Web application to test http://computer-database.herokuapp.com/computers

Assumptions

1. Computer name is unique. There can be no duplicate entries. That is computer entries with the same "name" are not allowed.
The web application at the time of testing allows duplicate entries. So, this is by discretion considered as undesired behavior of the application.

2. Computer names are case sensitive. That is computer names "ABC1" and "abc1" are considered different computer names.
But Search i.e. "Filter by name" operation is not case sensitive.

3. In Update operation, even if no field value is updated the operation is considered successful.

4. If Delete operation is performed on an already deleted entry, it is a valid operation and the result is same as a normal delete operation.

Scope of testing

Manual	Testing Create, Read, Update and Delete operations on the computers database
Automated	Creating Automated test cases for manual testcases those are feasible to automate.

Not in Scope of this testing

Validation not checked:
For a computer entry, if the optional fields Introduced and Discontinued are filled, they should be meaningful.
That is, the date of introduction should be in the past. And if discontinued date is mentioned, it should be after introduction data.

Assumption is that duplicate computer name entries are not allowed. But, the application at the time of testing is allowing duplicate entries.
While deleting an entry with duplicates, delete should be done by identifying the last id of such duplicate entries. But, in the automation framework, the first of the duplicates will be removed.
So, deleting is being done by using name instead of id. It is because, it is not straight forward to get id of an entry. And also because duplicate entries are not to be allowed by assumption.

Performance testing

Securtiy testing

Scalability testing

Concurrency testing

Usability testing

Testcases

Pre-requisite for all testcases: Open the url "http://computer-database.herokuapp.com/computers" in a web browser. The page that opens will be referred to as HOMEPAGE in this document.

Feature	Type of test	Title	is Automated	Pre-conditions	Steps	Expected Result	Cleanup action	Test Result
Open web application	Positive	*VerifyApplicationPageTitle*	Yes		Open HOMEPAGE	Web page with tiltle "Computers database" should open.		
Create entry	Positive	OnlyComputerName	Yes	Computer name AC101 should not be present in the computers database.	1. In the HOMEPAGE click on "Add a new computer" button. 2. Fill the "Computer name" field with value "AC101" 3. Click on "Create this computer" button.	1. Message "Done! Computer AC101 has been created" should be displayed. 2. In the HOMEPAGE, fill "Filter by computer name" field with value "AC101" and click "Filter by name" button. In the result table, "AC101" should be present.	1. In the result table, click on "AC101". 2. Click on "Delete this Computer" button.	PASS
	Negative	*Computer No name*	Yes	Note the number of computers in the database.	1. In the HOMEPAGE click on "Add a new computer" button. 2. Fill the "Computer name" field with value "" 3. Click on "Create this computer" button.	1. Dialog box for "Computer name" should be highlighted in red color as it is error to exclude a required field. 2. No new computer should be added with this testcase. So, in HOMEPAGE the test case number should be same as noted before this testcase.		PASS
		Duplicate name	No	Computer name "ASCI Blue Mountain" should be present in the database.	1. In the HOMEPAGE click on "Add a new computer" button. 2. Fill the "Computer name" field with value "ASCI Blue Mountain" 3. Click on "Create this computer" button.	1. Message "Done! Computer ASCI Blue Mountain has been created" should **not** be displayed. 2. In the HOMEPAGE, fill "Filter by computer name" field with value "ASCI Blue Mountain" and click "Filter by name" button. In the result table, only one "ASCI Blue Mountain" should be present.	If new entry for "ASCI Blue Mountain" is created, then Delete it. 1. In the result table, click on "AC101". 2. Click on "Delete this Computer" button.	FAIL
		ComputerName and company	Yes	Computer name "AC102" should not be present in the database.	"1. In the HOMEPAGE click on ""Add a new computer"" button. 2. Fill the ""Computer name"" field with value "AC102" and select company as "ASUS" 3. Click on ""Create this computer"" button."	1. Message "Done! Computer AC102 has been created" should be displayed. 2. In the HOMEPAGE, fill ""Filter by computer name"" field with value ""AC102"" and click ""Filter by name"" button. In the result table, ""AC102"" should be present. with company as "ASUS".	1. In the result table, click on "AC102". 2. Click on "Delete this Computer" button.	PASS
	Positive	*ComputerName and Introduced date*	Yes	Computer name "AC103" should not be present in the database.	1. In the HOMEPAGE click on "Add a new computer" button. 2. Fill the "Computer name" field with value "AC103" and Introduced date as "1982-06-16" 3. Click on "Create this computer" button.	1. Message "Done! Computer AC103 has been created" should be displayed. 2. Search for AC103 should show it with Introduced date as "16 Jun 1982 ".	Delete entry "AC103"	PASS
		ComputerName and Discontinued date	Yes	Computer name "AC104" should not be present in the database.	1. In the HOMEPAGE click on "Add a new computer" button. 2. Fill the "Computer name" field with value "AC104" and Discontinued date as "2002-12-31" 3. Click on "Create this computer" button.	1. Message "Done! Computer AC104 has been created" should be displayed. 2. Search for AC104 should show it with Discontinued date as "31 Dec 2002 ".	Delete entry "AC104"	PASS
		ComputerName,Introduced date and Discontinued date	Yes	Computer name "AC105" should not be present in the database.	1. In the HOMEPAGE click on "Add a new computer" button. 2. Fill the "Computer name" field with value "AC105", Introduced date as "1987-12-07" and Discontinued date as "2007-02-31" 3. Click on "Create this computer" button.	1. Message "Done! Computer AC105 has been created" should be displayed. 2. Search for AC105 should show it with Introduced date as "07 Dec 1987 " and Discontinued date as "31 Feb 2007 ".	Delete entry "AC105"	PASS
		ComputerName, Introduced date and company	Yes	Computer name "AC106" should not be present in the database.	1. In the HOMEPAGE click on "Add a new computer" button. 2. Fill the "Computer name" field with value "AC106", Introduced date as "1985-08-01" and Company as "Canon" 3. Click on "Create this computer" button.	1. Message "Done! Computer AC106 has been created" should be displayed. 2. Search for AC106 should show it with Introduced date as "01 Aug 1985 " and Company as "Canon".	Delete entry "AC106"	PASS
		ComputerName, Discontinued date and company	Yes	Computer name "AC107" should not be present in the database.	1. In the HOMEPAGE click on "Add a new computer" button. 2. Fill the "Computer name" field with value "AC107", Discontinued date as "2015-08-01" and Company as "IBM" 3. Click on "Create this computer" button.	1. Message "Done! Computer AC107 has been created" should be displayed. 2. Search for AC107 should show it with Discontinued date as "01 Aug 2015 " and Company as "IBM".	Delete entry "AC107"	PASS
		AllFields (ComputerName,Introduced date, Discontinued date and company)	Yes	Computer name "AC108" should not be present in the database.	1. In the HOMEPAGE click on "Add a new computer" button. 2. Fill the "Computer name" field with value "AC108", Introduced date as "1985-08-01", Discontinued date as "2015-08-01" and Company as "Cray" 3. Click on "Create this computer" button.	1. Message "Done! Computer AC108 has been created" should be displayed. 2. Search for AC108 should show it with Introduced date as "01 Aug 1985 ", Discontinued date as "01 Aug 2015 " and Company as "Cray".	Delete entry "AC108"	PASS
		AllFields without a ComputerName	Yes	Note the number of computers in the database.	1. In the HOMEPAGE click on "Add a new computer" button. 2. Fill the "Computer name" field with empty value "", Introduced date as "1985-08-01", Discontinued date as "2015-08-01" and Company as "ASUS" 3. Click on "Create this computer" button.	1. Dialog box for "Computer name" should be highlighted in red color as it is error to exclude a required field. 2. No new computer should be added with this testcase. So, in HOMEPAGE the test case number should be same as noted before this testcase.		PASS

Category	Type	Test Case	Auto	Precondition	Steps	Expected Result	Cleanup	Status
	Negative	*Invalid Introduced date - Text*	Yes	Note the number of computers in the database. Computer name "AC109" should not be present in the database.	1. In the HOMEPAGE click on "Add a new computer" button. 2. Fill the "Computer name" field with value "AC109", Introduced date as "this is some text" 3. Click on "Create this computer" button."	1. Dialog box for "Introduced Date" should be highlighted in red color as it is error to send text in a date field. 2. No new computer should be added with this testcase. So, in HOMEPAGE the test case number should be same as noted before this testcase."		PASS
		Invalid Introduced date - month	Yes	Note the number of computers in the database. Computer name "AC110" should not be present in the database.	1. In the HOMEPAGE click on "Add a new computer" button. 2. Fill the "Computer name" field with value "AC110", Introduced date as "2009-13-07." 3. Click on "Create this computer" button."	1. Dialog box for "Introduced Date" should be highlighted in red color as it is error to send invalid month "13" for a month in the date field. 2. No new computer should be added with this testcase. So, in HOMEPAGE the test case number should be same as noted before this testcase."		PASS
	Positive	*Introduced date - Feb 29th of leap year*	Yes	Computer name "AC111" should not be present in the database.	"1. In the HOMEPAGE click on ""Add a new computer"" button. 2. Fill the ""Computer name"" field with value ""AC111"", Introduced date as ""2004-02-29"" 3. Click on ""Create this computer"" button."""	1. Message "Done! Computer AC111 has been created" should be displayed. 2. Search for AC111 should show it with Introduced date as "29 Feb 2004 "	Delete entry "AC111"	PASS
	Negative	*Invalid Introduced date - Feb 29th of non-leap year*	Yes	Note the number of computers in the database. Computer name "AC112" should not be present in the database.	1. In the HOMEPAGE click on "Add a new computer" button. 2. Fill the "Computer name" field with value "AC112", Introduced date as "2009-02-29" 3. Click on "Create this computer" button."	1. Dialog box for "Introduced Date" should be highlighted in red color as it is error to send invalid day "29" for February month of a non-leap year 2009 - in the date field. 2. No new computer should be added with this testcase. So, in HOMEPAGE the test case number should be same as noted before this testcase."		PASS
	Positive	*ComputerName with special characters*	Yes	Computer name "!@#$" should not be present in the database.	1. In the HOMEPAGE click on "Add a new computer" button. 2. Fill the "Computer name" field with value "!@#$" 3. Click on "Create this computer" button.	1. Message "Done! Computer !@#$ has been created" should be displayed. 2. In the HOMEPAGE, fill "Filter by computer name" field with value "!@#$" and click "Filter by name" button. In the result table, "!@#$" should be present.	1. In the result table, click on "!@#$". 2. Click on "Delete this Computer" button.	PASS
	Negative	*Invalid Discontinued date - Text*	Yes	Note the number of computers in the database. Computer name "AC113" should not be present in the database.	1. In the HOMEPAGE click on "Add a new computer" button. 2. Fill the "Computer name" field with value "AC113", Discontinued date as "random text" 3. Click on "Create this computer" button."	1. Dialog box for "Discontinued Date" should be highlighted in red color as it is error to send text in a date field. 2. No new computer should be added with this testcase. So, in HOMEPAGE the test case number should be same as noted before this testcase."		PASS
		Invalid Discontinued date - day	Yes	Note the number of computers in the database. Computer name "AC114" should not be present in the database.	1. In the HOMEPAGE click on "Add a new computer" button. 2. Fill the "Computer name" field with value "AC114", Introduced date as "2009-03-37" 3. Click on "Create this computer" button."	1. Dialog box for "Introduced Date" should be highlighted in red color as it is error to send invalid month "37" for a day in the date field. 2. No new computer should be added with this testcase. So, in HOMEPAGE the test case number should be same as noted before this testcase."		PASS
	Positive	*Discontinued date - Feb 29th of leap year*	Yes	Computer name "AC115" should not be present in the database.	1. In the HOMEPAGE click on "Add a new computer" button. 2. Fill the "Computer name" field with value "AC115", Introduced date as "1996-02-29" 3. Click on "Create this computer" button."	1. Message "Done! Computer AC115 has been created" should be displayed. 2. Search for AC115 should show it with Introduced date as "29 Feb 1996 "	Delete entry "AC115"	PASS
	Negative	*Invalid Discontinued date - Feb 29th of non-leap year*	Yes	Note the number of computers in the database. Computer name "AC116" should not be present in the database.	1. In the HOMEPAGE click on "Add a new computer" button. 2. Fill the "Computer name" field with value "AC116", Discontinued Date as "1999-02-29" 3. Click on "Create this computer" button."	1. Dialog box for "Discontinued Date" should be highlighted in red color as it is error to send invalid day "29" for February month of a non-leap year 1999 - in the date field. 2. No new computer should be added with this testcase. So, in HOMEPAGE the test case number should be same as noted before this testcase."		PASS
	Positive	*Cancel add operation*	Yes	Note the number of computers in the database. Computer name "AC117" should not be present in the database.	1. In the HOMEPAGE click on "Add a new computer" button. 2. Fill the "Computer name" field with value "AC117" 3. Click on "Cancel" button.	1. Search for AC117 should show not it. 2. No new computer should be added with this testcase. So, in HOMEPAGE the test case number should be same as noted before this testcase."		PASS
		Computer name in lowercase	No	Computer name "ac101" should not be present in the computers database.	1. In the HOMEPAGE click on "Add a new computer" button. 2. Fill the "Computer name" field with value "ac101" 3. Click on "Create this computer" button.	1. Message "Done! Computer ac101 has been created" should be displayed. 2. In the HOMEPAGE, fill "Filter by computer name" field with value "ac101" and click "Filter by name" button. In the result table, "ac101" should be present.	1. In the result table, click on "ac101". 2. Click on "Delete this Computer" button.	PASS
Read entry	Positive	*Existing computer name*	Yes	Computer name "AR101" should **be** present in the computers database. If not present, Create it.	In the HOMEPAGE, search for "AR101" using "Filter by name".	In the search result table, the entry with computer name "AR101" should be present.	Delete entry "AR101"	PASS
	Negative	*Non-existing computer name*	Yes	Computer name "AR102" should not be present in the computers database.	In the HOMEPAGE, search for "AR102" using "Filter by name".	In the serach result, should show no entries and it should display message "Nothing to display".		PASS
		Entry without any computer name	Yes	Note the number of computers in the database.	In the HOMEPAGE, search for "" using "Filter by name".	In the search result table, all the entries in the computer database should be present. Number of entries should be same as noted before test case.		PASS
		Computer name with Introduced date	Yes	Computer name "AR103" with Introduced date "2001-07-13" should be present in the computers database. If not present, Create it.	In the HOMEPAGE, search for "AR103" using "Filter by name".	In the search result table, the entry with computer name "AR103" with Introduced date "2001-07-13" should be present.	Delete entry "AR103"	PASS
		Computer name with Discontinued date	Yes	Computer name "AR104" with Discontinued date "2001-07-13" should be present in the computers database. If not present, Create it.	In the HOMEPAGE, search for "AR104" using "Filter by name".	In the search result table, the entry with computer name "AR104" with Discontinued date "2001-07-13" should be present.	Delete entry "AR104"	PASS
	Positive	Computer name with Introduced date and Discontinued date	Yes	Computer name "AR105" with Introduced date "1987-09-15", Discontinued date "2001-07-13" should be present in the computers database. If not present, Create it.	In the HOMEPAGE, search for "AR105" using "Filter by name".	In the search result table, the entry with computer name "AR105" with Introduced date "1987-09-15", and Discontinued date "2001-07-13" should be present.	Delete entry "AR105"	PASS
		Computer name with Introduced date and Company	Yes	Computer name "AR106" with Introduced date "2001-07-13" and Company "ACER" should be present in the computers database. If not present, Create it.	In the HOMEPAGE, search for "AR106" using "Filter by name".	In the search result table, the entry with computer name "AR106" with Introduced date "2001-07-13" and Company "ACER" should be present.	Delete entry "AR106"	PASS
		Computer name with Discontinued date and Company	Yes	Computer name "AR107" with Discontinued date "2001-07-13" and Company "Intel" should be present in the computers database. If not present, Create it.	In the HOMEPAGE, search for "AR107" using "Filter by name".	In the search result table, the entry with computer name "AR107" with Discontinued date "2001-07-13" and Company "Intel" should be present.	Delete entry "AR107"	PASS
		Computer name with Company	Yes	Computer name "AR108" with Company "Thinking Machines" should be present in the computers database. If not present, Create it.	In the HOMEPAGE, search for "AR108" using "Filter by name".	In the search result table, the entry with computer name "AR108" with Company "Thinking Machines" should be present.	Delete entry "AR108"	PASS
		Computer name special characters	Yes	Computer name "!@&afda32323$~" should be present in the computers database. If not present, Create it.	In the HOMEPAGE, search for "!@&afda32323$~" using "Filter by name".	In the search result table, the entry with computer name "!@&afda32323$~" should be present.	Delete entry "!@&afda32323$~"	PASS
Update entry	Positive	*Modify company*	Yes	Computer name "AM101" should be present in the database. If not present, Create it.	1. In the HOMEPAGE, search for "AM101" using "Filter by name". 2. In the result table, locate Computer name "AM101" and click on it. 3. Modify Company field to "Cray" and Click "Save this computer" button.	1. Message "Done! Computer AM101 has been updated" should be displayed. 2. Search for AM101 should show the entry with company name 'Cray'	Delete entry "AM101"	PASS
	Negative	*No update*	Yes	Computer name "AM102" should be present in the database. If not present, Create it.	1. In the HOMEPAGE, search for "AM102" using "Filter by name". 2. In the result table, locate Computer name "AM102" and click on it. 3. Click "Save this computer" button.	1. Message "Done! Computer AC102 has been updated" should be displayed. 2. Search for AC102 should show the entry without any changes.	Delete entry "AM102"	PASS

	Positive	Cancel update operation without any update	Yes	Computer name "AM103" should be present in the database.If not present, Create it.	1. In the HOMEPAGE, search for "AM103" using "Filter by name". 2. In the result table, locate Computer name "AM103" and click on it. 3. Click "Cancel" button.	Search for AC103 should show the entry without any changes.	Delete entry "AM103"	PASS
		Change computer name	Yes	Computer name "AM104" should be present in the database.If not present, Create it.	1. In the HOMEPAGE, search for "AM104" using "Filter by name". 2. In the result table, locate Computer name "AM104" and click on it. 3. Modify Computer name to "AM104updated" and Click "Save this computer" button.	1. Message "Done! Computer AM104updated has been updated" should be displayed. 2. Search for AM104updated should show the entry.	Delete entry "AM104updated"	PASS
		Modify Introduced date	Yes	Computer name "AM105" should be present in the database.If not present, Create it.	1. In the HOMEPAGE, search for "AM105" using "Filter by name". 2. In the result table, locate Computer name "AM105" and click on it. 3. Modify IntroducedDate to "1985-09-18" and Click "Save this computer" button.	1. Message "Done! Computer AM105 has been updated" should be displayed. 2. Search for AM105 should show the entry with Introduced as "18 Sep 1985".	Delete entry "AM105"	PASS
		Modify Discontinued date	Yes	Computer name "AM106" should be present in the database.If not present, Create it.	1. In the HOMEPAGE, search for "AM106" using "Filter by name". 2. In the result table, locate Computer name "AM106" and click on it. 3. Modify Discontinued Date to "1985-09-18" and Click "Save this computer" button.	1. Message "Done! Computer AM106 has been updated" should be displayed. 2. Search for AM106 should show the entry with Discontinued as "18 Sep 1985".	Delete entry "AM106"	PASS
		Modify Computername and cancel	Yes	Computer name "AM107" should be present in the database.If not present, Create it.	1. In the HOMEPAGE, search for "AM107" using "Filter by name". 2. In the result table, locate Computer name "AM107" and click on it. 3. Modify computer name to "AM107updated" and Click "Cancel" button.	Search for AC107 should show the entry without any changes. Search for AC107update should show "Nothing to display".	Delete entry "AM107"	PASS
		Modify all fields	Yes	Computer name "AM108" should be present in the database.If not present, Create it.	1. In the HOMEPAGE, search for "AM108" using "Filter by name". 2. In the result table, locate Computer name "AM108" and click on it. 3. Modify Computer name to "AM108updated", IntroducedDate to "1985-09-18", DisocontinuedDate to "2005-09-18", Company to "IBM" and Click "Save this computer" button.	1. Message "Done! Computer AM108updated has been updated" should be displayed. 2. Search for "AM108updated" should show the entry with Introduced as "18 Sep 1985", Discontinued as "18 Sep 2005" and Company as "IBM"	Delete entry "AM108updated"	PASS
	Negative	Invalid Introduced date	Yes	Computer name "AM109" should be present in the database.If not present, Create it.	1. In the HOMEPAGE, search for "AM109" using "Filter by name". 2. In the result table, locate Computer name "AM109" and click on it. 3. Modify IntroducedDate to "1985-19-18" and Click "Save this computer" button.	1. Dialog box for "Introduced Date" should be highlighted in red color as it is error to send invalid month "19" for a month in the date field. 2. Search for "AM109" should display the entry without any changes from modification.	Delete entry "AM109"	PASS
		Invalid Discontined date	Yes	Computer name "AM110" should be present in the database.If not present, Create it.	1. In the HOMEPAGE, search for "AM110" using "Filter by name". 2. In the result table, locate Computer name "AM110" and click on it. 3. Modify Discontinued Date to "never" and Click "Save this computer" button.	1. Dialog box for "Discontinued Date" should be highlighted in red color as it is error to send text for a date field. 2. Search for "AM110" should display the entry without any changes from modification.	Delete entry "AM110"	PASS
Delete entry	Positive	Delete Entry with ComputerName	Yes	Computer name "AD101" should be present in the database.If not present, Create it.	1. In the HOMEPAGE, search for "AD101" using "Filter by name". 2. In the result table, locate Computer name "AD101" and click on it. 3. Click "Delete this computer" button.	1. Message "Done! Computer has been deleted " should be displayed. 2. Search for AD101 should display no result.		PASS
	Negative	Delete already deleted entry	No	Computer name "AD102" should be present in the database.If not present, Create it.	1. Open HOMEPAGE in two browsers and in each browser search for "AD102" using "Filter by name". 2. In each browser, locate Computer name "AD102" in the result table and click on it. 3. In one browser, Click "Delete this computer" button. 4. In the second browser, Click "Delete this computer" button.	1. Message "Done! Computer has been deleted " should be displayed. 2. Search for AD102 should display no result.		PASS
	Positive	Delete Entry with AllFields	No	Computer name "AD103" with Introduced date, Discontinued date and Company should be present in the database.If not present, Create it.	1. In the HOMEPAGE, search for "AD103" using "Filter by name". 2. In the result table, locate Computer name "AD103" and click on it. 3. Click "Delete this computer" button.	1. Message "Done! Computer has been deleted " should be displayed. 2. Search for AD103 should display no result.		PASS
many more testcases are possible for Read, Update and Delete with combinations of fields,- Computername, Inroduced date, Discontinued date and Company								