Introduction

This test plan shall ensure the functionality of the entire computer builder website from front to back. The three main parts of this website are the web scraping, database, and website. Each part will be tested thoroughly to keep the website running efficiently since each part depends upon the others. For the web scraping part, the goal is to test each individual function to verify that the data being pulled is up to date, relevant, and accurate. The goal of database testing is to check that the information obtained from web scraping is stored correctly and can be pulled efficiently by the website. While testing the website, the goal is to ensure that customers can easily navigate the website and purchase a computer with no hassle.

Approach

The following testing is designed to assess the reliability and speed of the website from front to back. These tests will include function calls, button clicks, and data insertion/deletion. The test method that will be used is white box testing because the tester knows all the internal components of the product. These tests will be executed manually due to multiple moving parts.

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| **Test Case ID** | **1** | **Test Case Description** | Check database connection | | | |
| **Tester's Name** | | Nate | **Test Date** | 04/01/2024 | | |
| **S #** | | **Prerequisites** | | **S #** | **Test Data** | | |
| 1 | | MySQL Database | | 1 | Host = localhost | | |
| 2 | | Web-scraping Program | | 2 | User = root | | |
| 3 | |  | | 3 | Password = \*\*\*\*\*\* | | |
| 4 | |  | | 4 | Database = ComputerParts | | |
| **Step #** | | **Step Details** | **Expected Results** | | **Actual Results** | **Pass/ Fail / Not Executed /**  **Suspended** |
| 1 | | Launch web-scraping program | You are connected | | You are connected | Pass |
| 2 | | Wait for program to finish execution | You are disconnected | | You are disconnected | Pass |
| 3 | |  |  | |  |  |

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| **Test Case ID** | **2** | **Test Case Description** | Check that all records are deleted from each table in the database | | | |
| **Tester's Name** | | Nate | **Test Date** | 04/01/2024 | | |
| **S #** | | **Prerequisites** | | **S #** | **Test Data** | |
| 1 | | MySQL database | | 1 | Table full of data | |
| 2 | | Web-scraping program | | 2 |  | |
| 3 | |  | | 3 |  | |
| **Step #** | | **Step Details** | **Expected Results** | | **Actual Results** | **Pass/ Fail / Not Executed /**  **Suspended** |
| 1 | | Run web scraper to delete all records in each table | Each table should be empty and no error | | No error | Pass |
| 2 | | Run MySQL query to show all records in each table | Each query should return empty set | | MySQL query returned “empty set” | Pass |
| 3 | |  |  | |  |  |

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| **Test Case ID** | **3** | **Test Case Description** | Check that records are inserted properly into the according table | | | |
| **Tester's Name** | | Nate | **Test Date** | 04/01/2024 | | |
| **S #** | | **Prerequisites** | | **S #** | **Test Data** | |
| 1 | | MySQL Database | | 1 | Name (varchar 200) | |
| 2 | | Web-scraping Program | | 2 | Price (decimal(6,2)) | |
| 3 | |  | | 3 | table | |
| 4 | |  | | 4 | Insert into query | |
| **Step #** | | **Step Details** | **Expected Results** | | **Actual Results** | **Pass/ Fail / Not Executed /**  **Suspended** |
| 1 | | Run web scraper into query on table | Records inserted into table | | Records are inserted properly into appropriate table | Pass |
| 2 | | Run a select all query on table | New record should be in the table | | MySQL query returned all part names and price inserted | Pass |
| 3 | |  |  | |  |  |

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| **Test Case ID** | **4** | **Test Case Description** | Check that main function runs on a 24hr timer | | | |
| **Tester's Name** | | Nate | **Test Date** | 04/01/2024 – 04/02/2024 | | |
| **S #** | | **Prerequisites** | | **S #** | **Test Data** | |
| 1 | | MySQL Database | | 1 | URLs | |
| 2 | | Web-scraping Program | | 2 |  | |
| 3 | | BeautifulSoup library | | 3 |  | |
| **Step #** | | **Step Details** | **Expected Results** | | **Actual Results** | **Pass/ Fail / Not Executed /**  **Suspended** |
| 1 | | Run main.py | You are connected | | You are connected | Pass |
| 2 | | Wait for disconnect message | You are disconnected | | You are disconnected | Pass |
| 3 | | Keep program running for 24hrs | You are connected, you are disconnected | | PC shutoff before 24hr timer | Suspended |

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| **Test Case ID** | **5** | **Test Case Description** | When the submit button is clicked, the website reroutes to the checkout page | | | |
| **Tester's Name** | | Nate | **Test Date** | 04/01/2024 | | |
| **S #** | | **Prerequisites** | | **S #** | **Test Data** | |
| 1 | | MySQL Database | | 1 | Part names | |
| 2 | | Web-scraping Program | | 2 | Part prices | |
| 3 | | Website | | 3 |  | |
| 4 | |  | | 4 |  | |
| **Step #** | | **Step Details** | **Expected Results** | | **Actual Results** | **Pass/ Fail / Not Executed /**  **Suspended** |
| 1 | | Go to pcbuilder page | Pcbuilder page loads | | Pcbuilder loaded properly | Pass |
| 2 | | Select desired computer parts | Price is updated and names of selected parts is shown | | Price update failed and selected part was shown | Fail |
| 3 | | Click the purchase button | Checkout.blade.php is redirected automatically | | User is redirected to checkout page | Pass |

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| **Test Case ID** | **6** | **Test Case Description** | Check that getProductInfo function pulls every item on each page only if it has a listed price | | | |
| **Tester's Name** | | Nate | **Test Date** | 04/01/2024 | | |
| **S #** | | **Prerequisites** | | **S #** | **Test Data** | |
| 1 | | MySQL Database | | 1 | URL | |
| 2 | | Web-scraping Program | | 2 | An empty array | |
| 3 | | BeautifulSoup library | | 3 |  | |
| **Step #** | | **Step Details** | **Expected Results** | | **Actual Results** | **Pass/ Fail / Not Executed /**  **Suspended** |
| 1 | | Call getProductInfo passing a URL as a parameter | The array is full of data where every even position in the array including 0 has is a string name and odds are prices stored as double | | Array is filled with part names and prices according to website they were scraped from | Pass |
| 2 | | Check that every iteration of the array has a price and part name | Array has no missing price or part name | | Every iteration of the array has one part name and one price | Pass |
| 3 | |  |  | |  |  |

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| **Test Case ID** | **7** | **Test Case Description** | Check that runPages function will run recursively until there are no more pages | | | |
| **Tester's Name** | | Nate | **Test Date** | 04/01/2024 | | |
| **S #** | | **Prerequisites** | | **S #** | **Test Data** | |
| 1 | | MySQL Database | | 1 | URL | |
| 2 | | Web-scraping Program | | 2 |  | |
| 3 | | BeautifulSoup library | | 3 |  | |
| **Step #** | | **Step Details** | **Expected Results** | | **Actual Results** | **Pass/ Fail / Not Executed /**  **Suspended** |
| 1 | | Call runPages passing a URL as the parameter | Run pages calls itself (number of pages – 1) times | | Runpages ran 5 times with 6 pages | Pass |
| 2 | |  |  | |  |  |

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| **Test Case ID** | **8** | **Test Case Description** | Check that getData function will return a string full of html code | | | |
| **Tester's Name** | | Nate | **Test Date** | 04/01/2024 | | |
| **S #** | | **Prerequisites** | | **S #** | **Test Data** | |
| 1 | | MySQL Database | | 1 | URL | |
| 2 | | Web-scraping Program | | 2 |  | |
| 3 | | BeautifulSoup library | | 3 |  | |
| 4 | |  | | 4 |  | |
| **Step #** | | **Step Details** | **Expected Results** | | **Actual Results** | **Pass/ Fail / Not Executed /**  **Suspended** |
| 1 | | Call getData function passing URL as a parameter | Returns a string containing all the html code from the requested URL | | Only requested HTML data was returned by getData function | Pass |
| 2 | |  |  | |  |  |
| 3 | |  |  | |  |  |
| 4 | |  |  | |  |  |

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| **Test Case ID** | **9** | **Test Case Description** | Check that the price updates as user selects different parts | | | |
| **Tester's Name** | | Nate | **Test Date** | 04/01/2024 | | |
| **S #** | | **Prerequisites** | | **S #** | **Test Data** | |
| 1 | | MySQL Database | | 1 | Part names | |
| 2 | | Web-scraping Program | | 2 | Part prices | |
| 3 | | Website | | 3 |  | |
| 4 | |  | | 4 |  | |
| **Step #** | | **Step Details** | **Expected Results** | | **Actual Results** | **Pass/ Fail / Not Executed /**  **Suspended** |
| 1 | | Go to website | Website loads in browser | | Website is visible on local machine | Pass |
| 2 | | Change a part | Total price updates to reflect change in price | | Price was not updated | Fail |
| 3 | | Change a different part | Total price updates to reflect change in price | | Price was updated | Pass |
| 4 | |  |  | |  |  |

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| **Test Case ID** | **10** | **Test Case Description** | Check that the website dropdowns populate with everything in the appropriate table | | | |
| **Tester's Name** | | Nate | **Test Date** | 04/01/2024 | | |
| **S #** | | **Prerequisites** | | **S #** | **Test Data** | |
| 1 | | MySQL Database | | 1 | Part names | |
| 2 | | Web-scraping Program | | 2 | Part prices | |
| 3 | | Website | | 3 |  | |
| 4 | |  | | 4 |  | |
| **Step #** | | **Step Details** | **Expected Results** | | **Actual Results** | **Pass/ Fail / Not Executed /**  **Suspended** |
| 1 | | Run web-scraping program | Database is updated with fresh data | | You are connected then you are not connected | Pass |
| 2 | | Go to website | Website loads in browser | | Website is visible on local machine | Pass |
| 3 | | Select a part dropdown menu | Every part listed in that corresponding table is shown to the user | | All parts in MySQL database populate the dropdown box | Pass |
| 4 | |  |  | |  |  |

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| **Test Case ID** | **11** | **Test Case Description** | New users are able to register their account as long as email is valid | | | |
| **Tester's Name** | | Nate | **Test Date** | 04/01/2024 | | |
| **S #** | | **Prerequisites** | | **S #** | **Test Data** | |
| 1 | | MySQL Database | | 1 | Name | |
| 2 | | Website | | 2 | Email | |
| 3 | | Login Route | | 3 | Password | |
| 4 | |  | | 4 | Confirm Password | |
| **Step #** | | **Step Details** | **Expected Results** | | **Actual Results** | **Pass/ Fail / Not Executed /**  **Suspended** |
| 1 | | Go to register page | Website redirects to register page | | Redirected to register page | Pass |
| 2 | | Fill in input boxes | Errors pop up if applicable | | Bad email displayed error | Pass |
| 3 | | Click register | Account is created in database and website redirects to home page | | Account is created in database and user is redirected to home page | Pass |
| 4 | |  |  | |  |  |

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| **Test Case ID** | **12** | **Test Case Description** | Returning users are able to login if account is already created | | | |
| **Tester's Name** | | Nate | **Test Date** | 04/01/2024 | | |
| **S #** | | **Prerequisites** | | **S #** | **Test Data** | |
| 1 | | MySQL Database | | 1 | Email | |
| 2 | | Website | | 2 | Password | |
| 3 | |  | | 3 |  | |
| 4 | |  | | 4 |  | |
| **Step #** | | **Step Details** | **Expected Results** | | **Actual Results** | **Pass/ Fail / Not Executed /**  **Suspended** |
| 1 | | Go to login page | Website redirects to login page | | Website redirects to login page | Pass |
| 2 | | Fill in input boxes | Errors show if account isn’t in database. Otherwise no errors. | | No errors | Pass |
| 3 | | Click Login | Account is verified and user is redirected to home page. | | Account is found and website redirects to home page | Pass |
| 4 | |  |  | |  |  |