Software Testing

System Testing

For this project we will employ an agile approach through weekly iterations. Each week there will be requirements identified for completion to be delivered. These identified requirements will be verified complete and then tested. Tests for planned functionality will be created and modified as deemed necessary. After the project is completed standardized tests will be developed that will be performed on a set schedule. Although automated unit tests are time efficient, there are no automated functional tests at this time.

Function testing.

A checklist, as modeled below, will be created in an attempt to ensure that everything on our website works as intended.

Test No.	Page Name	Page URL	Object	Pass/Fail
1				
2				
3				
4				
5				

Links.

We will start with all internal and external links. The aim of the test will be to verify that all links are correct, that there are no missing links, and that there are no unreferenced pages.

Forms testing for all pages.

We will be using several forms for interactive communication with site members. These forms must be tested to ensure all data entry boxes can be filled correctly, only allowed

characters or values are permitted to be entered for data entry boxes and that all check boxes are fillable correctly.

HTML/CSS validation.

We will test for HTML syntax errors to ensure proper function for users and verify that the site is available to the public on search machines. We will also verify that our site is accurately mapped in both HTML and XML formatting.

Content testing.

Once we have tested for all the functionalities of the website, we will need to test visual aspects of the site. This includes grammar and spelling mistakes, image sizes, image placement, font sizes, font colors, and navigation. We will need to make sure that our content is visible, legible, logically linked, properly structured, clear and that no information is incorrect.

User Interface testing.

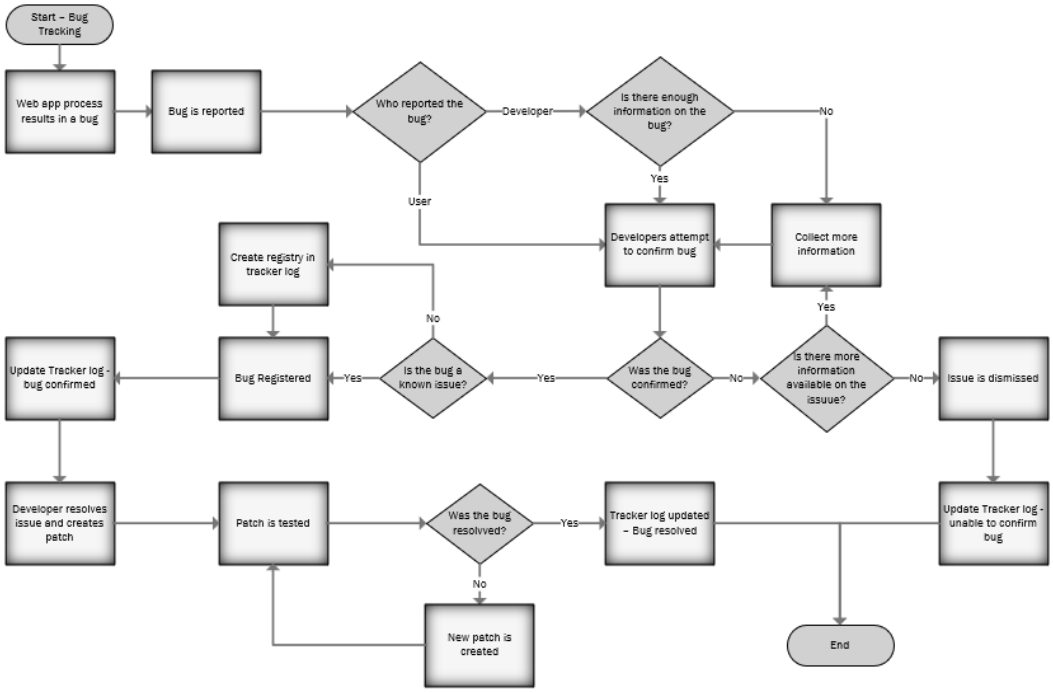
We will need to test the user interface to ensure that users are seeing our pages as we intend them to be displayed regardless of what device or browser they are using.

Bug Tracking

A bug, in relation to software, is an error or flaw in a computer program that causes it to produce and unexpected result or to behave in ways unintended. Bug reports will be submitted by both users and personnel. To circumvent the need to create a separate web page, bug reporting will be handed via email.

Reporting process.

The reporting process will go as follows:



The process will follow the same course regardless of who submits a bug report but it shall be noted who makes the report. When an issue is added to the tracker log, the status could be depending on the situation:

1. New
2. Pending Confirmation
3. Confirmed/dismissed
4. Awaiting resolution
5. Resolved

When issues are first reported they will be set to new. Once they are reviewed and assigned to developer they will be set to pending confirmation. Then when the developer either confirms or makes every attempt to confirm the bug then the issue will be set to confirmed or dismissed. Afterwards developers will create a patch, implement it and then test the resolution. Last but not least, when the issue is resolved it will be marked resolved.

Issue priorities.

1. Critical: The trunk does not work. Significant parts of the source are broken preventing key operations.
2. Urgent: Portions of the source are hindering advertised functions in a major way.
3. Medium: Issues are hindering proper function but applications are still working. There are workarounds for the issues.
4. Low: There is a minor loss of advertised function. Typically, this is just a nuisance but does not significantly affect proper function of the site. This may be a result of the site being accessed from an uncommon platform.
5. Very low: These issues are related to cosmetics, misspellings, misaligned graphics, etc.

Usability Testing

Our primary goals of usability testing are to set a baseline of user performance, establish and validate user performance measures, and to identify any potential concerns with the website's design. Through this process we will be able to improve our website's efficiency as well as our end user's satisfaction. We strive to determine inconsistencies and usability problem areas within the user's interface and content areas. This may include but is not limited to navigation errors, presentation errors and control usage problems. We will have participants in these usability test exercise the website under a controlled test condition with representative proctors. Data will be recorded to observe how effective, efficient and well-received user interaction is.

Participants

The participants in these usability tests will be assigned a set of tasks to complete in as efficiently as possible within a timely manner. Afterwards they will be asked to provide feedback

in regards to their usability and their acceptability of the interface they interacted with. The participants will be asked to provide the most honest opinion as possible.

Procedure

Participants take part in these tests using a computer of their choosing. The team will ensure that they perform tests on as many operating systems and platforms as possible. The participant's interaction with the website will be monitored by the team representative that will be observing from the same room. The team representative will brief the participant on the Website and instruct them that they will be evaluating the website, rather than the team representative evaluating the participant. The team representative will also instruct the participant to think aloud. The participation will be voluntary and the participants may choose to cease the usability test at any time. Prior to beginning each task, the participant will read aloud the task description from the printed copy and then begin the task. The time measurement will begin when the participant begins the task. After each task, the participant will complete a post-task questionnaire. After all task scenarios are attempted, the participant will complete a post-test satisfaction questionnaire. The team representative observing the participant will record the participant's actions and verbal comments. The team representative will also observe any problems encountered, concerns, coding bugs, and procedural errors.

Usability Metrics

The goal of the usability testing plan is to gather actionable and quantifiable data that can be used to improve the usability of the application. The two primary metrics that we will be collecting are for task completion and each user's subjective evaluation.

Task completion.

Each task will require that the participant obtains or inputs specific data that would be used to carry out the course of action during a typical task. The task will be completed whenever the participant indicates that they have accomplished the goal of the task, regardless of whether the task was completed successfully or not. The task may also be marked as completed if there is an error that prevents the user from accomplishing a task and the test observer will make note of such error.

Subjective evaluations.

Subjective evaluations in regards to the ease of use as well as the satisfaction of the end user will be collected via questionnaires, which will utilize free-form responses and rating scales.

Requirements Traceability Matrix Test Plan

The functional requirements for the project as described in the requirements traceability matrix will be tested to ensure that the web site is meeting the design and business objectives. Each requirement in the requirements traceability matrix will have a corresponding test case that described how each individual requirement can be validated. Routine testing will occur to not only validate new build in the website but also to test previously built portions of the website to ensure that all features are working as intended. The following matrix is the latest version that has been created and will be updated as necessary.

ID	Requirement	Requirement Being Met?	Unit Test Passing?	Method*	D&T
1	Page Structure(Header/Footer)	☐	☐		
1.1	Every Header will display company logo	☑	☐		
1.2	Every logo will redirect to home when clicked	☑	☐		
1.3	Every Header will have a link to the "Log in" page	☑	☐		
1.4	Every Header will have a link to the "Help" page	☑	☐		
1.5	Every Header will have a link to the "Blog" page	☑	☐		
1.6	Every Header will have a dropdown menu	☑	☐		
1.6.1	The Dropdown will have a link to the "Courses" page	☑	☐		
1.6.2	The Dropdown will have a link to the "Register" page	☑	☐		
1.6.3	The Dropdown will have a link to the "Log in" page	☑	☐		
1.6.4	The Dropdown will have a link to the "Blog" page	☑	☐		
1.6.5	The Dropdown will have a link to the "Common Calc"page	☑	☐		
1.7	Every Footer will display link to Contact us page	☐	☐		
1.8	Every Footer will display link to Terms & Cond. page	☐	☐		
1.9	Every Footer will display link to Privacy Policy page	☐	☐		
1.10	The Homepage will have a link to the "Log in" page	☐	☐		
1.11	Header will have a Mobile Responsive Design	☐	☐		
1.12	Every page will have intuitive URLS	☐	☐		
2	Page Structure(Home Page)	☑	☐		
2.1	The Homepage will have a link to the "About" page	☑	☐		
2.2	The Homepage will have a link to the "Sign up" page	☑	☐		
2.3	The Homepage will have a link to the "Courses" page	☑	☐		
2.4	The Homepage will have a link to the "Investing" page	☑	☐		
2.5	The Homepage will have a link to the "Savings" page	☑	☐		
2.6	The Homepage will have a link to the "Credit" page	☑	☐		

ID	Requirement	Requirement Being Met?	Unit Test Passing?	Method*	D&T
3	Page Structure(About)	☐	☐		
3.1	The about page will display the mission statement	☐	☐		
3.2	The about page will display the site story	☐	☐		
3.3	The about page will display the terms and conditions	☐	☐		
3.4	The about page will display the privacy policy	☐	☐		
3.5	The about page will display links to social media sites	☐	☐		
3.6	The about page will display future features	☐	☐		
3.7	The about page will display Frequently asked questions	☐	☐		
3.8	The about page will display a photo disclaimer	☐	☐		
4	Page Structure(Sign-Up)	☐	☐		
4.1	The Sign-up page will have an active form field	☐	☐		
4.1.1	The field will have a First Name box	☐	☐		
4.1.2	The field will have a Last Name box	☐	☐		
4.1.3	The form field will have a User Name box	☐	☐		
4.1.4	The form field will have a Email box	☐	☐		
4.1.5	The form field will have a Password box	☐	☐		
4.1.6	The form field will have a Phone Number box	☐	☐		
4.1.7	The fields give err message when submitted null	☐	☐		
4.1.8	The fields give an err message when filled incorrectly	☐	☐		
5	Page Structure(Log-in)	☐	☐		
5.1	The Log-In page will have an active form field	☐	☐		
5.1.1	The form field will have a User Name box	☐	☐		
5.1.2	The form field will have a Password box	☐	☐		
5.1.3	The form fields give err message when required are null	☐	☐		
5.1.4	The fields give an err message when filled incorrectly	☐	☐		

**Note I= inspection, D= Demonstration, T=Test, A=Analysis*

T&D = Time and Date