket & Rex puppy chew toy variety pack 6 count	$ 29.99	1	$ 29.99
		Subtotal :	$ 179.97
		Tax :	$ 10.80
		Total :	$ 190.77

Fig: Shopping cart with mocked data



Product checkout

Delivery Address

1234 Some Street, Some City, Some State, Some Country, Zipcode.

Payment Information

Credit Card Number

xxxx-xxxx-xxxx-xxxx

Name on card

Card Owner Name

CVV

XXX

Expiration Date

---------- ----

Fig: Checkout page

4. **Pet Care :** This use case is also one of our main use cases. Here the users get access to the care package of the company. The users can book a teleconsultation session for their pets. It covers a wide range of health concerns. It also provides advice on pet training, nutrition and other wellbeing components.
   The user needs no extra knowledge, and the gulfs are also minimum in this use case. It is like the checkout feature. The user must give a brief summary on the issue or the agenda on which they seek advice and then select their available time slots and complete the payment portion. After successfully doing payment (mocked), the user will be receiving a email with all the details regarding the consultation. (mocked, as this is just a front-end project).

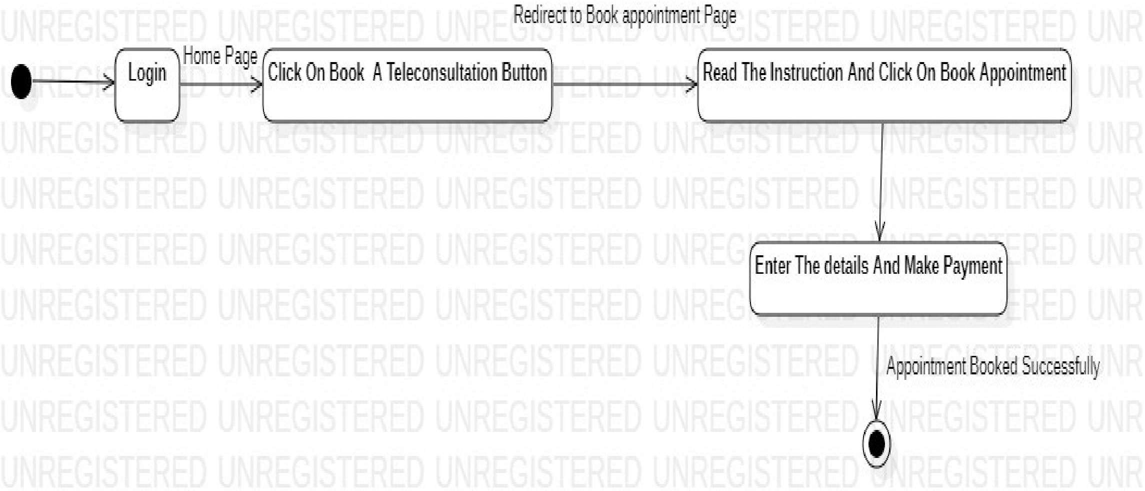
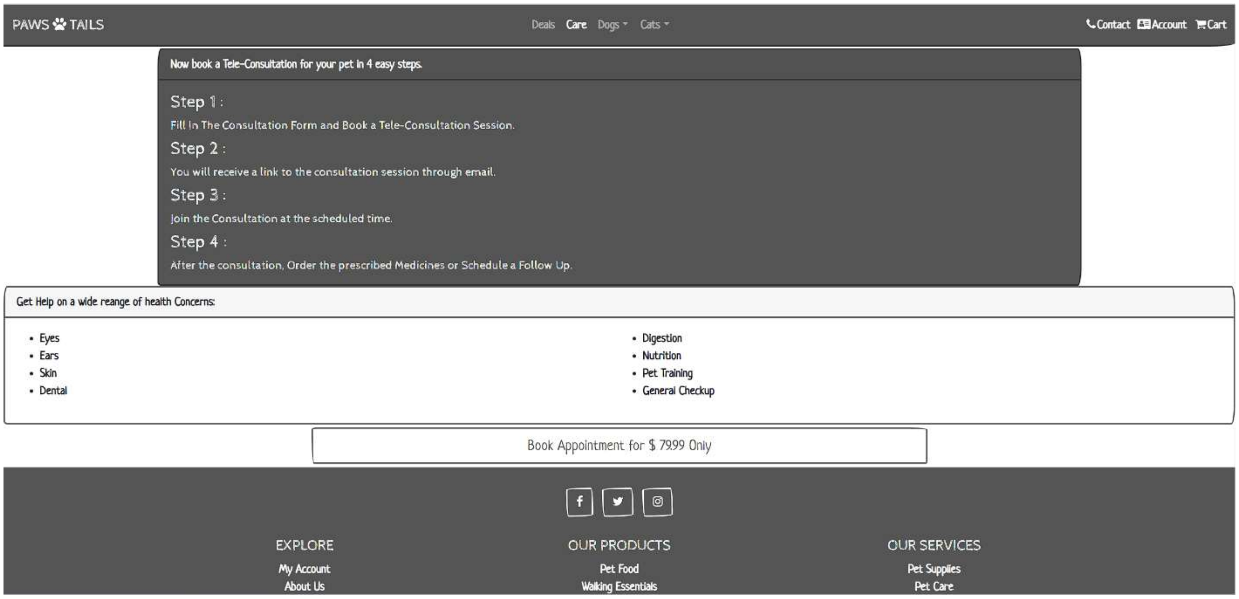

Redirect to Book appointment Page
Login
Home Page
Click On Book A Teleconsultation Button
Read The Instruction And Click On Book Appointment
Enter The details And Make Payment
Appointment Booked Successfully

Fig: Book a Tele – Consultation State Diagram



Now book a Tele-Consultation for your pet in 4 easy steps.

Step 1 :

Fill In The Consultation Form and Book a Tele-Consultation Session.

Step 2 :

You will receive a link to the consultation session through email.

Step 3 :

Join the Consultation at the scheduled time.

Step 4 :

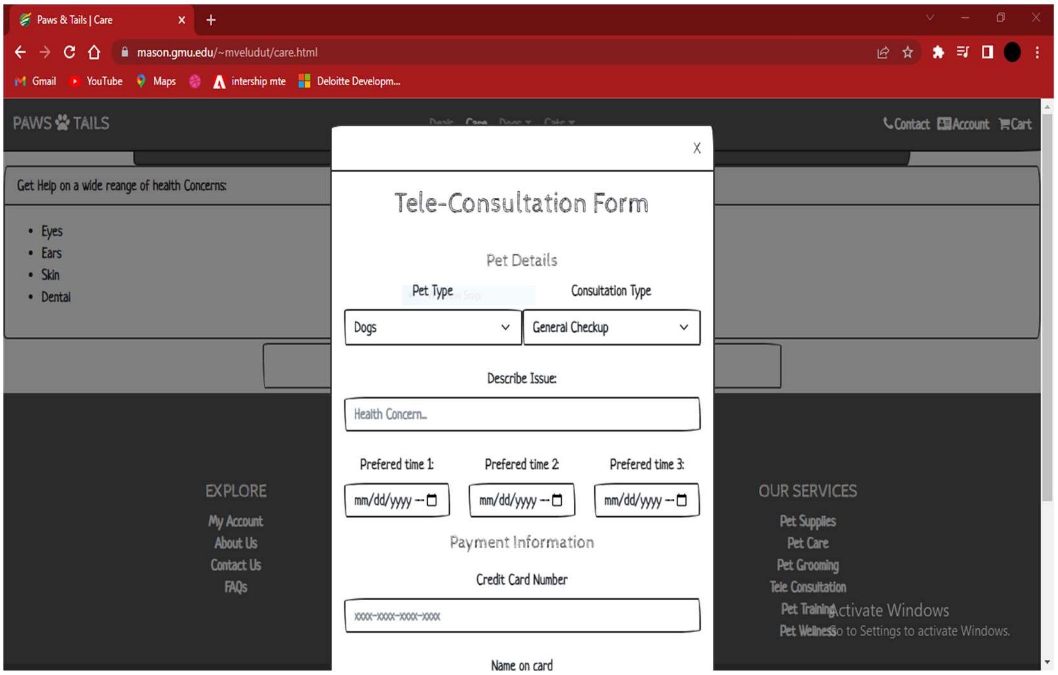
After the consultation, Order the prescribed Medicines or Schedule a Follow Up.

Get Help on a wide reange of health Concerns:

- Eyes
- Ears
- Skin
- Dental

- Digestion
- Nutrition
- Pet Training
- General Checkup

Fig: Book Appointment Page



Get Help on a wide reange of health Concerns:

- Eyes
- Ears
- Skin
- Dental

Tele-Consultation Form

Pet Details

Pet Type: Dogs

Consultation Type: General Checkup

Describe Issue: Health Concern...

Prefered time 1: mm/dd/yyyy --

Prefered time 2: mm/dd/yyyy --

Prefered time 3: mm/dd/yyyy --

Payment Information

Credit Card Number: xxxx-xxxx-xxxx-xxxx

Name on card

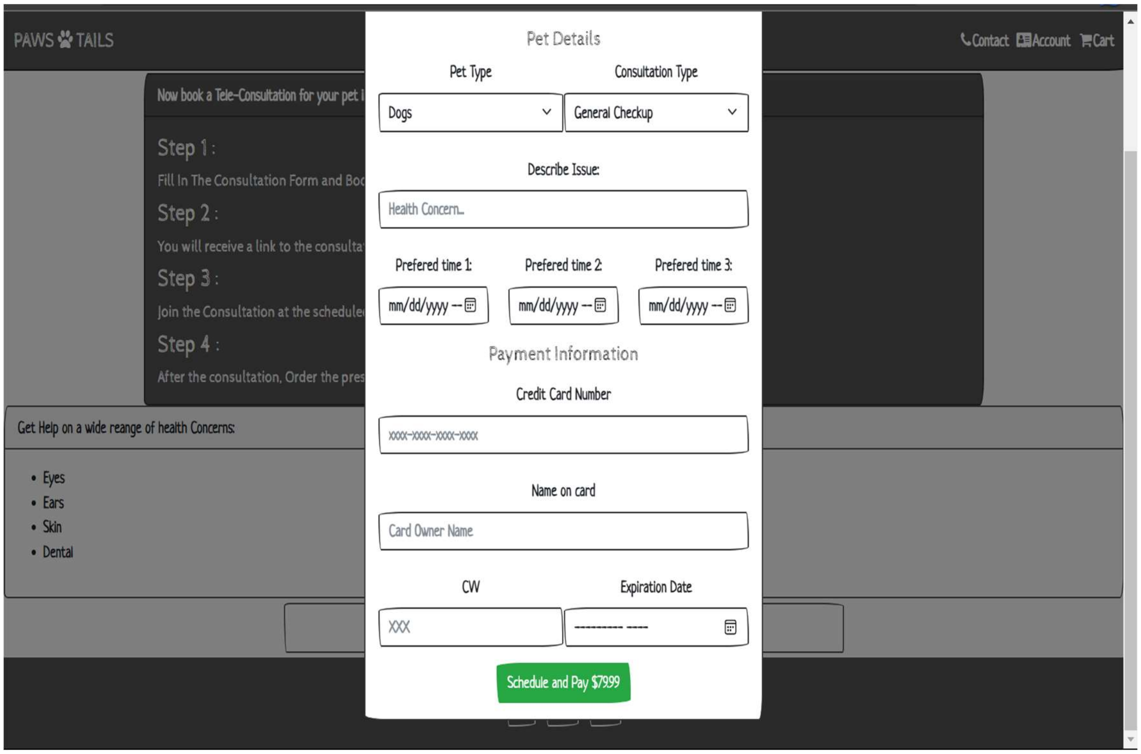
EXPLORE

My Account
About Us
Contact Us
FAQs

OUR SERVICES

Pet Supplies
Pet Care
Pet Grooming
Tele Consultation
Pet Training
Pet Wellness

Fig: Book Appointment Form Pop Up



Now book a Tele-Consultation for your pet i

Step 1 :

Fill In The Consultation Form and Boo

Step 2 :

You will receive a link to the consulta

Step 3 :

Join the Consultation at the schedule

Step 4 :

After the consultation, Order the pres

Get Help on a wide reange of health Concerns:

- Eyes
- Ears
- Skin
- Dental

Pet Details

Pet Type: Dogs

Consultation Type: General Checkup

Describe Issue: Health Concern...

Prefered time 1: mm/dd/yyyy --

Prefered time 2: mm/dd/yyyy --

Prefered time 3: mm/dd/yyyy --

Payment Information

Credit Card Number: xxxx-xxxx-xxxx-xxxx

Name on card: Card Owner Name

CVV: XXX

Expiration Date: --------- ----

Schedule and Pay $79.99

Fig : Appointment confirmation and Payment.

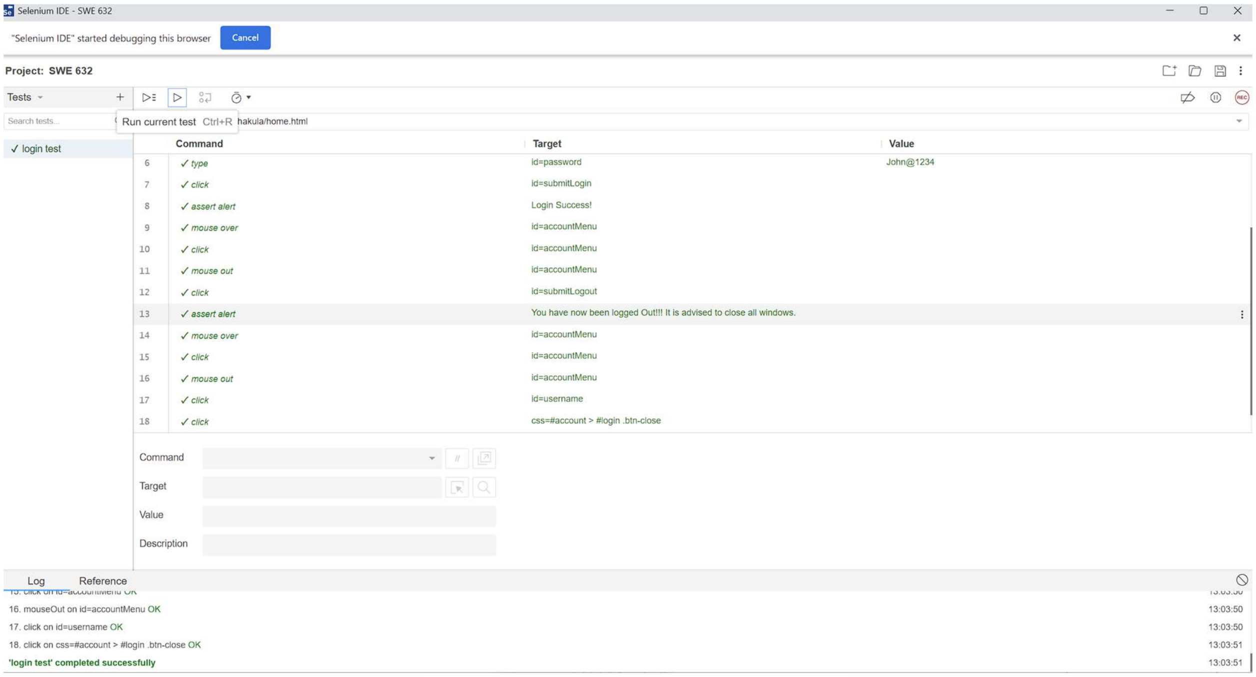
Testing outputs:

1. Selenium Testing:

For Selenium testing, we have tested 2 of our use cases. This includes recording the test using the selenium IDE and then running the test script to check if it performs as expected.

The selenium test script files are included in the project folder as “SWE 632.SIDE”

Use case 1 Login : We have recorded the information and screen flow form the home screen. The user tries to login using their credentials and upon successful login receives gains access to certain sections of the website. The entire interaction between the end user and the system is recorded and tested. Below is the screen shot of the run of the test script and its successful passing.



	Command	Target	Value
6	✓ type	id=password	John@1234
7	✓ click	id=submitLogin	
8	✓ assert alert	Login Success!	
9	✓ mouse over	id=accountMenu	
10	✓ click	id=accountMenu	
11	✓ mouse out	id=accountMenu	
12	✓ click	id=submitLogout	
13	✓ assert alert	You have now been logged Out!!! It is advised to close all windows.	
14	✓ mouse over	id=accountMenu	
15	✓ click	id=accountMenu	
16	✓ mouse out	id=accountMenu	
17	✓ click	id=username	
18	✓ click	css=#account > #login .btn-close	

Command

Target

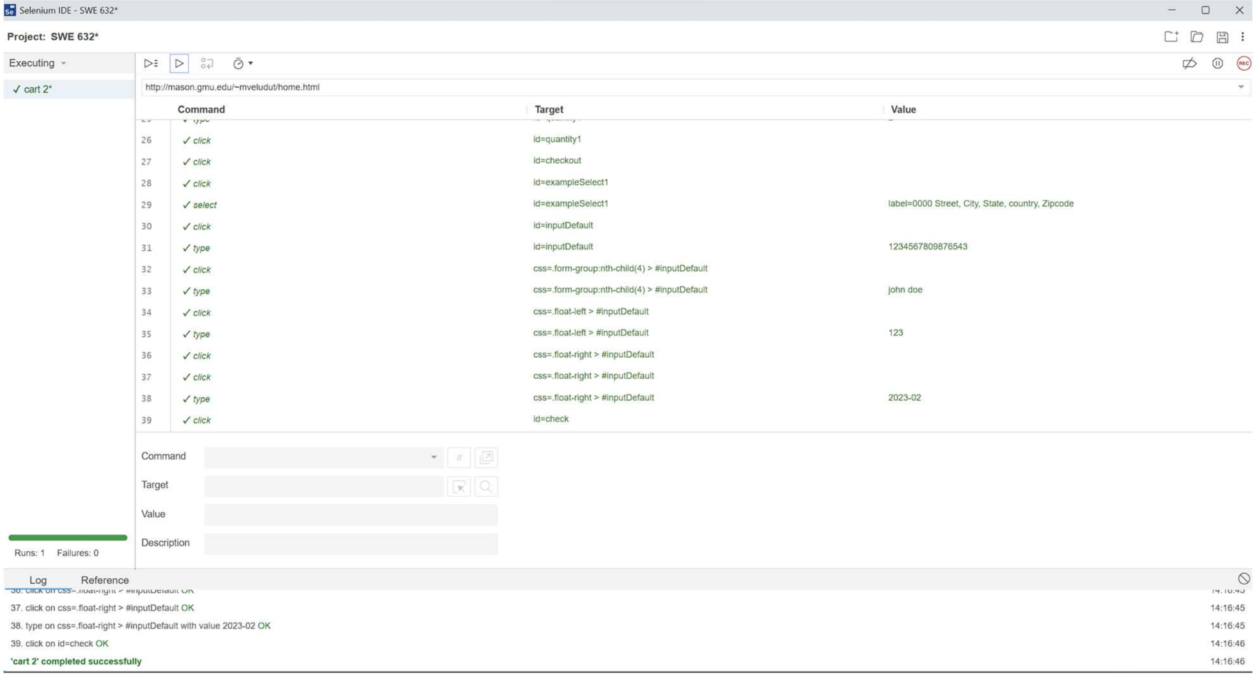
Value

Description

```
15. click on id=accountMenu OK                                        13:03:50
16. mouseOut on id=accountMenu OK                                     13:03:50
17. click on id=username OK                                           13:03:50
18. click on css=#account > #login .btn-close OK                      13:03:51
'login test' completed successfully                                   13:03:51
```

Fig: Testing output for the user login use case

Use case 2 Cart and Checkout : We have recorded the information and screen flow form the home screen. The user first has to login using their credentials and upon successful login receives gains access to the cart and then they can view the items in cart modify them and proceed to checkout. The entire interaction between the end user and the system is recorded and tested. Below is the screen shot of the run of the test script and its successful passing.



Selenium IDE - SWE 632*

Project: SWE 632*

Executing

✓ cart 2*

http://mason.gmu.edu/~mveludut/home.html

	Command	Target	Value
26	✓ click	id=quantity1	
27	✓ click	id=checkout	
28	✓ click	id=exampleSelect1	
29	✓ select	id=exampleSelect1	label=0000 Street, City, State, country, Zipcode
30	✓ click	id=inputDefault	
31	✓ type	id=inputDefault	1234567809876543
32	✓ click	css=.form-group:nth-child(4) > #inputDefault	
33	✓ type	css=.form-group:nth-child(4) > #inputDefault	john doe
34	✓ click	css=.float-left > #inputDefault	
35	✓ type	css=.float-left > #inputDefault	123
36	✓ click	css=.float-right > #inputDefault	
37	✓ click	css=.float-right > #inputDefault	
38	✓ type	css=.float-right > #inputDefault	2023-02
39	✓ click	id=check	

Command

Target

Value

Description

Runs: 1 Failures: 0

Log Reference

```
37. click on css=.float-right > #inputDefault OK                          14:16:45
38. type on css=.float-right > #inputDefault with value 2023-02 OK        14:16:45
39. click on id=check OK                                                  14:16:46
'cart 2' completed successfully                                           14:16:46
```

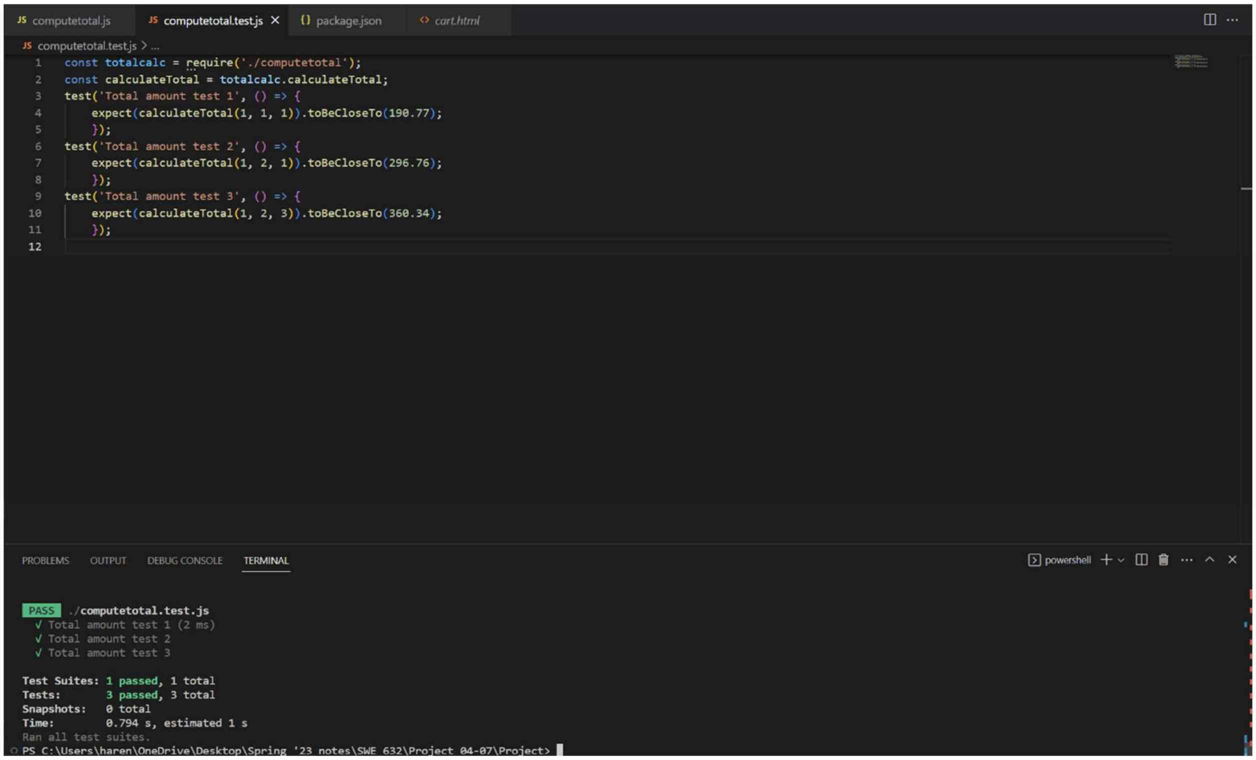
Fig: Testing output for shopping cart checkout

2. **Jest JavaScript Testing:**

   For jest testing, we have tested the cart and checkout use case of the project. We have checked if the totals, tax and subtotals are being computed properly and correctly onto the screen. We have tested this entire process by giving the function random quantities of items in the cart and checking if the correct total is generated.

   Below is the screenshot of the code used for testing and the corresponding result of the various test cases included. As we may see that all the test cases have passed successfully.

   Also included the file "compute.test.js" in the project folder which contains the code for this testing section.



```javascript
const totalcalc = require('./computetotal');
const calculateTotal = totalcalc.calculateTotal;
test('Total amount test 1', () => {
    expect(calculateTotal(1, 1, 1)).toBeCloseTo(190.77);
    });
test('Total amount test 2', () => {
    expect(calculateTotal(1, 2, 1)).toBeCloseTo(296.76);
    });
test('Total amount test 3', () => {
    expect(calculateTotal(1, 2, 3)).toBeCloseTo(360.34);
    });
```

```
PASS  ./computetotal.test.js
  √ Total amount test 1 (2 ms)
  √ Total amount test 2
  √ Total amount test 3

Test Suites: 1 passed, 1 total
Tests:       3 passed, 3 total
Snapshots:   0 total
Time:        0.794 s, estimated 1 s
Ran all test suites.
PS C:\Users\haren\OneDrive\Desktop\Spring '23 notes\SWE 632\Project 04-07\Project>
```

Fig: Jest test case output for the total amount of cart items

Team Members:

1. Haren Akula – G01387760.

2. Sagar Naidu Potana – G01355019.

3. Mahaveerasaiteja Veluduti – G01354854.