

Mutation testing - APIControllers

Testing framework: Mocha@10.8.2

Assertion library used: Chai@4.3.4

Other: Sinon@19.0.2

Scope of Testing:

The test cases are designed to validate the functionality of the following methods in the PetController module:

- `getAllPets`: Retrieves all pets from the database, with optional filtering by category.
- `createPet`: Handles the creation of a new pet, including validation and image upload functionality.
- `updatePet`: Allows updating the details of an existing pet, including updating images and other pet information.
- `deletePet`: Deletes a pet from the database and handles associated errors.
- `getPet`: Retrieves the details of a single pet by ID

Below is the result obtained by running the test file on the mutated code:

Ran 0.72 tests per mutant on average.

File	% Mutation score		# killed	# timeout	# survived	# no cov	# errors
	total	covered					
All files	36.49	66.67	54	0	27	67	0
APIControllers.js	36.49	66.67	54	0	27	67	0

03:43:07 (20036) INFO HtmlReporter Your report can be found at: file:///D:/Mutation/61_Pet_Adoption_System/coverage

```
32 - if (req.query.minAge || req.query.maxAge) {
+   if (req.query.minAge && req.query.maxAge) {
```

🧐 LogicalOperator Survived (32:13) 🔍 More

☔ Covered by 5 tests (yet still survived)

Arithmetic mutator

```
53 - const blob = bucket.file(Date.now() + path.extname(file.originalname));
+ const blob = bucket.file(Date.now() - path.extname(file.originalname));
```

ArithmeticOperator Survived (53:34) [More](#)

Covered by 1 test (yet still survived)

Removing one argument

```
58 - blobStream.on('error', (err) => {
+ blobStream.on("", (err) => {
```

StringLiteral Survived (58:23) [More](#)

Covered by 1 test (yet still survived)

Changing the condition value to false

```
82 - if (file) {
+ if (false) {
```

ConditionalExpression Survived (82:13) [More](#)

Covered by 1 test (yet still survived)

Changing the condition value to true

```
112 - if (name != null) res.pet.name = name;
+ if (true) res.pet.name = name;
```

ConditionalExpression Survived (112:17) [More](#)

Covered by 1 test (yet still survived)

Changing the condition

```
114 - if (gender != null) res.pet.gender = gender;
+ if (gender == null) res.pet.gender = gender;
```

EqualityOperator Survived (114:17) [More](#)

Covered by 1 test (yet still survived)

Links to files:

[APIController.js](#)

[apicont.js](#)