Usability test plan

What will be tested:

* Functional requirements
  + User register
  + User login
  + User logout
  + Functional timer
  + Timer and break notifications
  + Adding subjects/tasks
  + Deleting subjects/tasks
  + Recording length of time
  + Report of time spent on subjects/tasks
  + Tutorial
  + Settings
    - Changing timer type, length and notification preferences
    - Changing user/account details
    - Changing subject/task names
* Non-functional requirements
  + Reliability and responsiveness
  + Safety
  + Security
  + Legibility
  + Intuitiveness and consistency
  + Accessibility and usability
  + Attractiveness
  + Affordance
  + Tolerance and robustness
  + Maintainability and portability
* User interfaces
  + Login page
  + Register page
  + Main (home) page
  + Timer page
  + Timer done page
  + Report (view statistics) page
  + Help page
  + Settings pages
    - Settings (timer) page
    - Settings (account) page
    - Settings (subjects/tasks) page

Test requirements:

When to conduct the tests: sometime after school, between 08/08/2018 and 10/08/18

Time taken to conduct the tests: Estimated 10 – 15 minutes

Equipment required:

* computer running a local web and database server and the solution to be tested
* a physical stopwatch or a stopwatch app
* the usability instrument
* the questionnaire

Environment to test in: Tested on the developer’s device that runs the solution to be tested and it’s required database and web servers (using XAMPP). Tested in a distraction-free environment.

The usability instrument is used to test all of the solution’s features, to test whether the all the functional requirements listed in the SRS are met. During the user testing, test participants will be given the same procedures/instructions verbally to test the item tested and will perform them to their best ability. Using the test metrics (discussed further below), the person conducting the test will decide whether the item tested successfully meets the requirements. Any comments or observations the test participant or the person conducting the test has will be written in the comments section of the usability instrument. If a testing condition is not met, or if the test participant makes a negative comment or a suggestion to improve the software solution during the usability test, the comment will also be written in the ‘suggestions for improvement’ box located at the end of the questionnaire.

See below for the usability instrument.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** | **Item tested** | **Procedure/instructions** | **Success?** | **Comments** |
| **1** | **Register function – REQ1**  (User opens solution and registers a new account) | Load solution (opens login page)  Click on register link  Enter in a new username and password  User is redirected to the main (home) page  Time taken to complete task |  |  |
| **2** | **Help page – REQ10**  (User views help page) | Click on link to help page  Load help page  Scroll through and read relevant information |  |  |
| **3** | **Settings – REQ11**  (User edits their account details) | Click on settings (timer) page, then on settings (account) page  Load settings (account) page  Edit at least one field (username, password or display name)  Click ‘save changes’ button  Time taken to complete task |  |  |
| **4** | **User logout – REQ3, User login – REQ2**  (User logs out and logs back in) | Click on link to logout  User is redirected to login page  Enter in username and password  User is redirected to the main (home) page  Time taken to complete task |  |  |
| **5** | **Main page – adding subjects/tasks - REQ6**  (User goes back to the main page and adds in their subjects/tasks) | Click on link to main page  Load main page  Enter subjects/tasks  Time taken to complete task |  |  |
| **6** | **Main page – deleting subjects/tasks – REQ7**  (User deletes at least one subject/task) | Load main page  Delete at least one subject/task  Time taken to complete task |  |  |
| **7** | **Settings – REQ11**  (User manages their subjects/task) | Click on link to settings (timer) page, then on settings (manage subject/task) page  Load settings (manage subject/task) page  Edit the name of at least one subject/task  Delete at least one subject/task  Time taken to complete task |  |  |
| **8** | **Functional timer – REQ4, Settings – REQ11**  (User changes default timer settings) | Load settings (timer) page  Adjust timer settings to countdown timer, 1 min, timer sounds and notifications on  Click ‘save changes’ button  Time taken to complete task |  |  |
| **9** | **Functional timer – REQ4, Recording length of time – REQ8**  (User records the time spent on a subject using the timer) | Load timer page  Click on the start button  Click on the stop button  Click on the reset button  Click on the start button again and wait until timer runs out |  |  |
| **10** | **Timer and break notifications – REQ5**  (Timer sounds and push notifications appear when timer runs out) | Wait for timer to run out  Timer sounds  Push notifications appear briefly  Click on any button to stop the timer ring  Click on ‘done’ button |  |  |
| **11** | **Recording length of timer – REQ8**  (User goes to the timer done page to confirm the length of time spent) | Load timer done page  Check if value suggested by the solution is accurate  Click ‘yes’ to confirm length of time  User is redirected to main (home) page  Load main (home) page  Check if length of time specified on the subject/task list matches with the length of time the user had confirmed.  Time taken to complete task  Repeat the process by loading the timer done page but manually inputting 10 minutes of time instead of clicking the ‘yes’ button to confirm the length of time  User is redirected to main (home) page  Load main (home) page  Check if length of time specified on the subject/task list matches with the length of time the user had confirmed.  Time taken to complete task |  |  |
| **12** | Sorting subjects/tasks  (User sorts their subject/task list) | Load main (home) page  Select ‘Name: A-Z’ sorting  Select ‘Name: Z-A’ sorting  Select ‘Time: highest-lowest sorting’  Select ‘Time: lowest-highest’ sorting’  Select user’s preferred sorting |  |  |
| **13** | **Report of time spent on subjects/tasks – REQ9**  (User views the report) | Click on link to the ‘view statistics’ page (report)  Load view statistics page  Check if current date and record is correct  Click on ‘back one day’ button and check if date and record is correct  Click on ‘back one day’ button a few more times and check if date and record is correct  Click on ‘forward one day’ button a few times and check if current date and record is correct again  Click on ‘today’ button and check if current date and record is correct |  |  |

After the test participants have completed the usability testing, they will be given a questionnaire to fill out which tests the solution’s effectiveness and non-functional requirements. Questions 1, 2, 4 and 9 of the questionnaire measures the solution’s reliability and responsiveness (with a focus on meeting user’s expectations) – NREQ1, question 5 measures the solution’s legibility – NREQ4, question 6 measures the solution’s intuitiveness and consistency – NREQ5, questions 6 and 7 measures the accessibility and usability of the solution – NREQ6, question 8 measures the attractiveness of the solution – NREQ7, question 9 measures the tolerance and robustness of the solution – NREQ9. The other non-functional requirements (safety – NREQ2, security – NREQ3, affordance – NREQ8 and maintainability and portability – NREQ10) can be shown through the usability testing. Refer to the test metrics for the questionnaire that is going to be used.

Test participants:

The test participants will mostly include VCE students as they are representative of the solution’s initial target audience. If current VCE students are not available, other younger students and recently graduated VCE students will be involved in the testing instead as they are also potential users of the solution. Both sexes will be involved in the usability test to get a range of different perspectives on the solution.

Possible challenges that some individuals in the target demographic might be encountered with include:

* poor English skills – trouble understanding the text used in the solution, trouble understanding how to use the solution
* inexperience with technology - trouble understanding how to use the solution effectively
* motor impairments - trouble interacting with the elements in the solution
* visual impairments – trouble viewing, understanding and interacting with the solution

Test metrics:

Success for each testing condition in the usability instrument is decided by the following conditions below:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NO** | **Item tested** | **Success** | **Partial success** | **Failure** |
| **1** | **Register function – REQ1**  (User opens solution and registers a new account) | - All links/buttons clicked work  - All relevant pages load correctly under 3 seconds  - Username and password are validated  - If necessary, the correct error messages are displayed  - User is redirected to the main (home) page after registering | - All links/buttons clicked work  - The relevant pages load with some elements out of place/missing. Pages load in under 10 seconds.  - Username and/or password are validated.  - If necessary, most of the correct error messages are displayed or error messages appear eventually (within 2 refreshes of the page)  - User is redirected to the main (home) page after registering most of the time/user is redirected to the login page | - Links/buttons clicked do not work  - The incorrect pages load, most elements are out of place/missing, the pages take over 10 seconds to load or the pages fail to load  - Username and/or password are not validated.  - Error messages do not appear  - User is not redirected to the main (home) page after registering (button does nothing) |
| **2** | **Help page – REQ10**  (User views help page) | - All links/buttons clicked work  - The relevant pages load correctly under 3 seconds  - All necessary information is displayed | - Links/buttons clicked work most of the time  - The relevant pages load with some elements out of place/missing. Pages load in under 10 seconds  - Most necessary information is displayed (greater than 80%) | - Links/buttons clicked do not work  - The incorrect pages load, most elements are out of place/missing, the pages take over 10 seconds to load or the pages fail to load  - Most necessary information is missing |
| **3** | **Settings – REQ11**  (User edits their account details) | - All links/buttons clicked work  - The relevant pages load correctly under 3 seconds  - When the user makes changes to their account, the changes take place immediately (are seen to be auto filled in the form)  - Confirmation messages appear  - If necessary, the correct error messages are displayed | - Links/buttons clicked work most of the time  - The relevant pages load with some elements out of place/missing. Pages load in under 10 seconds  - When the user makes changes to their account, the changes eventually take place (within 2 refreshes of the page)  - Most confirmation messages are displayed or appear eventually  - If necessary, most error messages are displayed or appear eventually | - Links/buttons clicked do not work  - The incorrect pages load, most elements are out of place/missing, the pages take over 10 seconds to load or the pages fail to load  - Confirmation messages do not appear  - Error messages do not appear |
| **4** | **User logout – REQ3, User login – REQ2**  (User logs out and logs back in) | - All links/buttons clicked work  - The relevant pages load correctly under 3 seconds  - User is redirected to the login page after logging out  - Username and password are validated  - If necessary, the correct error messages are displayed  - User is redirected to the main (home) page after logging in | - Links/buttons clicked work most of the time  - The relevant pages load with some elements out of place/missing. Pages load in under 10 seconds  - User is redirected to the login page after logging out most of the time or are redirected to the login page eventually (within 2 clicks of the logout button)  - Username and/or password are validated.  - If necessary, most of the correct error messages are displayed or error messages appear eventually (within 2 refreshes of the page)  - User is redirected to the main (home) page after logging in most of the time | - Links/buttons clicked do not work  - The incorrect pages load, most elements are out of place/missing, the pages take over 10 seconds to load or the pages fail to load  - User is not redirected to the main (home) page after logging in (button does nothing)  - Username and/or password are not validated.  - Error messages do not appear |
| **5** | **Main page – adding subjects/tasks - REQ6**  (User goes back to the main page and adds in their subjects/tasks) | - All links/buttons clicked work  - The relevant pages load correctly under 3 seconds  - User inputs are validated  - After adding in subjects/tasks, the changes take place immediately  - If necessary, the correct error messages are displayed | - Links/buttons clicked work most of the time  - The relevant pages load with some elements out of place/missing. Pages load in under 10 seconds  - After adding in subjects/tasks, the changes eventually take place (within 2 refreshes of the page)  - If necessary, most of the correct error messages are displayed or error messages appear eventually (within 2 refreshes of the page) | - Links/buttons clicked do not work  - The incorrect pages load, most elements are out of place/missing, the pages take over 10 seconds to load or the pages fail to load  - User cannot add subjects/tasks  - Error messages do not appear |
| **6** | **Main page – deleting subjects/tasks – REQ7**  (User deletes at least one subject/task) | - All links/buttons clicked work  - The relevant pages load correctly under 3 seconds  - User inputs are validated  - User must confirm their actions before deleting a subject/task through an alert message. They can cancel their action.  - After deleting a subject/task, the changes take place immediately  - If necessary, the correct error messages are displayed | - Links/buttons clicked work most of the time  - The relevant pages load with some elements out of place/missing. Pages load in under 10 seconds  - User must confirm their actions before deleting a subject/task through an alert message most of the time. They can cancel their action most of the time.  - After deleting subject/task, the changes eventually take place (within 2 refreshes of the page)  - If necessary, most of the correct error messages are displayed or error messages appear eventually (within 2 refreshes of the page) | - Links/buttons clicked do not work  - The incorrect pages load, most elements are out of place/missing, the pages take over 10 seconds to load or the pages fail to load  - User cannot delete subjects/tasks  - Error messages do not appear |
| **7** | **Settings – REQ11**  (User manages their subjects/task) | - All links/buttons clicked work  - The relevant pages load correctly under 3 seconds  - User must confirm their actions before deleting a subject/task through an alert message. They can cancel their action.  - When the user makes changes to their subject/task list, the changes take place immediately (are seen to be auto filled in the form)  - Confirmation messages appear  - If necessary, the correct error messages are displayed | - Links/buttons clicked work most of the time  - The relevant pages load with some elements out of place/missing. Pages load in under 10 seconds  - User must confirm their actions before deleting a subject/task through an alert message most of the time. They can cancel their action most of the time.  - When the user makes changes to their account, the changes eventually take place (within 2 refreshes of the page)  - Most confirmation messages are displayed or appear eventually  - If necessary, most error messages are displayed or appear eventually (within 2 refreshes of the page) | - Links/buttons clicked do not work  - The incorrect pages load, most elements are out of place/missing, the pages take over 10 seconds to load or the pages fail to load  - User cannot delete subjects/tasks  - User cannot edit the subject/task names  - Confirmation messages do not appear  - Error messages do not appear |
| **8** | **Functional timer – REQ4, Settings – REQ11**  (User changes default timer settings) | - All links/buttons clicked work  - The relevant pages load correctly under 3 seconds  - When the user makes changes to their timer preferences, the changes take place immediately (are seen to be auto filled in the form)  - If the user selects the timer type ‘countup’, the countdown related settings are hidden. If the user selects the timer type ‘countdown’ the countdown related settings are shown.  - Confirmation messages appear  - If necessary, the correct error messages are displayed | - Links/buttons clicked work most of the time  - The relevant pages load with some elements out of place/missing. Pages load in under 10 seconds  - When the user makes changes to their timer preferences, the changes eventually take place (within 2 refreshes of the page)  - Countdown related settings are shown, regardless of the user’s preferences.  - Most confirmation messages are displayed or appear eventually  - If necessary, most error messages are displayed or appear eventually (within 2 refreshes of the page) | - Links/buttons clicked do not work  - The incorrect pages load, most elements are out of place/missing, the pages take over 10 seconds to load or the pages fail to load  - User cannot edit their timer preferences  - Confirmation messages do not appear  - Error messages do not appear |
| **9** | **Functional timer – REQ4, Recording length of time – REQ8**  (User records the time spent on a subject using the timer) | - All links/buttons clicked work  - The relevant pages load correctly under 3 seconds  - The buttons controlling the timer affect the timer immediately  - The time measured is accurate | - Links/buttons clicked work most of the time  - The relevant pages load with some elements out of place/missing. Pages load in under 10 seconds  - The buttons controlling the timer affect the timer eventually (under 3 seconds)  - The time measured is somewhat accurate | - Links/buttons clicked do not work  - The incorrect pages load, most elements are out of place/missing, the pages take over 10 seconds to load or the pages fail to load  - The buttons controlling the timer do not affect the timer  - The time measured is not accurate |
| **10** | **Timer and break notifications – REQ5**  (Timer sounds and push notifications appear when timer runs out) | - All links/buttons clicked work  - The relevant pages load correctly under 3 seconds  - When timer runs out, a looping sound is played immediately  - When timer runs out, a push notification is displayed briefly  - The sound stops when the user clicks on any button on the timer  Wait for timer to run out  Timer sounds  Push notifications appear briefly  Click on any button to stop the timer ring  Click on ‘done’ button | - Links/buttons clicked work most of the time  - The relevant pages load with some elements out of place/missing. Pages load in under 10 seconds  - When timer runs out, a looping sound starts to play after 2 seconds  - When timer runs out, a push notification is displayed for a while/for a really limited time  - The sound stops when the user clicks on the ‘start over button’ or when the user goes to a different page | - Links/buttons clicked do not work  - The incorrect pages load, most elements are out of place/missing, the pages take over 10 seconds to load or the pages fail to load  - When the timer runs out, no sound is played  - When the timer runs out, no push notifications are displayed  - The sound does not stop/the sound only plays once and does not loop |
| **11** | **Recording length of timer – REQ8**  (User goes to the timer done page to confirm the length of time spent) | - All links/buttons clicked work  - The relevant pages load correctly under 3 seconds  - The time measured is accurate  - The correct time value is added to the subject/task immediately after confirming the length of time specified/manually inputting the length of time  - User is redirected to the main (home) page after confirming the length of time specified/manually inputting the length of time spent on a subject/task | - Links/buttons clicked work most of the time  - The relevant pages load with some elements out of place/missing. Pages load in under 10 seconds  - The time measured is somewhat accurate  - The correct time value is eventually added to the subject/task after confirming the length of time specified/manually inputting the length of time (within 2 refreshes of the page)  - User is eventually redirected to the main (home) page most of the time after confirming the length of time specified/manually inputting the length of time spent on a subject/task | - Links/buttons clicked do not work  - The incorrect pages load, most elements are out of place/missing, the pages take over 10 seconds to load or the pages fail to load  - The time measured is not accurate  - The correct time value is not added to the subject/task  - User is not redirected to the main (home) page |
| **12** | Sorting subjects/tasks  (User sorts their subject/task list) | - The relevant pages load correctly under 3 seconds  - After the user selects a type of sorting, the subject/task list is sorted immediately  - The sorting is accurate  - The sorting is still applied to the subject/task list even after a refresh of the page/going on a different age | - The relevant pages load with some elements out of place/missing. Pages load in under 10 seconds  - After the user selects a type of sorting, the subject/task list is sorted eventually (within 2 refreshes of the page)  - The sorting is mostly accurate  - The sorting is still applied to the subject/task list even after a refresh of the page/going on a different age most of the time | - The incorrect pages load, most elements are out of place/missing, the pages take over 10 seconds to load or the pages fail to load  - The subject/task list cannot be sorted  - The sorting is not accurate  - The sorting is not applied to the subject/task list after refreshing the page/going on a different page |
| **13** | **Report of time spent on subjects/tasks – REQ9**  (User views the report) | - All links/buttons clicked work  - The relevant pages load correctly under 3 seconds  - All dates and records displayed are correct | - Links/buttons clicked work most of the time  - The relevant pages load with some elements out of place/missing. Pages load in under 10 seconds  - Most dates and records displayed are correct (less than 20% are incorrect) | - Links/buttons clicked do not work  - The incorrect pages load, most elements are out of place/missing, the pages take over 10 seconds to load or the pages fail to load  - The dates and records displayed are inaccurate (greater than 20% are incorrect) |

**The effectiveness of the solution will also be tested using the questionnaire/feedback form below.**

**Questionnaire/feedback**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Question | Strongly agree | Agree | Neutral | Disagree | Strongly disagree | |
| The Pomodoro Technique (which the solution uses) is helpful in boosting productivity, preventing overworking and helping to maintain focus |  |  |  |  |  | |
| The solution is helpful |  |  |  |  |  | |
| I would choose to use the solution rather than to use the traditional timer, pen and paper method (using a timer, recording the times manually) when using the Pomodoro technique |  |  |  |  |  | |
| The solution does what it is expected to do |  |  |  |  |  | |
| All elements/text were legible and easy to read |  |  |  |  |  | |
| It was easy to figure out how to use the solution |  |  |  |  |  | |
| The solution is easy to use |  |  |  |  |  | |
| The solution is pleasant to look at |  |  |  |  |  | |
| The solution is reliable (doesn’t crash) |  |  |  |  |  | |
| I would continue using this solution |  |  |  |  |  | |
| Suggestions for improvements/feedback |  | | | | |