

Table 1, A summary of test case designed

Test Case No	Test case description	Test data	Expected results	Actual results	Status (Pass/Fail)
01	Test for menu display when running the code	N/A	The menu displays in the console to allow user input	<pre> 1. Add Pet 2. Modify Pet 3. Remove Pet 4. List Pets 5. Search Pet 6. Clinic Report 7. Exit </pre>	Pass
02	Test for adding a pet	Menu option '1' 'dog' for pet type 'Monty' for name '2' for age 'Brown' for colour '10.2' for weight	The test data will be saved and then displayed correctly	<pre> 1. Add Pet 2. Modify Pet 3. Remove Pet 4. List Pets 5. Search Pet 6. Clinic Report 7. Exit 1 Enter pet type (dog/cat): dog Name: Monty Age: 2 Colour: Brown Weight: 10.2 Breed: Retriever 1. Add Pet 2. Modify Pet 3. Remove Pet 4. List Pets 5. Search Pet 6. Clinic Report 7. Exit 4 Monty, Age: 2, colour: Brown, Weight: 10.2kg, Breed: Retriever 1. Add Pet </pre>	Pass

		'Retriever' for breed '4' to view the pet added			
03	Test for adding a pet	Menu option '1' 'cat for pet type 'Milly' for name '5' for age 'Brown' for colour '6' for weight 'British shorthair' for breed '4' to view the pet added	The test data will be saved and then displayed correctly	<pre> 1. Add Pet 2. Modify Pet 3. Remove Pet 4. List Pets 5. Search Pet 6. Clinic Report 7. Exit 1 Enter pet type (dog/cat): cat Name: Milly Age: 5 Colour: Brown Weight: 6 Breed: British shorthair 1. Add Pet 2. Modify Pet 3. Remove Pet 4. List Pets 5. Search Pet 6. Clinic Report 7. Exit 4 Monty, Age: 2, colour: Brown, Weight: 11.0kg, Breed: Retriever Milly, Age: 5, colour: Brown, Weight: 6.0kg, Breed: British shorthair </pre>	Pass

04	Error handling test for adding a pet	Menu option '1' 'parrot' to test error handling	An appropriate error message will be displayed, then allowing the user to continue	<pre> 1. Add Pet 2. Modify Pet 3. Remove Pet 4. List Pets 5. Search Pet 6. Clinic Report 7. Exit 1 Enter pet type (dog/cat): parrot Invalid pet type. Please enter 'dog' or 'cat'. Enter pet type (dog/cat): </pre>	Pass
05	Test for modifying pet details	Menu option '2' 'Monty' to select the pet menu option '4' '11' for new weight '4' to list and view the new weight	The new weight will be saved and a appropriate message will be displayed to the user to let them know	<pre> 1. Add Pet 2. Modify Pet 3. Remove Pet 4. List Pets 5. Search Pet 6. Clinic Report 7. Exit 2 Enter pet name to modify: Monty What would you like to modify? 1. Name 2. Age 3. colour 4. Weight 5. Breed 4 Enter new weight: 11 Pet details updated. 1. Add Pet 2. Modify Pet 3. Remove Pet 4. List Pets 5. Search Pet 6. Clinic Report 7. Exit 4 Monty, Age: 2, colour: Brown, Weight: 11.0kg, Breed: Retriever </pre>	Pass

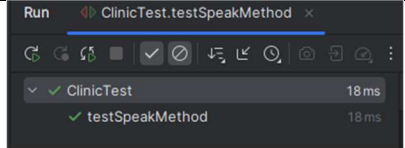
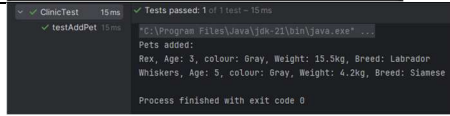
06	Test for viewing the current pets added	Menu option '4'	It will display the added pet 'Monty' and the appropriate details	<pre> 1. Add Pet 2. Modify Pet 3. Remove Pet 4. List Pets 5. Search Pet 6. Clinic Report 7. Exit 4 Monty, Age: 2, colour: Brown, Weight: 11.0kg, Breed: Retriever </pre>	Pass
07	Test for searching pets by name	Menu option '5' 'Monty' to search for the name	It will display the details of the pet, and the 'speak' method will be called, making the animal noise	<pre> 1. Add Pet 2. Modify Pet 3. Remove Pet 4. List Pets 5. Search Pet 6. Clinic Report 7. Exit 5 Enter pet name or colour to search: Monty Monty, Age: 2, colour: Brown, Weight: 11.0kg, Breed: Retriever Woof! I am Monty, a 2 year old Retriever dog. </pre>	Pass
08	Error testing for searching pets by name	Menu option '5' 'Max' to search for the name. which doesn't exist	It will display an appropriate error message telling the user the pet was not found	<pre> 1. Add Pet 1. Add Pet 2. Modify Pet 3. Remove Pet 4. List Pets 5. Search Pet 6. Clinic Report 7. Exit 5 Enter pet name or colour to search: Max </pre>	Pass

09	Test for clinic reporting	Menu option '6'	It will display the clinic report, with 1 dog, 1 cat and the dominant colour being 'Brown'	<pre> 1. Add Pet 2. Modify Pet 3. Remove Pet 4. List Pets 5. Search Pet 6. Clinic Report 7. Exit 6 Clinic Report: Pet Clinic Total Dogs: 1 Total Cats: 1 Dominant colour: Brown </pre>	Pass
10	Test for removing a pet	Menu option '3' 'Milly' as the pet to remove '4' to view the current pets	After Milly has been removed, it will show an appropriate confirmation message, and only Monty will be left	<pre> 1. Add Pet 2. Modify Pet 3. Remove Pet 4. List Pets 5. Search Pet 6. Clinic Report 7. Exit 3 Enter pet name to remove: Milly 1. Add Pet 2. Modify Pet 3. Remove Pet 4. List Pets 5. Search Pet 6. Clinic Report 7. Exit 4 Monty, Age: 2, colour: Brown, Weight: 11.0kg, Breed: Retriever 1. Add Pet </pre>	Pass

11	Error testing for removing a pet	Menu option '3' 'Max' as the pet to remove '4' to view the current pets	After Max is inputted, it will show an appropriate error message saying the pet is not found	<pre> 1. Add Pet 2. Modify Pet 3. Remove Pet 4. List Pets 5. Search Pet 6. Clinic Report 7. Exit 3 Enter pet name to remove: Max Pet not found. 1. Add Pet </pre>	Pass
12	Testing of exit and save data to disk	Menu option '7'	After the program exits, the data will be saved to 'PetDetails.txt' and the clinic report will be saved to 'ClinicDetails.txt'	<div> <div> n.java PetDetails.txt × ClinicDetails.txt </div> <div> Dog, Monty, 2, Brown, 11.0, Retriever </div> </div> <div> <div> n.java ClinicDetails.txt × </div> <div> Clinic Name: Pet Clinic Total Dogs: 1 Total Cats: 1 Dominant colour: Brown </div> </div> <div> <pre> 1. Add Pet 2. Modify Pet 3. Remove Pet 4. List Pets 5. Search Pet 6. Clinic Report 7. Exit 7 Process finished with exit code 0 </pre> </div>	Pass

13	Test of repopulating the program on start	Run the program Menu option '4'	After '4' is selected, it displays 'Monty' and the appropriate details	<pre> C:\Program Files\Java\jdk-21\bin\java.exe" "-javaagent:C:\Progra 1. Add Pet 2. Modify Pet 3. Remove Pet 4. List Pets 5. Search Pet 6. Clinic Report 7. Exit 4 Monty, Age: 2, colour: Brown, Weight: 11.0kg, Breed: Retriever 1. Add Pet </pre>	Pass
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Table 2, Unit tests

Test Case No	Unit test description	Unit test Code	Output	Status (Pass/Fail)
1	Test for pet speak method	<pre> @Test public void testSpeakMethod() { assertEquals("expected: 'Woof! I am Rex, a 3 year old Labrador dog.', dog.speak()); assertEquals("expected: 'Meow! I am Whiskers, a 5 year old Siamese cat.', cat.speak()); assertEquals("expected: 'I am a pet named Rex", new Pet(name: "Rex", age: 3, colour: "Brown", weight: 15.5).speak()); } </pre>		Pass
2	Test for adding a pet	<pre> @Before public void setUp() { clinic = new Clinic(name: "Test Clinic"); dog = new Dog(name: "Rex", age: 3, colour: "Gray", weight: 15.5, breed: "Labrador"); cat = new Cat(name: "Whiskers", age: 5, colour: "Gray", weight: 4.2, breed: "Siamese"); } @Test public void testAddPet() { System.out.println("Pets added:"); clinic.addPet(dog); clinic.addPet(cat); clinic.listPets(); } </pre>		Pass


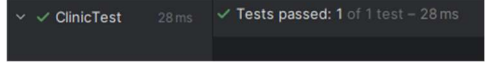
3	Test for removing a pet	<pre> @Test public void testRemovePet() { clinic.addPet(dog); clinic.removePet(name: "Rex"); System.out.println("Pets Remaining after removal:"); clinic.listPets(); } </pre>		Pass
4	Test for searching of pets	<pre> @Test public void testSearchPet() { clinic.addPet(dog); clinic.addPet(cat); clinic.searchPet("Rex"); clinic.searchPet("Whiskers"); clinic.searchPet("Monty"); //Pet that hasn't been added } </pre>		Pass
5	Test for clinic report	<pre> @Test public void testClinicReport() { clinic.addPet(dog); clinic.addPet(cat); clinic.clinicReport(); } </pre>		Pass
6	Test for saving and loading data to/from disk	<pre> @Test public void testSaveAndLoadData() throws IOException { clinic.addPet(dog); clinic.addPet(cat); clinic.saveToFile(); Clinic newClinic = new Clinic(name: "New Clinic"); newClinic.listPets(); } </pre>		Pass

Table 3, A summary of the implementation of each requirement

Requirement	Implemented (Yes/No)	Test case ID designed
Ability to pre-populate the application with any previously store data	Yes	Table 1, ID13 Table 2, ID6
Ability to add a pet	Yes	Table 1, ID3,4 Table 2, ID2
Ability to delete a pet	Yes	Table 1, ID10,11 Table 2, ID3
Ability to modify a pet	Yes	Table 1, ID5
Ability for a pet to 'speak'	Yes	Table 1, ID7 Table 2, ID1
Ability to search for a pet	Yes	Table 1, ID7,8 Table 2, ID4
Ability to view all pets	Yes	Table 1, ID6
Report of the clinic	Yes	Table 1, ID9 Table 2, ID5
Save all data to disk	Yes	Table 1, ID12 Table 2, ID6