**Phase -1 : Requirements Analysis**

**Functional Requirements**

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| FR - 01 | Keeping records of products |
| Description | The products which are launched for selling in the system Eshop will be kept details about quality, quantity, brand, price, seller information and location. |
| Priority | High |

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| FR - 02 | Keeping record of admission of customer and access control |
| Description | There are three types of stakeholders - user, seller and admin. They are not priviledges same, so access components are based on stakholder roles. |
| Priority | High |

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| FR – 03 | Keeping the daily sell |
| Description | About the daily purchases, payments and products launching information. |
| Priority | Medium |

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| FR - 04 | Keeping the details of product it is delivered or not |
| Description | After approving purchase by admin checking whether the products are delivered by particular agent. |
| Priority | Medium |

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| FR - 05 | Storing the items selected by the customer in the temporary storage |
| Description | Database need for hold cart items which are selected by user for their purchase. |
| Priority | High |

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| FR - 06 | Storing the feedback given by the customer |
| Description | Customer will be able to express their opinion and any query for any particular product. |
| Priority | Low |

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| FR - 07 | Registration to the system |
| Description | For purchasing or launch any product user and seller have to register with the system. |
| Priority | High |

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| FR - 08 | Minimum steps to make purchase |
| Description | User should not go through a long process to order any products and increase user experience. |
| Priority | Medium |

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| FR - 09 | Product attributes |
| Description | Product image, quantity, brand , product details,seller info and stock. |
| Priority | High |

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| FR - 10 | Mobile friendliness |
| Description | Make sure responsive implementation is professionally executed and user who are using the system with mobile should not seem to use the system complex. |
| Priority | High |

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| FR - 11 | Unique and recognizable design |
| Description | User should not confused whether they are using Eshop platform or not, so design should be unique. |
| Priority | Medium |

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| FR - 12 | Relevant useful content |
| Description | All module documents and uses should stored in a planned way. |
| Priority | Low |

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| FR - 13 | Email news letter tools |
| Description | We will use email section for the confirmation and news give to user and also for seller. |
| Priority | Medium |

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| FR - 14 | Shipping and payment systems integration |
| Description | Payment and shipping information have to process peoperly so that user can reliable with the Eshop sytem. |
| Priority | High |

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| FR - 15 | User ability after order placing |
| Description | User can change the order, cancel the order , track the order and able to apply for return of products within a particular time |
| Priority | Medium |

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| --- | --- |
| FR - 15 | Guest checkout |
| Description | People who are not yet register to the system can checkout product and can store it in cart. |
| Priority | Medium |

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| --- | --- |
| FR - 16 | Search engine optimization |
| Description | Developer need to optimize search section sothat uer can get relevant products through their searching. They’ll be able to search by category/products name. |
| Priority | High |

**Non-functional**

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| NFR - 01 | Security |
| Description | Developer need to optimize search section sothat uer can get relevant products through their searching. They’ll be able to search by category/products name. |
| Priority | High |

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| NFR - 02 | Performance |
| Description | Developer need to optimize search section sothat uer can get relevant products through their searching. They’ll be able to search by category/products name. |
| Priority | High |

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| NFR - 03 | Reliability |
| Description | Developer need to optimize search section sothat uer can get relevant products through their searching. They’ll be able to search by category/products name. |
| Priority | High |

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| NFR - 04 | Scalability |
| Description | Developer need to optimize search section sothat uer can get relevant products through their searching. They’ll be able to search by category/products name. |
| Priority | High |

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| NFR - 05 | Maintainability |
| Description | Developer need to optimize search section sothat uer can get relevant products through their searching. They’ll be able to search by category/products name. |
| Priority | High |

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| --- | --- |
| NFR - 06 | Portability |
| Description | Developer need to optimize search section sothat uer can get relevant products through their searching. They’ll be able to search by category/products name. |
| Priority | High |

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| NFR - 07 | Extensibility |
| Description | Developer need to optimize search section sothat uer can get relevant products through their searching. They’ll be able to search by category/products name. |
| Priority | High |

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| NFR - 08 | Reusability |
| Description | Developer need to optimize search section sothat uer can get relevant products through their searching. They’ll be able to search by category/products name. |
| Priority | High |

**Phase -2 : Test Planning**

### ****Test Plan:** Template** is a detailed document that describes the test strategy, objectives, schedule, estimation and deliverables, and resources required for testing.

### Testing Strategy:

### 

### Test Factors: Test factors are risk factors or issues related to the system under development.

### Test Factors of E-Shop

### User can not login to the system with invalid credintials.

### User won’t able to see database files or other users information.

### User won’t able to modify product item attributes.

### Price of products in cart should calculate accurately.

### User won’t be able to interrupt or access on any part in admin panel.

### System will portable to almost every hardware.

### Test Phase : Requirements gathering, requirements specification, functional design(HLD), internal design (LLD), coding. [SDLC]

### Test Strategy Matrix

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Test Factors** | **Test Phase** | | | | | |
| **Factor id** | Requirements | Design | Code | Unit test | Integration Test | System Test |
| **I** | User registered to the system? |  | Allow sql query in username and password field? | Prohibit invalid query? |  |  |
| **II** |  | Is system exploits the private files? | Is encryption used for database files? |  |  |  |
| **III** |  | Is prduct item is editable by user? |  | Is user module has connection to products add/edit class? |  | Is only admin able to change attributes? |
| **IV** |  | Is indexing in cart done properly? | Has sum and multiplication method inconsistency? |  |  |  |
| **V** | Is user need to access admin? |  |  |  |  | Is admin module completely partitioned from user module? |
| **VI** | Which os & hardware should support this system? |  |  |  |  | Is the system run on mac/windows/linux or android? |

**Best suited Testing Approach**

* Functional Testing
* Usability Testing
* Security Testing
* Performance Testing
* Database Testing
* A/B testing

**Roles and responsibilities**

|  |  |  |
| --- | --- | --- |
| Roles | Responsibilities | Persons |
| Test Manager | Manage the whole project, acquire appropriate re-sources and control team members. | Akash  &  Saifur  ­ |
| Test Analyst | Identify test conditions and features. |
| Software Development Engineer in Test | Develop tools for testing. |
| Software Test Engineer | Test the overall system using appropriate testing approach and instruments |
| Test Architect | Design various suitable testing models |
| SQA team | Check to confirm whether the testing process is meeting specified requirements |
| Developer in Test | Implement the test cases, test program, test suite etc. |

**Identifying the testing techniques and testing types**

|  |  |  |
| --- | --- | --- |
| Testing Techniques | Testing Type | Perform on |
| Dynamic Testing  (Black Box) | Boundary Value Analysis  Equivalence Class Partitioning  Cause-effect Graph | Functional requirements, code |
| Dynamic Testing  (White Box) | Logic Coverage Criteria  Basic Path Testing  Control Flow Graph  Graph Matrix  Connection Matrix | Structure,deign , code |
| Static Testing | Inspection | Whole system without execute code |
| Validation Testing | Unit Testing  Integration Testing  Function Testing  System Testing  Acceptance Testing  Installing Testing | Code Module  Merged code  Functional design  SRS  Conformance to gathered requirements  Adaptability with operating machine |
| Regression Testing | Test Prioritization | Testing requirements |

### Testing tool: No Testing Tool used.

**Test Planning Checklist**

### #1) Homepage

* Is it going to auto scroll? Test result – Yes.
* If yes, at what interval will the image be refreshed? Test result – No auto refresher.
* When the user hovers over it, is it still going to scroll to the next one? Test result – No.
* Can it be hovered on? Test result – Yes.
* Can it be clicked on? Test result – Yes.
* If yes, is it taking to the right page and right deal? Test result – Yes.
* Is it loading along with the rest of the page or loads last in comparison to the other elements on the page? Test result – load along rest of the page.
* Can the rest of the content be viewed? Test result – Yes.
* Does it render the same way in different browsers and different screen resolutions? Test result – Chrome and mozilla rendered properly nad also render in 1080x1024 and also higher.

### #2) Search

* Search based on the Product name, brand name, or something more broadly, the category. Test result – Category and product name.
* Is search Results have relevant? Test result – Yes.
* Different sort options have to be available- based on Brand, Price, and Reviews/ratings etc. Test result – Yes, show properly.
* How many results to display per page? Test result – displays 6 in computer browser and 1 in mobile-phone.
* For multi-page results, are there options to navigate to them? Test result – No.

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### #3) Product Details

* Image or images of the product. Test result – Render accurately.
* Price of the product. Test result – Show price below the product.
* Product specifications. Test result – Has no details and stocks.
* Reviews Test result – No review section.
* Check out options Test result – Checkout operate smoothly.
* Delivery options Test result – Home delivery by address.
* Shipping information? Test result – user unable to know.
* In-stock/Out of stock info? Test result – Not exist.
* Multiple color or variations options? Test result – No.

### #4) Shopping Cart

* Add items to the cart and continue shopping. Test result – Works properly.
* If the user adds the same item to the cart while continuing to shop, the item count in the shopping cart should get incremented. Test result – Pass, comply to the same.
* All items and their totals should be displayed in the cart. Test result – Pass.
* Taxes as per location should be applied. Test result – No taxes info.
* A user can add more items to the cart. Test result – Pass.
* Update the contents added to the cart. Test result – Pass, user can edit product number in the cart.
* Remove items from the cart. Test result – Pass.
* Proceed to checkout. Test result – Pass.
* Calculate Shipping costs with different shipping options. Test result – Yes.
* Apply coupons. Test result – No section.
* Don’t check out, close the site, and come back later. The site should retain the items in the cart. Test result – Pass.

### #5) Payments

* Has different payment options? Test result – Bkash, Nagad, Rocket has found.
* Is allowing check out as Guest, simply finish the purchase and provide an option to register at the end? Test result – No, there’re no functi-onality for guest.
* Login to check out? Test result – only for registered user can checkout.
* User sign up. Test result – email, username and with a password.
* If storing customer Credit card or any other financial information, perform security testing around this to make sure it is secure. Test result – Eshop system only use mobile banking.
* If the user is signed up for a long time, make sure the session is timed out or not. Every site has a different threshold. For some, it is 10 minutes. For some, it might be different. Test result – session will stop when user logout to the system.
* Text confirmation with the order number generated. Test result – Not build yet.

### #6) Web Standards Test

* Run html validation check. Test result – Pass.
* Run css validation check Test result – Pass.

### #6) SEO Test

* Structure of URLs. Test result – Correct.
* Unique title for each page and product page. Test result - Pass
* Title tag should include product name and category. Test result – Pass.
* Meta description for each page. Test result – Fail.
* Alt text has been added for all images. Test result – Pass.

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**Phase -3: Test Case Development**

**Test case** :

**Functional Test Cases**

|  |  |  |  |
| --- | --- | --- | --- |
| ID | Test case | Verification | Test Data |
| TC01 | Check customer registration with valid email | Valid | Email: [saif@gmail.com](mailto:saif@gmail.com)  username: saifur pass: saif1234 |
| TC02 | Check customer registration with invalid email | Invalid | Email:hello,username: saifur  Pass: saif1234 |
| TC03 | Check customer login with valid data | Valid | Username = saif99  Password = pass99 |
| TC04 | Check customer login with invalid data | Invalid | Username = saif99  Password = pass99 |
| TC05 | Test to product add to cart button with mini-mum quantity | Valid | quantity= 1 |
| TC06 | Test to product add to cart button with maximum quantity | Valid | quantity= 50 |
| TC07 | Check customer feedback successfully send to the system | Valid |  |
| TC08 | Check daily sell record store in the system | Valid |  |
| TC09 | Check the search using a product name. | Valid | Product name= t-shirt |
| TC10 | Check the search using a category name. | Valid | Category name= shirt |
| TC11 | Check website users can easily add/remove products to/from a shopping cart. | Valid |  |
| TC12 | Check users can add the same product multiple times | Invalid |  |
| TC13 | Check to add the same products in different variations – color, size, etc. | Valid |  |
| TC14 | Check users can add products from different categories to the cart. | Valid |  |
| TC15 | Check Items in the cart are displayed with correct names, images, and prices. | Valid |  |
| TC16 | Check items are clickable, and the links lead to corresponding product pages. | Valid |  |
| TC17 | Check an order price updates when a user adds/removes a new item to/from the cart. | Valid |  |
| TC18 | Test Customers can check out and pay as users with registration. | Valid |  |
| TC19 | Test Customers can check out and pay as guest users without registration. | Invalid |  |

**Non-functional Test Cases**

|  |  |  |  |
| --- | --- | --- | --- |
| ID | Test case | Verification | Test Data |
| TC20 | Check it takes the expected time for a user to log in with the correct credentials. | Valid | Username= saif  Password=1234 |
| TC21 | Check page loading speed is acceptable. | Valid |  |
| TC22 | Check the carousel auto scrolls and the scrolling interval. | Valid |  |
| TC23 | Check an application should be available at different battery conditions, including charging. | Valid |  |
| TC24 | Check a user should be able to log in from different devices simultaneously. | Valid | Username= saif  Password=1234 |
| TC25 | Check the information from different devices should synchronize momentarily. | Valid |  |
| TC26 | Check the application should not cause device heating or battery draining. | Valid |  |

**Phase -4 : Test Environment Setup**

**Hardware (Desktop / Laptop)**

* RAM : 512 MB or more
* Hard drive : 1 GB or above
* Processor : 1.80 GHz or above

**Software**

* Operating System : Windows 7 or above / Linux / Mac
* Browser : Chrome / Mozilla / opera / Brave latest versions
* Code editor : Visual Studio Code

We installed OS - window 10 Home, 4GB RAM and 1TB hard-disk, processor - Intel(R) Core(TM) i3-3110M CPU @ 2.40GHz, chrome browser and Visual studio code as editor.

**Phase - 4 : Test Execution**

**Functional test case execution**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **ID** | **Test Scenario** | **Test Steps** | **Test Data** | **Expected Results** | **Actual Results** | **Pass/**  **Fail** |
| TC01 | Check Customer Registration with valid Email | 1. Go to site http://localhost/eshop/login.php 2. Click SignUp button 3. Enter valid email and others data 4. Click SignUp | Email: [saif@gmail.com](mailto:saif@gmail.com)  username: saifur  Phone number: 0182637623  Pass: saif1234 | User should Registration into an application | As Expected | Pass |
| TC02 | Check Customer Registration with invalid Email | 1. Go to site http://localhost/eshop/login.php 2. Click SignUp button 3. Enter valid email and others data   Click SignUp | Email: hello…..  username: saifur  Phone number: 0182637623  Pass: saif1234 | User should not Registration into an application | As Expected | Pass |
| TC03 | Check Customer Login with valid Data | 1. Go to site http://localhost/eshop/login.php 2. Enter Username 3. Enter Password   Click Submit | Username = saif99 Password = pass99 | User should Login into an application | As Expected | Pass |
| TC04 | Check Customer Login with invalid Data | 1. Go to site http://localhost/eshop/login.php 2. Enter Username 3. Enter Password   Click Submit | Username = saif99  Password = pass99 | User should not Login into an application | As Expected | Pass |
| TC05 | Test to product add to cart button with minimum quantity | 1. Go to site http://localhost/eshop/login.php 2. Product quantity set at least 1 & Click Add to cart button | quantity= 1 | User should add the product to the cart | As Expected | Pass |
| TC06 | Test to product add to cart button with maximum quantity | 1. Go to site http://localhost/eshop/login.php 2. Product quantity set maximum 50 3. Click Add to cart button | quantity= 50 | User should add the product to the cart | As Expected | Pass |
| TC07 | check customer feedback successfully send to the system | 1. Go to site http://localhost/eshop/login.php |  | User should send feedback | Not Expected | Fail |
| TC08 | Check daily sell record store in the system | 1. Go to site http://localhost/eshop/login.php |  | Admin should see daily sell record in the system | As Expected | Pass |
| TC09 | Check the search using a product name. | 1. Go to site http://localhost/eshop/login.php 2. Enter product name in the search box 3. Click Search | Product name= t-shirt | User should see the product available | Not Expected | Fail |
| TC10 | Check the search using a category name. | 1. Go to site http://localhost/eshop/login.php 2. Enter category name in the search box   Click Search | Category name= shirt | User should see the product available | Not Expected | Fail |
| TC11 | Check website users can easily add/remove products to/from a shopping cart. | 1. Go to site http://localhost/eshop/login.php   Click remove button |  | User should see the product remove from the shopping cart | As Expected | Pass |
| TC12 | Check users can add the same product multiple times. | 1. Go to site http://localhost/eshop/login.php 2. choose product   Selected add to cart |  | User should add product to the cart | Not Expected | Fail |
| TC13 | Check to add the same products in different variations – color, size, etc. | 1. Go to site http://localhost/eshop/login.php 2. choose product 3. Selected product color, size variation Different variation   Same product add to the shopping cart |  | User should add different variation same product to the cart | Not Expected | Fail |
| TC14 | Check users can add products from different categories to the cart. | 1. Go to site http://localhost/eshop/login.php 2. choose product   Selected product add to the  shopping cart |  | User should add different category product to the cart | As Expected | Pass |
| TC15 | Check Items in the cart are displayed with correct names, images, and prices. | 1. Go to site http://localhost/eshop/login.php   Click view Cart menu option |  | User should see added product are displayed with correct names, images, and prices in the shopping cart | As Expected | Pass |
| TC16 | Check items are clickable, and the links lead to corresponding product pages. | 1. Go to site http://localhost/eshop/login.php   Click item products |  | User should click the product and the links lead to corresponding product pages. | Not Expected | Fail |
| TC17 | Check an order price updates when a user adds/removes a new item to/from the cart. | 1. Go to site http://localhost/eshop/login.php 2. Choose product add to cart   Remove product add to cart |  | User should see an order price updates when a user adds/removes a new item to/from the cart. | As Expected | Pass |
| TC18 | Test Customers can check out and pay as users with registration. | 1. Go to site http://localhost/eshop/login.php 2. User Selected product click to checkout   User registration confirm |  | User should check out and pay | As Expected | Pass |
| TC19 | Test Customers can check out and pay as guest users without registration. | 1. Go to site http://localhost/eshop/login.php 2. view cart   Click checkout |  | User should check out and pay | Not Expected | Fail |

**Non-functional test case execution**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **ID** | **Test Scenario** | **Test Steps** | **Test Data** | **Expected Results** | **Actual Results** | **Pass/**  **Fail** |
| TC20 | Check it takes the expected time for a user to log in with the correct credentials. | 1. Go to site http://localhost/eshop/login.php 2. Enter username 3. Enter password | Username= saif  Password=1234 | User should login within 2-3 seconds | As Expected | Pass |
| TC21 | Check page loading speed is acceptable. | 1. Go to site http://localhost/eshop/login.php |  | User should see that home page load within 2-3 seconds | As Expected | Pass |
| TC22 | Check the carousel auto scrolls and the scrolling interval. | 1. Go to site http://localhost/eshop/login.php |  | User should see that carousel slider are auto scrolled | As Expected | Pass |
| TC23 | Check an application should be available at different battery conditions, including charging. | 1. Go to site http://localhost/eshop/login.php |  | User should see that application should be available at different battery conditions. | As Expected | Pass |
| TC24 | Check a user should be able to log in from different devices simultaneously. | 1. Go to site http://localhost/eshop/login.php 2. Enter username 3. Enter password | Username= saif  Password=1234 | User should able to log in from different devices simultaneously. | As Expected | Pass |
| TC25 | Check the product information from different devices should synchronize momentarily. | 1. Go to site <http://localhost/eshop/login.php> 2. Choose product |  | User should able to see the product information from different devices should synchronize momentarily. | As Expected | Pass |
| TC26 | Check the application should not cause device heating or battery draining. | 1. Go to site http://localhost/eshop/login.php |  | User should be able to use the system friendly without any battery problem. | As Expected | Pass |