

# **PROJECT REPORT**

## **A Report By**

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**In fulfilment for the course**

**of**

**CSYE 7280 – USER EXPERIENCE DESIGN AND TESTING**



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## 1. Objective

The main objective of this website was redesigning **BlackFriday.com** by identifying the chinks and providing either improvements/Moonshots to overcome the same.

## 2. Introduction/Summary

After browsing through various websites and brainstorming through discussions, we eventually reached a common consensus to redesign a website than work on creating a new tool. The website chosen to redesign was BlackFriday.com since we captured few drawbacks with the website.

BlackFriday.com includes

- Web page
- Mobile application for Android and iOS

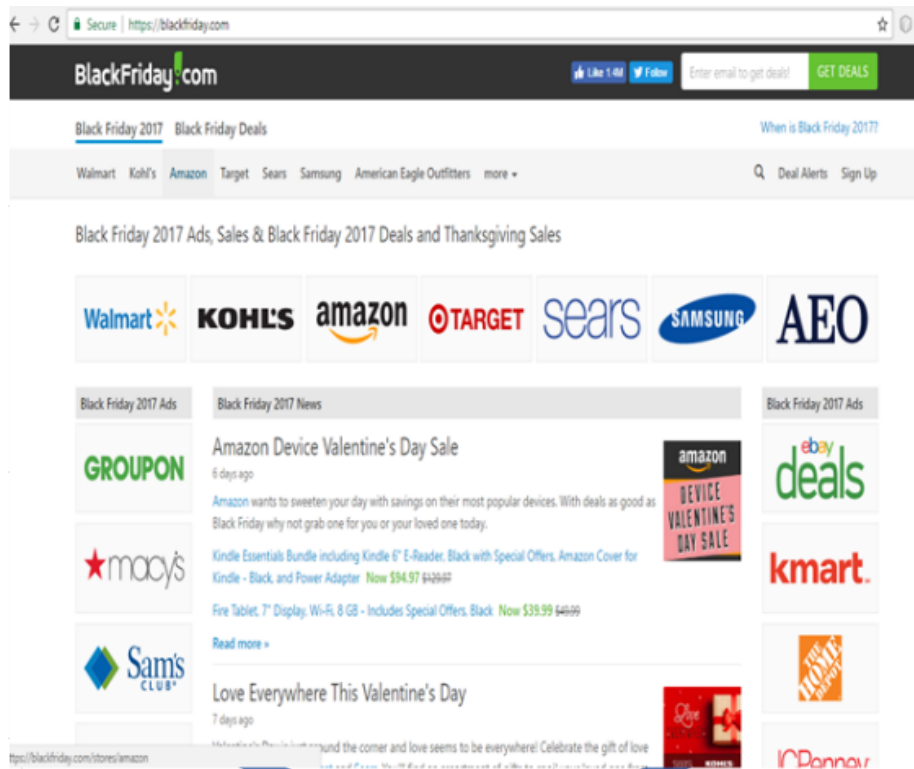
BlackFriday.com is an American worldwide e-commerce marketplace connecting millions of subscribers with local merchants by offering activities, travel, goods and services. Its market competitors include Groupon and DealsofAmerica.com.

Thee prime focus of this website is offering discounts and promotional deals on goods and services during Black Friday.

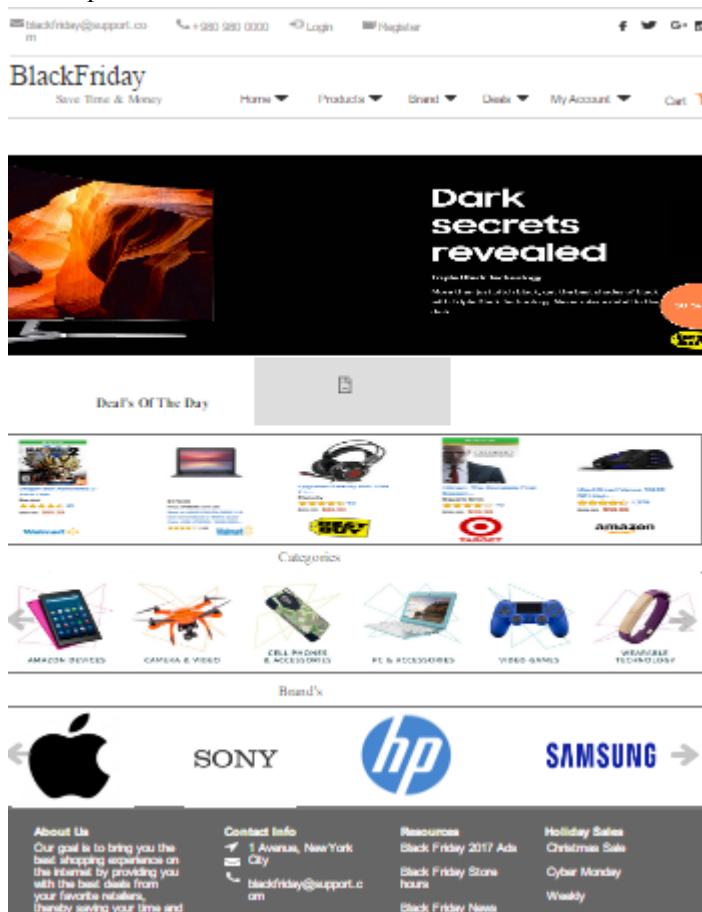
## 3. Roles and responsibilities

- **Overcoming the drawbacks like:**
  1. Decongest the cover page of the website and make it look more user friendly.
  2. Make the website is 100% responsive
  3. Keyboard accessibility of the site needs improvement. The website does not follow web content accessibility guidelines. (All components do not highlight when in focus)
  4. Search can only be done using company names (eg. Verizon). No results are displayed if you search products (eg. vessels).
  5. User should be able to filter items based on customer rating, percentage of discount offered, shipping options
  6. User can select a product and compare price on different website.
- **Creating wireframes of the enhanced designs.**
- **Innovating moonshots to enhance the website.**

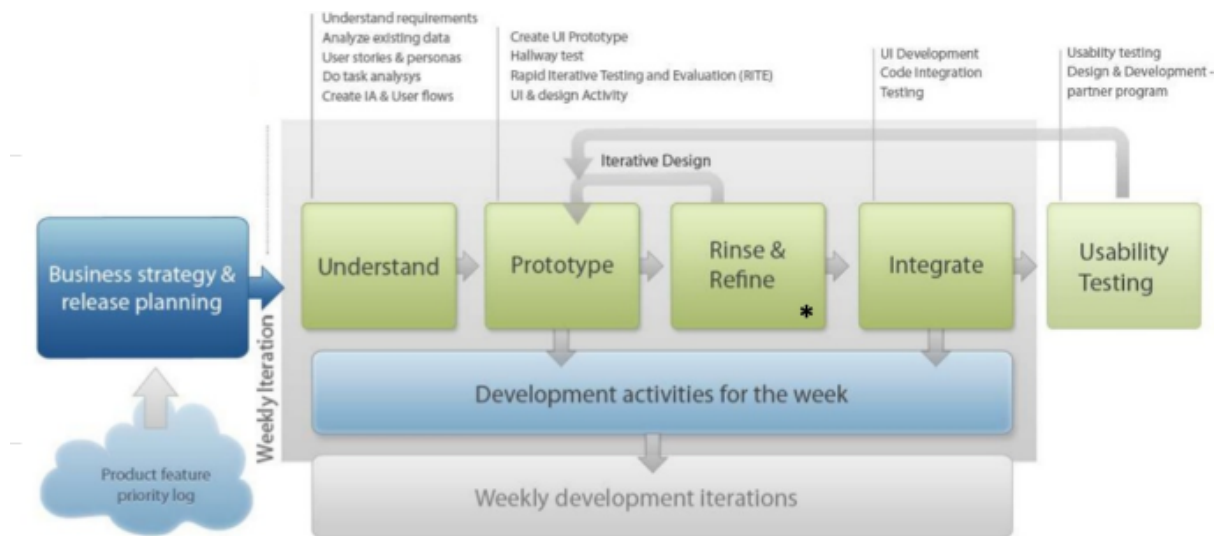
## 4. BlackFriday - Live Website



### Revamped website



## 5. Agile Software Development Life Cycle Model - UX Overlap



## 6. Strategy Plane

### a. User needs

- User Segmentation
- Usability
- User Research
- Conducted Surveys
- Creating Persona

### b. Surveys

BlackFriday Shopping Survey!

**BlackFriday.com**

#### 1. Overall, how well does our website meet your needs?

- ☐ Extremely well
- ☐ Very well
- ☐ Somewhat well
- ☐ Not so well
- ☐ Not at all well



2. How easy was it to find what you were looking for on our website?

- ☐ Extremely easy
- ☐ Very easy
- ☐ Somewhat easy
- ☐ Not so easy
- ☐ Not at all easy

3. Did it take you more or less time than you expected to find what you were looking for on our website?

- ☐ A lot less time
- ☐ A little less time
- ☐ About what I expected
- ☐ A little more time
- ☐ A lot more time

4. How visually appealing is our website?

- ☐ Extremely appealing
- ☐ Very appealing
- ☐ Somewhat appealing
- ☐ Not so appealing
- ☐ Not at all appealing

5. How easy is it to understand the information on our website?

- ☐ Extremely easy
- ☐ Very easy
- ☐ Somewhat easy
- ☐ Not so easy
- ☐ Not at all easy

## 6. How much do you trust the information on our website?

- ☐ A great deal
- ☐ A lot
- ☐ A moderate amount
- ☐ A little
- ☐ Not at all

## 7. How likely is it that you would recommend our website to a friend or colleague?

Not at all likely

Extremely likely

0	1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	---	----

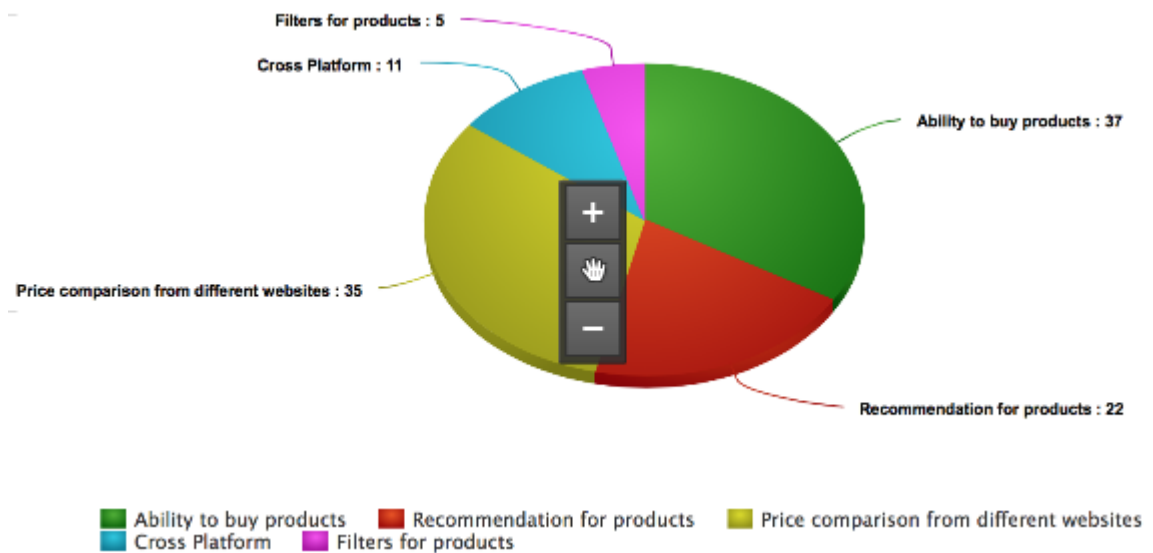
## 8. Do you have any other comments about how we can improve our website?

### c. Product Objectives

- Business Goals
- Brand identity
- Success Metrics

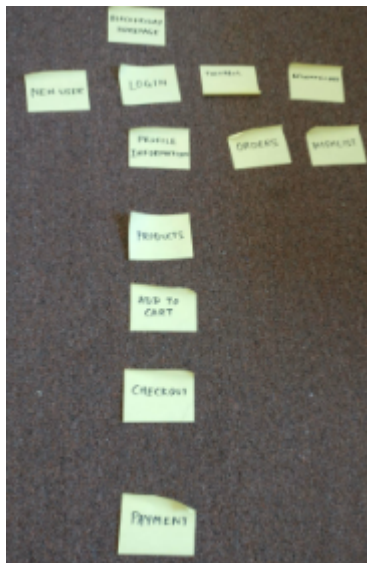
## 7. Scope Plane

### a. Flow charts



- Prioritize requirements
- Content requirements
- Functional specifications

### b. Card Sorting



### c. Persona Creation



#### Nikita

"I am looking forward to buying a new phone as I am unable to receive calls or send text messages on my old phone."

Nikita wishes to buy a new phone.

**Age:** 23

**Occupation:** Masters student,  
Intern at Isobar

**Frequently browsed websites:**

- Netflix
- Youtube
- Amazon

**Technical Profile:** HP Laptop,  
Windows OS

**Internet Use:** 50 – 70 hours/ week  
online



#### Lisa

"I am actively looking forward to new deals online on electronic devices."

**Age:** 45

**Occupation:** Director of Quality  
Assurance at Isobar

**Frequently browsed websites:**

- Google
- Yahoo News
- Ebay

**Technical Profile:** Apple MacBook,  
Mac OS

**Internet Use:** 40 - 50 hours/ week  
online





## Jen

"I am looking to buy a new mobile phone and I browsed many websites but I am unable to recall the website"

**Age:** 25

**Occupation:** Student

**Frequently used websites:**

Google  
Facebook  
Amazon

**Technical Profile:**

Android mobile

**Internet Use:**

30-40 hours per week



## Mark

"James is a technology enthusiast and has great knowledge about new applications. He is very social and always shares knowledge about new technologies with his friends"

**Age:** 30

**Occupation:** Software Engineer at Infosys

**Frequently used websites:**

Facebook  
Amazon

**Technical Profile:**

Apple MacBook, Mac OS

**Internet Use:**

30-40 hours per week



SHAILESH,

"Hi my name is Shailesh Hegde and i am a software engineer by profession"

Shailesh is helping Rose buy a product on BlackFriday website.

Age: 27

Occupation:Software Engineer.





ROSE,

"Hi my name is Rose Linda and i want to buy a product the BlackFriday website.

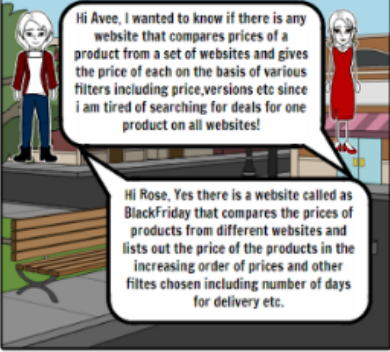


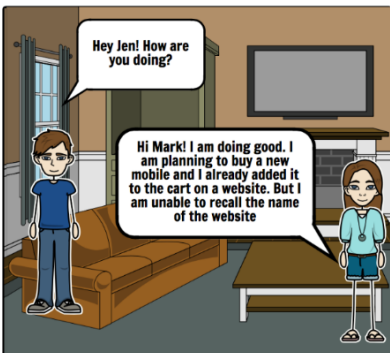
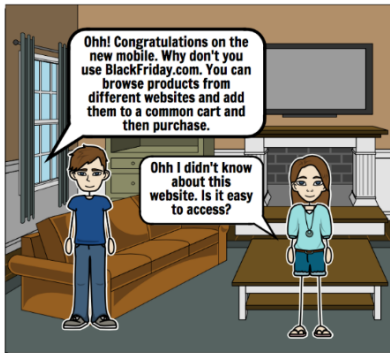
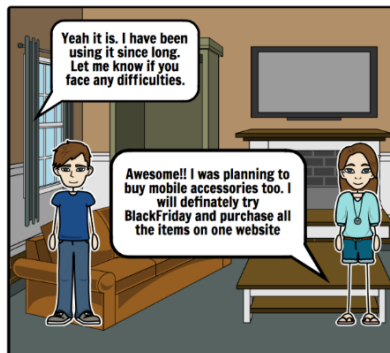
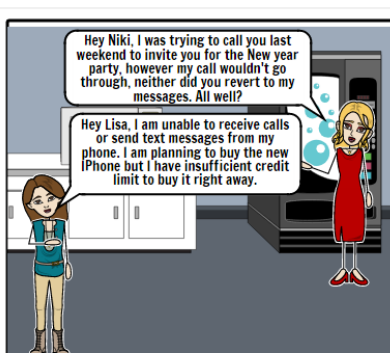
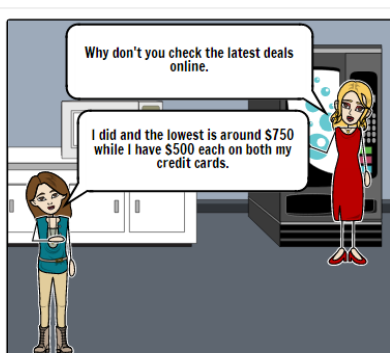
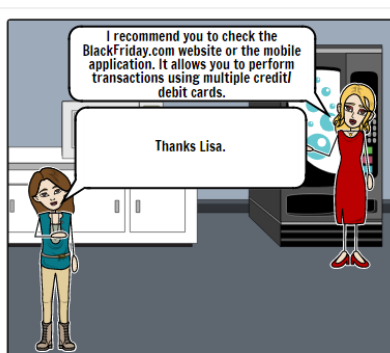
Age: 27

Occupation:School Teacher.



 <p>Name: Aves "I am software engineer by profession and i would be imparting all the necessary knowledge about the BlackFriday website and its importance" Age:28 Profession:Software Engineer</p>	 <p>Name:Rose Hopkins "I am a school teacher by profession" I wish to buy a new phone on BlackFriday today. Age:45 Profession:School Teacher</p>
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## 8. Story Boarding

 <p>Hi Aves, I wanted to know if there is any website that compares prices of a product from a set of websites and gives the price of each on the basis of various filters including price,versions etc since i am tired of searching for deals for one product on all websites!</p> <p>Hi Rose, Yes there is a website called as BlackFriday that compares the prices of products from different websites and lists out the price of the products in the increasing order of prices and other flites chosen including number of days for delivery etc.</p>	 <p>Can you give me a brief description of how this is achieved?</p> <p>Hi Rose, I would be really glad to help you out here, from the home page you can navigate to the product on the basis of recommendations,company or product allowing you to choose an option of filtering, going to the lowest granularity.</p>	 <p>Thank you so much for your help Aves!, that was of great help!</p> <p>You are welcome Rose!. let me know if i can help you with anything else.</p>
 <p>Hey Jen! How are you doing?</p> <p>Hi Mark! I am doing good. I am planning to buy a new mobile and i already added it to the cart on a website. But i am unable to recall the name of the website</p>	 <p>Ohh! Congratulations on the new mobile. Why don't you use BlackFriday.com. You can browse products from different websites and add them to a common cart and then purchase.</p> <p>Ohh I didn't know about this website. Is it easy to access?</p>	 <p>Yeah it is. I have been using it since long. Let me know if you face any difficulties.</p> <p>Awesome!! I was planning to buy mobile accessories too. I will definately try BlackFriday and purchase all the items on one website</p>
 <p>Hey Niki, I was trying to call you last weekend to invite you for the New year party, however my call wouldn't go through, neither did you revert to my messages. All well?</p> <p>Hey Lisa, I am unable to receive calls or send text messages from my phone. I am planning to buy the new iPhone but i have insufficient credit limit to buy it right away.</p>	 <p>Why don't you check the latest deals online.</p> <p>I did and the lowest is around \$750 while i have \$500 each on both my credit cards.</p>	 <p>I recommend you to check the BlackFriday.com website or the mobile application. It allows you to perform transactions using multiple credit/ debit cards.</p> <p>Thanks Lisa.</p>

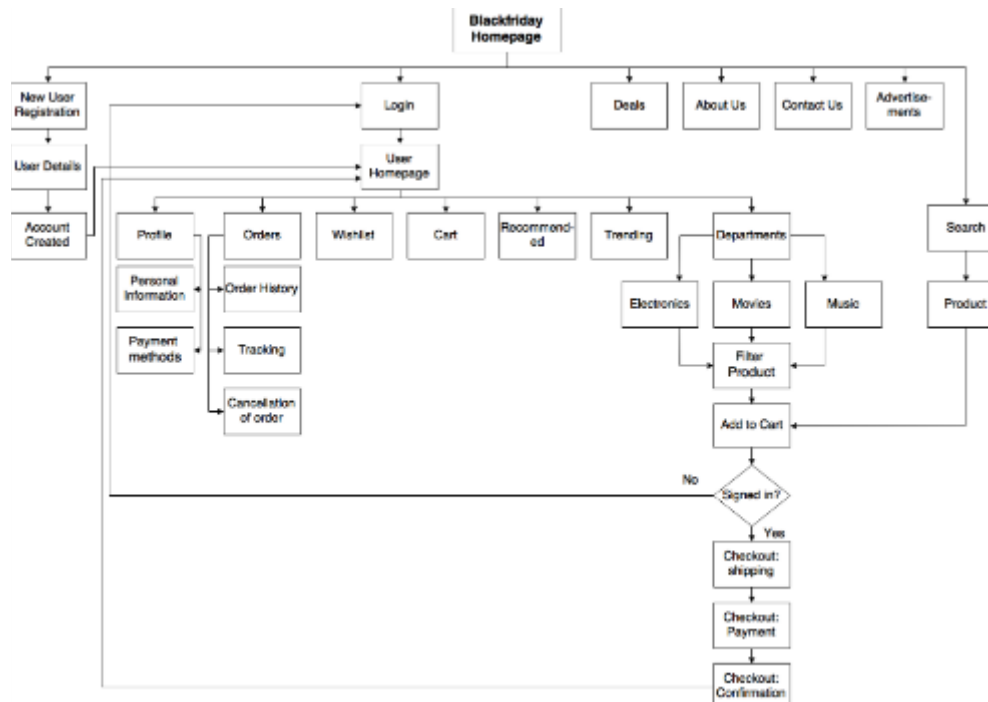


- Prioritize requirements
  - Card Sorting
- Content requirements
  - Estimate feature size
  - Update frequency
  - Content load assigning
- Functional specifications
  - Be positive
  - Be specific
  - Avoid subjective language

## 9. Structure Plane

### a. Information Architecture

- Hierarchical structure
- Top down approach



## b. Interaction Design

- Conceptual Model
- Error handling
  - PREVENTION
    - Eg. text boxes - validation
  - CORRECTION
    - Eg. Product Search
  - RECOVERY
    - Eg. Transaction

## 10. Skeleton Plane

### a. Interface Design

- Selecting the right interface for a specific functionality
- Interface Elements - buttons, text fields, checkboxes, radio buttons, dropdown lists

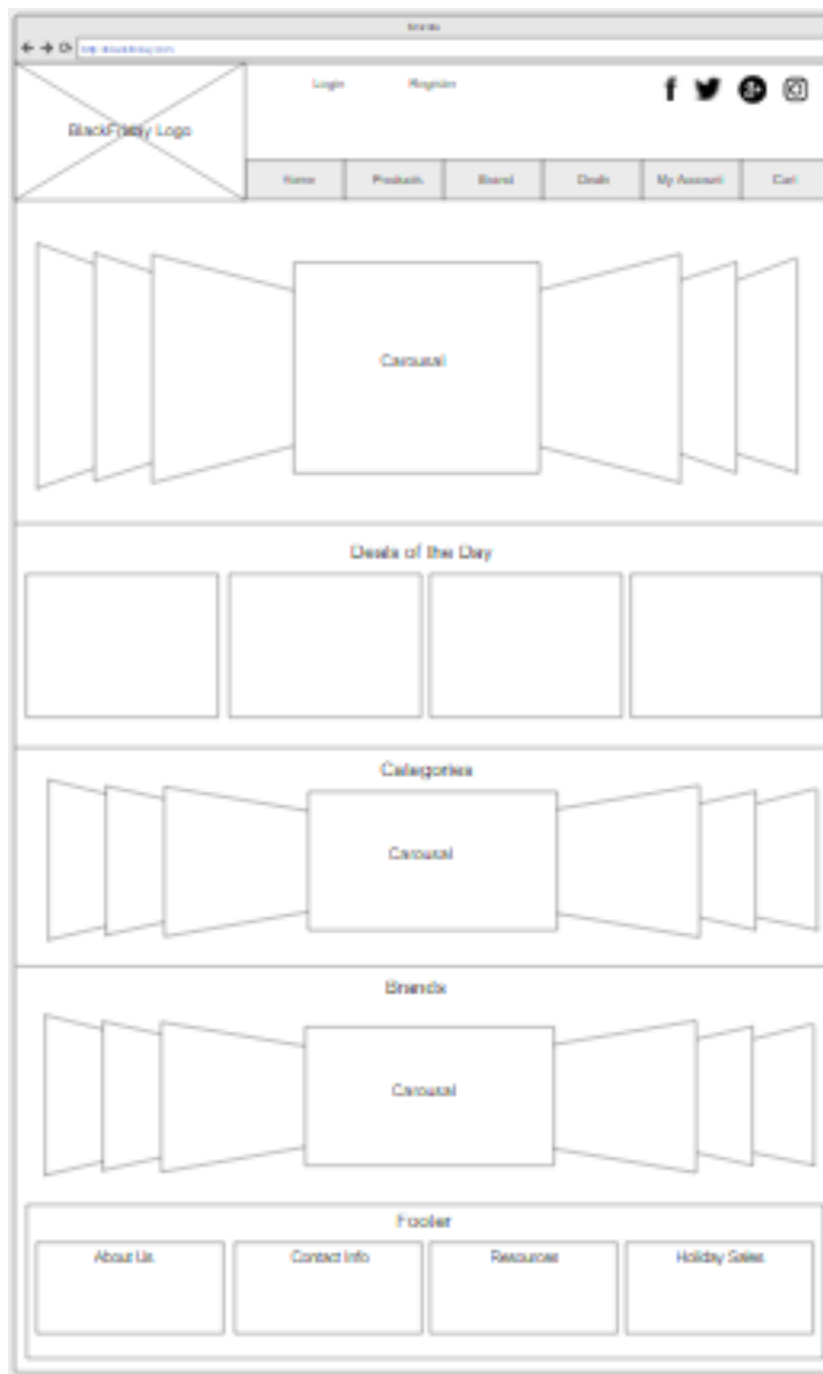
### b. Navigation Design

- Global Navigation
- Local Navigation
- Supplementary Navigation
- Contextual Navigation
- Courtesy Navigation
- Remote Navigation

### c. Information Design

- - Making decisions about how to present information so that people can understand it easily

## d. Wireframe











## 11.Surface Plane

- Making sense of senses
- Follow the eye
- Contrast and Uniformity
- Internal and External Consistency
- Color Palettes and Typography
- Style guides

## 12.User Experience Research Methods

### a. A/B Testing

- Studied Website Data of 2 different designs of same webpage
- Observed User Behavior
- Constructed a Hypothesis
- Tested your Hypothesis
- Analyzed Test Data and Drew Conclusions

 blackfriday@support.co  
m
  +980 980 0000
  Login
  Register
 




# BlackFriday





Save Time & Money


[Home](#)
[Products](#)
[Brand](#)
[Deals](#)
[My Account](#)
[Cart](#)

Checkout (2 items)

## 1 Choose a shipping address

**Your addresses**

 <b>Aves Arora</b>	1 Ward Street, Boston, MA 02120	<a href="#">Edit</a>
 <b>Gauri Chavan</b>	2 Ward Street, Boston, MA 02120	<a href="#">Edit</a>
 <b>Nikita Saple</b>	3 Ward Street, Boston, MA 02120	<a href="#">Edit</a>
 <b>Shallech Hegde</b>	4 Ward Street, Boston, MA 02120	<a href="#">Edit</a>

 [Add a new address](#)

[Use this address](#)

[Use this address](#)

Choose an address to continue checking out. You'll still have a chance to review and edit your order before it's final.


**Order Summary**



Items:	\$750.00
Shipping & handling:	—
Total before tax:	—
Estimated tax to be collected:	—

[How are shipping costs calculated?](#)

## 2 Add a payment method


**Your credit and debit cards**

 <b>Visa</b> ending in 9999	Name on card Nikita Saple	<a href="#">Edit</a>
--	------------------------------	----------------------

  [Add a credit card or debit card](#)

[Use this payment method](#)

## 3 Order details

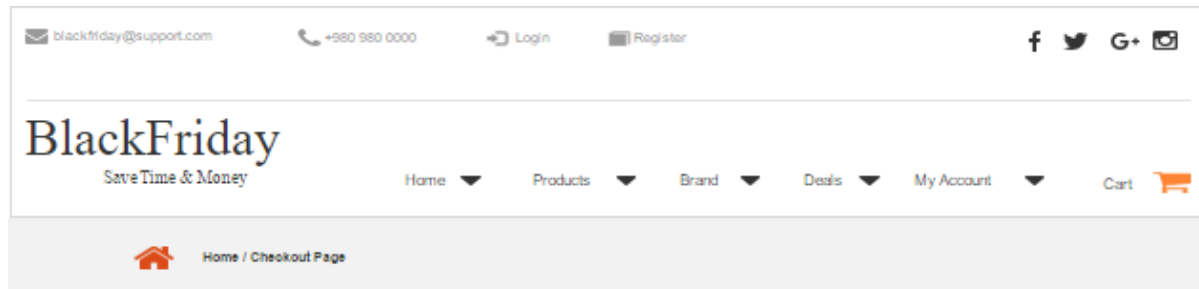


**Echo Dot**  
\$ 50.00  
Sold by: Amazon  
Gift options not available.

Need help? Check our [Help pages](#) or [contact us](#)

For an item sold by BlackFriday.com: When you click the "Place your order" button, we'll send you an email message acknowledging receipt of your order. Your contract to purchase an item will not be complete until we send you an email notifying you that the item has been shipped. Important information about sales tax you may owe in your state.

Need to add more items to your order? Continue shopping on the [BlackFriday.com homepage](#).



### Checkout

Choose a shipping address	Payment method	Items and shipping
<p><b>Your addresses</b></p> <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 60%;"> <p>© Nikita Saple</p> <p>1 Ward Street, Boston, MA 02120</p> <p style="text-align: right;"><a href="#">Edit</a></p> </div> <div style="width: 35%; text-align: center;"> <p><a href="#">+ Add a new address</a></p> </div> </div> <div style="text-align: center; margin-top: 10px;"> <p><a href="#" style="background-color: orange; color: white; padding: 5px 15px; text-decoration: none;">Use this address</a></p> </div>		

Choose an address to continue checking out. You'll still have a chance to review and edit your order before it's final.

**Order Summary**

Items: --

Shipping & handling: --

Total before tax: --

[How are shipping costs calculated?](#)

Need help? Check our [Help pages](#) or [contact us](#)

For an item sold by BlackFriday.com: When you click the "Place your order" button, we'll send you an email message acknowledging receipt of your order. Your contract to purchase an item will not be complete until we send you an email notifying you that the item has been shipped. **Important information about sales tax you may owe in your state.**

Need to add more items to your order? Continue shopping on the [BlackFriday.com homepage](#).

## b. Usability-Lab Studies

### Steps performed

- Identifying the test scenarios
- Conducting lab test
- Analysis of data
- Follow up bug until fixes made

### Benefits

- Receive feedback from realistic users early in the process to identify big problems
- Helps to measure user's ability to complete tasks
- Helps generate ideas to solve customer problems
- To identify what is working and what is not

## c. Ethnographic Field Studies

- Social equivalent of Usability testing
- Interaction by visiting people in their own environment

### Benefits



- Helps to minimize interference from the study and we understand behavior or attitudes as close to reality as possible
- Identifying user needs that have yet to be met
- Testing market demand for products that do not exist

#### d. Intercept Surveys

- Survey triggered during use of site
- Conducted in-person in public place or business

##### Benefits

- Real time feedback
- Targets all users viewing site
- Participate in minimal efforts

### 13.Web Content Accessibility Guidelines

GUIDELINES	SUMMARY
<b>WCAG 2.0 checklist Level A (Beginner)</b>	
1.2.2 – Captions (Pre-recorded)	Provide captions for videos with audio
1.2.3 – Audio Description or Media Alternative (Pre-recorded)	Video with audio has a second alternative
1.3.1 – Info and Relationships	Logical structure
1.3.2 – Meaningful Sequence	Present content in a meaningful order
1.4.2 – Audio Control	Don't play audio automatically
<b>WCAG 2.0 checklist Level AA (Intermediate)</b>	
1.4.5 – Images of Text	Don't use images of text
2.4.5 – Multiple Ways	Offer several ways to find pages
3.3.3 – Error Suggestion	Suggest fixes when users make errors
3.2.3 – Consistent Navigation	Use menus consistently
3.2.4 – Consistent Identification	Use icons and buttons consistently
<b>WCAG 2.0 checklist Level AAA (Advanced)</b>	
2.2.4 – Interruptions	Don't interrupt users
2.4.9 – Link Purpose (Link Only)	Every link's purpose is clear from its text
3.3.5 – Help	Provide detailed help and instructions
3.3.6 – Error Prevention (All)	Reduce the risk of all input errors
3.1.5 – Reading Level	Users with nine years of school can read your content

### 14.Tools and Technologies

#### a. Axure RP 8 Team Edition

**Axure RP** Pro is a wireframing, rapid prototyping, documentation and specification software tool aimed at web and desktop applications. It offers drag and drop placement, resizing, and formatting of widgets.

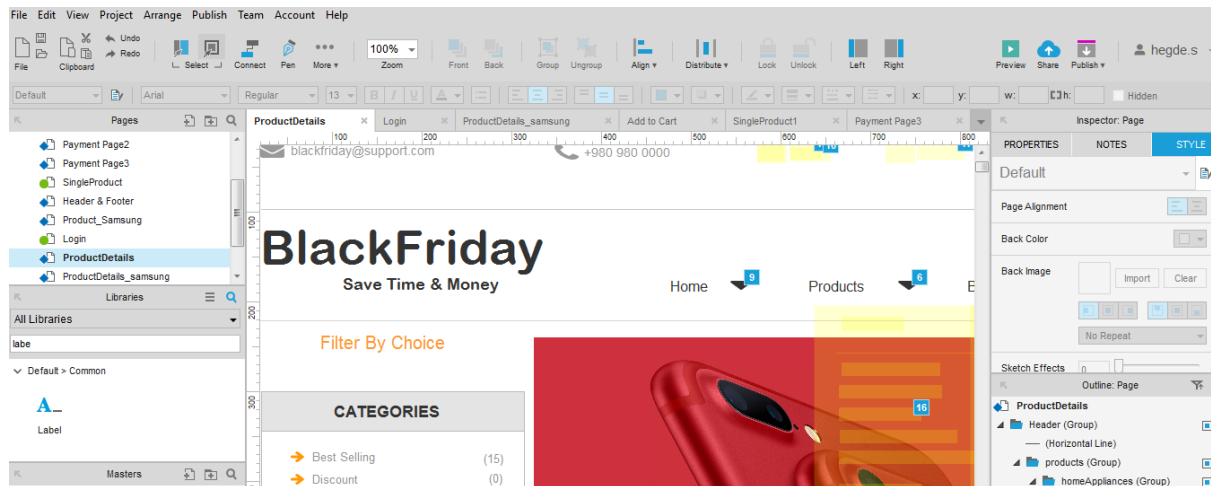
The advantage of using Axure RP is that it allows you to export the wireframes to HTML pages and allows you to use more options while configuring the pages.

The manner in which we used Axure is the we revamped our BlackFriday website completely using Axure wireframing techniques, right from the login page where using the cases and conditions we checked for empty textfields and using global variables we stored the username and retrieved it on the home page to



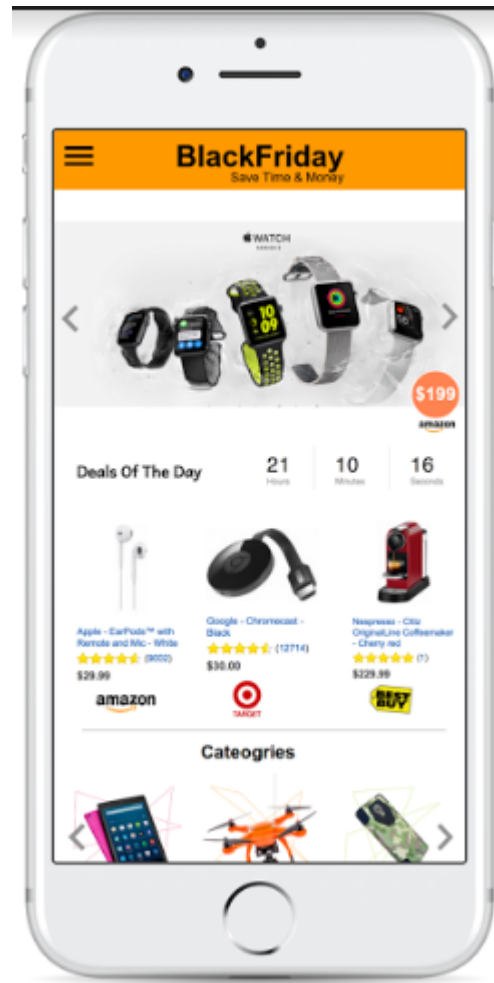
navigating the user to registration page for new user, all these actions and conditions were looked after and carried out using Axure tool and its functions.

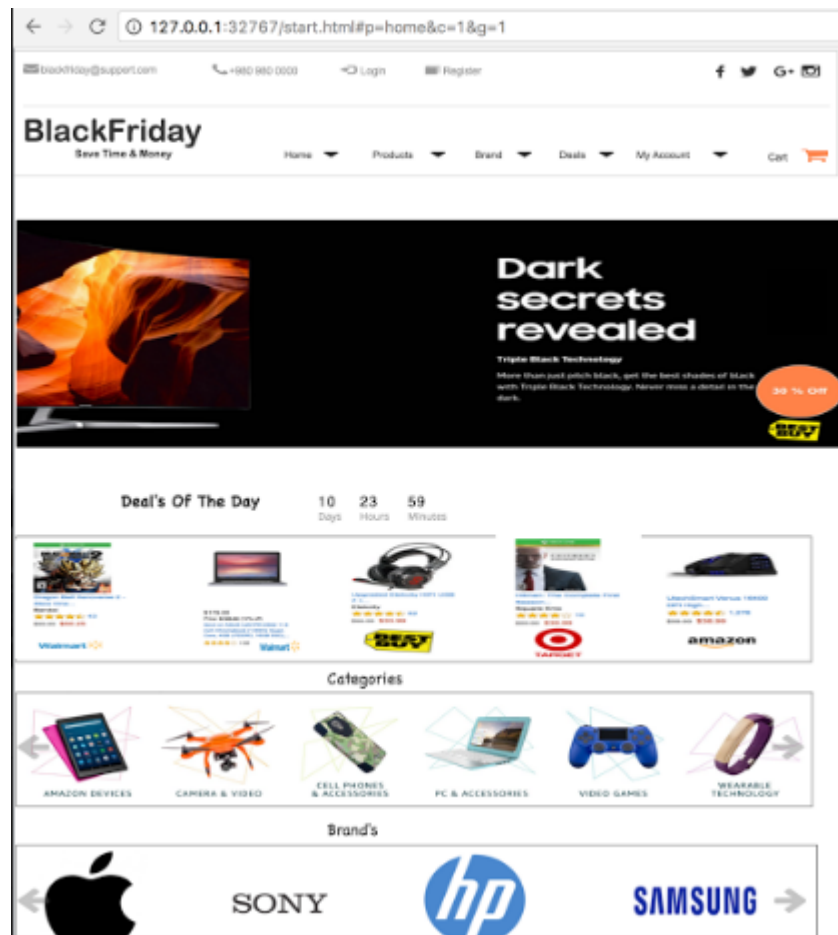
Various other functionalities including selecting a product on the basis of recommendations, individual product or brand and adding items to cart and buying it and its navigation was looked after by the Axure RP environment.



## b. Moqups

We first designed wireframes for the mobile version using Moqups and then established navigation between the different web pages through Marvel App, we then tested the mobile version right from login in, registering to buying the product and confirmation.

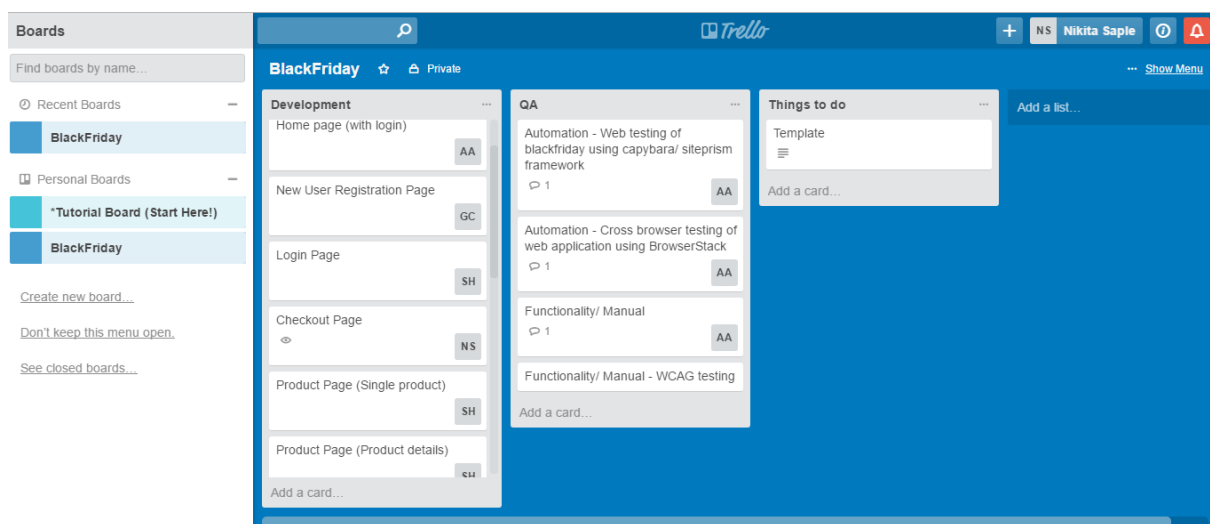




### c. Trello

**Trello** is a web-based project management application originally made by Fog Creek Software in 2011, that was spun out to form the basis of a separate company in 2014 and later sold to Atlassian in January 2017. The company is based in New York City.

It operates a freemium business model, as well as being cross-subsidized by other Fog Creek Software products. A basic service is provided free of charge, although a Business Class paid-for service was launched in 2013.



## d. Automation

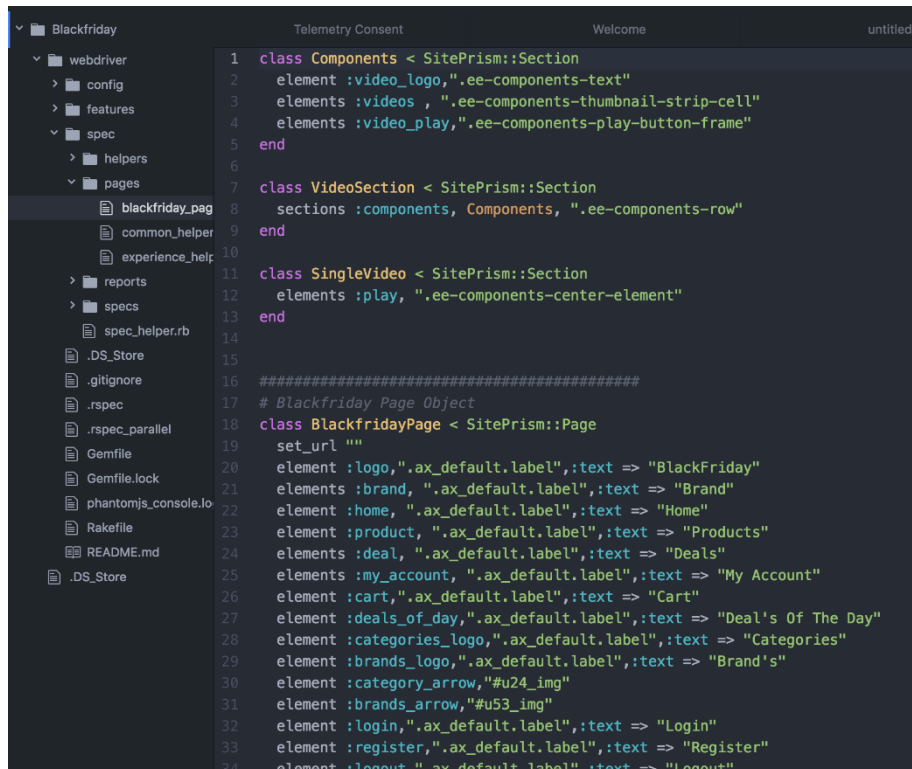
For automation of the web site we used:

- Selenium webdriver
- Framework : Siteprism/Capybara
- Language : Ruby
- Page object model

We choose Capybara framework because it provides a layer over the selenium webdriver and the user does not have to explicitly specify the elements which he is using, he has to just present the property of the object and capybara will automatically detect the element for you. Siteprism framework is independent of the driver that you are using, you need to install the respective driver and configure in its configuration file . The same price of code works for every driver.

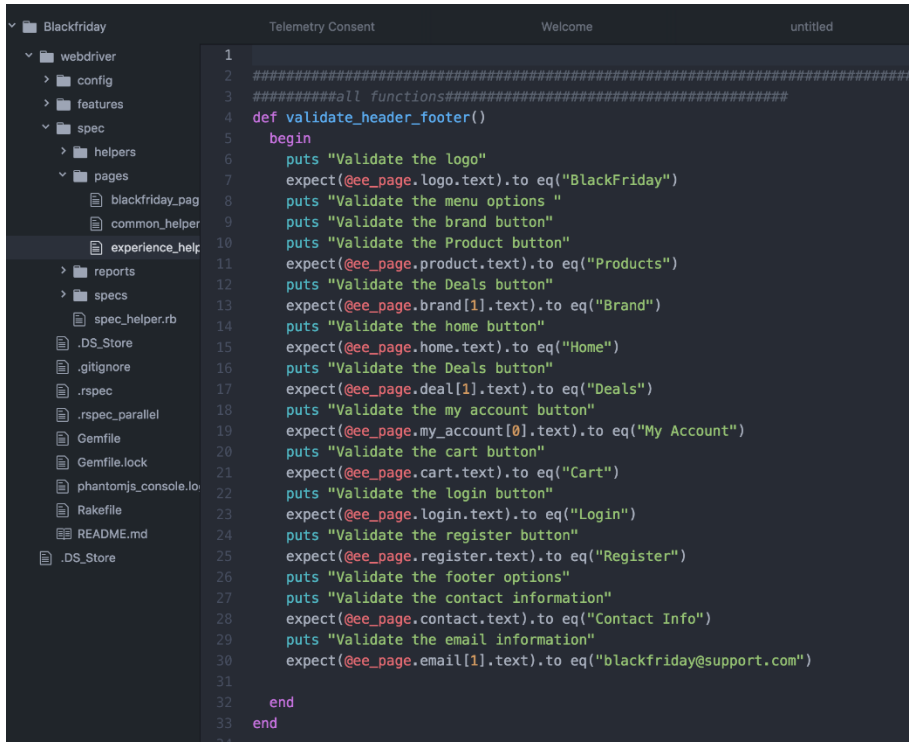
The code is divided into 3 parts:

1. Objects definition : This is the file were you define the objects of the web page . This is divided into sections and elements of that sections.



### 2. Functions/Routine

This is the file where we define all the reusable functions of that webpage. Here we create the object of our object file and use that to invoke/check each element of the webpage.

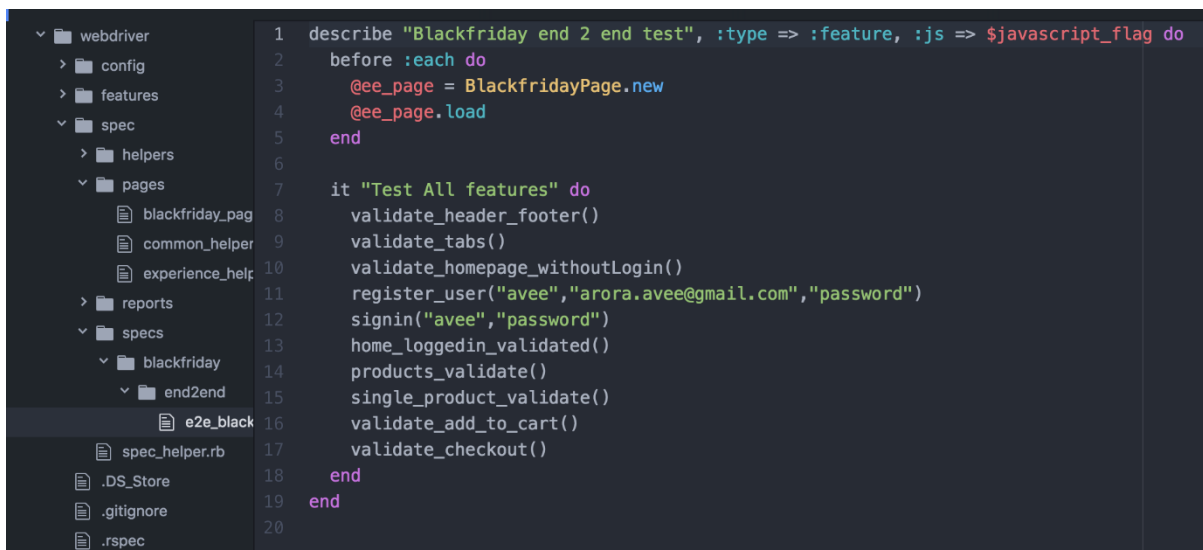


```

1
2 #####all functions#####
3
4 def validate_header_footer()
5   begin
6     puts "Validate the Logo"
7     expect(@ee_page.logo.text).to eq("BlackFriday")
8     puts "Validate the menu options "
9     puts "Validate the brand button"
10    puts "Validate the Product button"
11    expect(@ee_page.product.text).to eq("Products")
12    puts "Validate the Deals button"
13    expect(@ee_page.brand[1].text).to eq("Brand")
14    puts "Validate the home button"
15    expect(@ee_page.home.text).to eq("Home")
16    puts "Validate the Deals button"
17    expect(@ee_page.deal[1].text).to eq("Deals")
18    puts "Validate the my account button"
19    expect(@ee_page.my_account[0].text).to eq("My Account")
20    puts "Validate the cart button"
21    expect(@ee_page.cart.text).to eq("Cart")
22    puts "Validate the login button"
23    expect(@ee_page.login.text).to eq("Login")
24    puts "Validate the register button"
25    expect(@ee_page.register.text).to eq("Register")
26    puts "Validate the footer options"
27    puts "Validate the contact information"
28    expect(@ee_page.contact.text).to eq("Contact Info")
29    puts "Validate the email information"
30    expect(@ee_page.email[1].text).to eq("blackfriday@support.com")
31  end
32 end
  
```

### 3: Test script

This is the file we call each of the functions used to create the test case.



```

1 describe "Blackfriday end 2 end test", :type => :feature, :js => $javascript_flag do
2   before :each do
3     @ee_page = BlackfridayPage.new
4     @ee_page.load
5   end
6
7   it "Test All features" do
8     validate_header_footer()
9     validate_tabs()
10    validate_homepage_withoutLogin()
11    register_user("avee", "arora.avee@gmail.com", "password")
12    signin("avee", "password")
13    home_loggedin_validated()
14    products_validate()
15    single_product_validate()
16    validate_add_to_cart()
17    validate_checkout()
18  end
19 end
  
```

Invoking the Test case:

The requiremnts to run the automation suite .

- Ruby
- Selenium webdriver
- Chrome/Phantomjs/firefox/browserstack drivers

Invoking command:



```
webdriver — -bash — 105x24
aarora-newretina16:~ aarora$ pwd
/Users/aarora
aarora-newretina16:~ aarora$ cd Blackfriday/webdriver/
aarora-newretina16:webdriver aarora$ TEST_ENV=new-qa-chrome parallel_rspec -n 2 spec/specs/blackfriday/en
d2end/e2e_blackfriday.rb
```

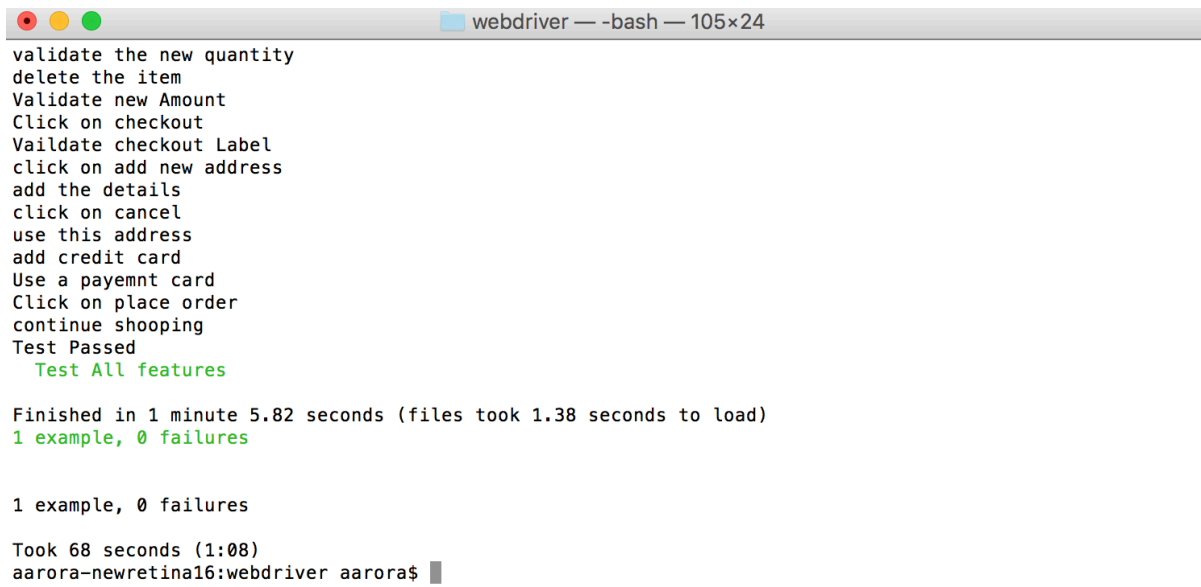
Here :

Test\_Env is the environment or browser on which you want to run the test.

Parallel\_rspec : is the number of parallel task you need to perform.

Last : the test case script path .

Results:



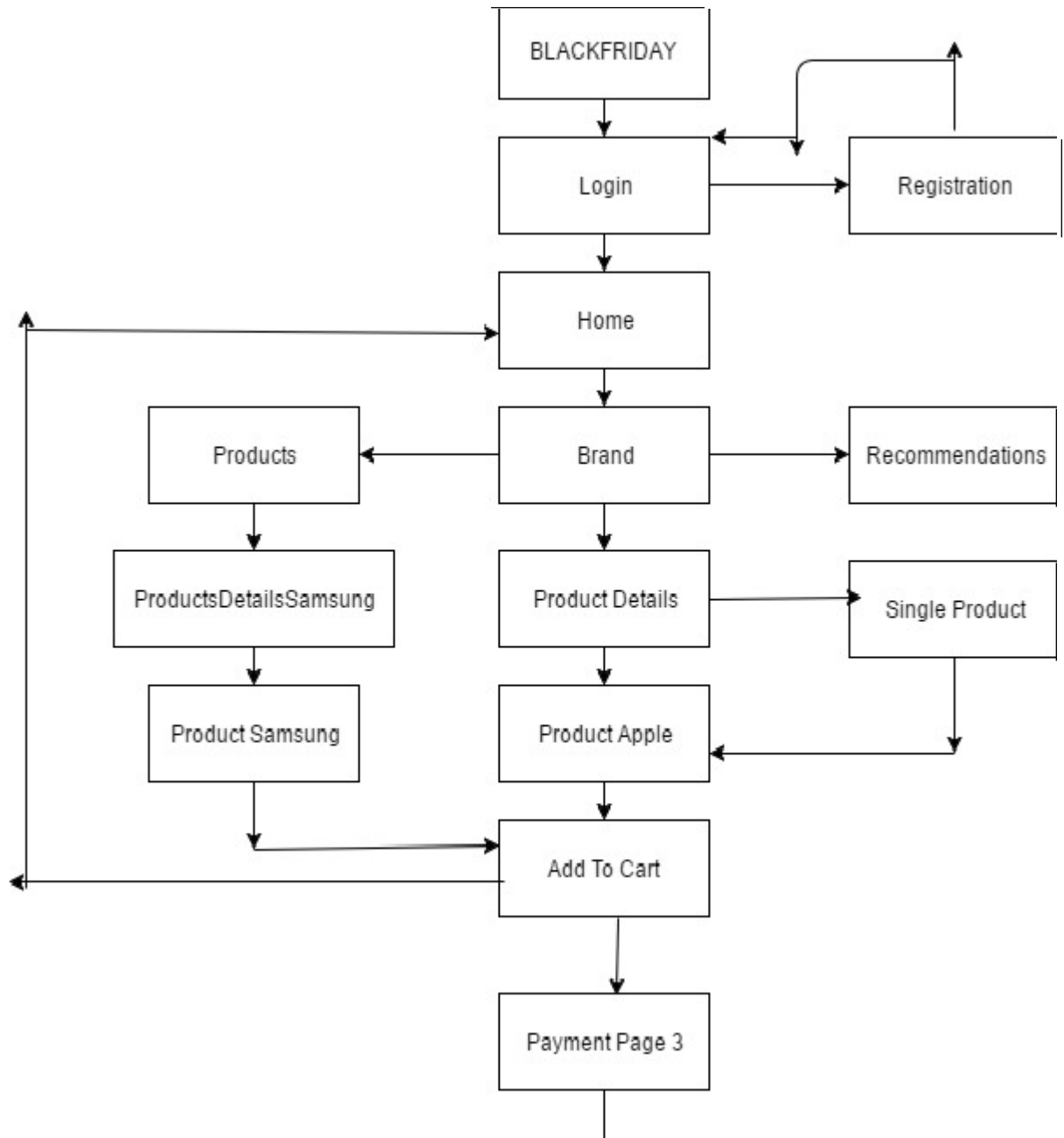
```
webdriver — -bash — 105x24
validate the new quantity
delete the item
Validate new Amount
Click on checkout
Vaildate checkout Label
click on add new address
add the details
click on cancel
use this address
add credit card
Use a payemnt card
Click on place order
continue shooping
Test Passed
  Test All features

Finished in 1 minute 5.82 seconds (files took 1.38 seconds to load)
1 example, 0 failures

1 example, 0 failures

Took 68 seconds (1:08)
aarora-newretina16:webdriver aarora$
```

## 15. Flowchart



## 16. Future Scope/ Moonshots

Moonshots for this website for future scope can be:

- 1) Brain wave detection for order processing
- 2) Voice interaction with website. (Searching for best deals through Alexa or Siri)

3) Fingerprint authentication, finger print allows you to identify the customer and his order history.

## **17. Tools Explored**

- Marvel app for interaction
- Video embedding
- Trello Task Management
- WCAG
- Automation Framework
- Browserstack