Test Cases

1. Black Box Testing	3
1.1 Important Controllers and tests to be done	3
Store Owner Controller	3
Equivalence Class Partitioning	3
Boundary Value Testing	4
1.2 Parameters	4
1.2.1 Add Food Function Fields Parameters(Store Owner Controller)	4
For Name Field:	4
For Price Field:	4
For Type Field:	4
For Cuisine Field:	5
For Description Field:	5
1.2.2 Add Discount Function Parameters(Store Owner Controller)	5
For Price Field:	5
1.2.3 Sign Up Function Fields Parameters(User Controller)	5
For First Name Field:	5
For Last Name Field:	6
For Username Field:	6
For Email Address Field:	6
For Password Field:	7
For Confirm Password Field:	7
For Role Field:	7
For Canteen Name Field:	7
For Store Name Field:	7
1.2.4 Login Function Parameters(User Controller)	8

For Username Field:	8
For Password Field:	8
1.3 Test Cases	8
1.3.1 Add Food Function Tests(Store Owner Controller)	8
1.3.2 Add Discount Function (Store Owner Controller)	10
1.3.3 Sign Up Function (User Controller)	13
1.3.4 Sign In Function (User Controller)	18
2. White Box Testing	20
2.1 Control Flow for Login	20
2.2 Models Test:	22
2.2.1 Consumer Model Test:	22
2.2.2 Location Model Test:	23
2.2.3 Canteen Model Test:	24
2.2.4 Store Model Test:	25
2.2.5 Store Owner Model Test:	26
2.2.6 Food Model Test:	27
2.2.7 Review Model Test:	29
2.2.8 Flagged Review Model Test:	31
2.2.9 Notification Model Test:	33
2.2.10 Banned User Model Test:	35
2.3 Views Test:	36
2.3.1 Create Review Views Test:	36
2.3.2 Store Owner Add Listing Views Test:	39
2.3.3 Search Food Views Test:	41
2.3.4 Filter Food Views Test:	44

1. Black Box Testing

1.1 Important Controllers and tests to be done

Store Owner Controller

Control class to test: Store Owner Controller

The Store Owner Controller class manages the functionality for store owners to add and update food listings within the NTUFoodie application. Key functions in this class, such as Add Food and Add Discount, are responsible for enabling store owners to input accurate food details, including Name, Price, Type, Cuisine, Description, and Discount.

User Controller

Control class to test: User Controller

The *User Controller* class manages the core functionalities for user account management within the NTUFoodie application. This includes operations for user sign-up and login. The class ensures that users input accurate details such as *First Name*, *Last Name*, *Username*, *Email Address*, *Password*, *Confirm Password*, *Role*, *Canteen Name* (*if the input role is Store Owner*) and *Store Name* (*if the input role is Store Owner*) with validation checks to confirm that input fields meet format and security requirements.

Equivalence Class Partitioning

This approach divides input data into valid and invalid classes to cover as many variations with minimal test cases.

Boundary Value Testing

This approach targets the boundaries around valid input ranges, testing edge cases to see if the application handles them correctly.

1.2 Parameters

1.2.1 Add Food Function Fields Parameters(Store Owner Controller)

For Name Field:

- Valid Classes:
 - Any valid strings with no more than 200 characters
- Invalid Classes:
 - No input
 - More than 200 characters (automatically prevented by system)

For *Price* Field:

- Valid Classes:
 - Numerical values above -1
- Invalid Classes:
 - Negative value
 - Non-numeric values (e.g., letters or special characters).

For *Type* Field:

- Valid Classes:
 - Any drop down option except "-"
- Invalid Classes:
 - o "-" option

For Cuisine Field:

- Valid Classes:
 - Any drop down option except "-"
- Invalid Classes:
 - o "-" option

For *Description* Field:

- Valid Classes:
 - Any valid strings with no more than 1000 characters
- Invalid Classes:
 - No input
 - More than 1000 characters (automatically prevented by system)

1.2.2 Add Discount Function Parameters(Store Owner Controller)

For Price Field:

- Valid values: 0 (lower bound), 99(upper bound)
- Invalid values: -1(lower bound), 100(upper bound), Non-numeric values (e.g., letters or special characters)

1.2.3 Sign Up Function Fields Parameters(User Controller)

For First Name Field:

- Valid Classes:
 - Any valid strings
- Invalid Classes:

No input

For Last Name Field:

- Valid Classes:
 - Any valid strings
- Invalid Classes:
 - No input

For Username Field:

- Valid Classes:
 - Any valid strings with no more than 150 characters
- Invalid Classes:
 - No input
 - o An existing user's username
 - More than 150 characters (automatically prevented by system)

For Email Address Field:

- Valid Classes:
 - Any valid strings with no more than 254 characters
 - No input (System allows account creation with no email)
- Invalid Classes:
 - o Invalid email address
 - More than 254 characters (automatically prevented by system)

For Password Field:

• Valid Classes:

- Any valid strings matching with input for Confirm Password Field
- Invalid Classes:
 - No input
 - o Strings not matching input for Confirm Password Field

For Confirm Password Field:

- Valid Classes:
 - Any valid strings matching with input for Password Field
- Invalid Classes:
 - No input
 - o Strings not matching input for Password Field

For Role Field:

- Valid Classes:
 - o Any drop down
- Invalid Classes (None)

For Canteen Name Field:

- Valid Classes:
 - Any drop down option except "-"
- Invalid Classes(None)

For Store Name Field:

- Valid Classes:
 - Any valid strings
- Invalid Classes:

No input

1.2.4 Login Function Parameters(User Controller)

For Username Field:

- Valid Classes:
 - o A registered user's username
- Invalid Classes:
 - o Empty input,
 - o A username that is not registered in the system

For Password Field:

- Valid Classes:
 - A valid password
- Invalid Classes:
 - o Empty input,
 - Wrong password

1.3 Test Cases

1.3.1 Add Food Function Tests(Store Owner Controller)

Input parameter: Name, Price, Type, Cuisine, Description (*Fields in red belongs to invalid class*)

Test Case Descripti Test Type Priority Input	Expected Output	Actual Output
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ID	on					
TC_AF_001	Valid food item addition	Equivalence Partitioning	High	(All valid inputs) Name: "Chicken Rice" Price: 0 Type: Non-halal Cuisine: Chinese Description: "Tasty Hainanese Chicken Rice"	System outputs "Listing Added Successfully!"	System outputs "Listing Added Successfully!"
TC_AF_002	Empty name field	Negative Testing	High	(Invalid Name, others valid) Name: "" Price: 0 Type: Non-halal Cuisine: Chinese Description: "Tasty Hainanese Chicken Rice"	System outputs "Please fill out this field" for name section	System outputs "Please fill out this field" for name section
TC_AF_003	Negative price value	Boundary Value Testing	High	(Invalid Price, others valid) Name: "Chicken Rice" Price: -1 Type: Non-halal Cuisine: Chinese Description: "Tasty Hainanese Chicken Rice"	System outputs "Error in price: * Price cannot be negative."	System outputs "Error in price: * Price cannot be negative."
TC_AF_004	Non-num eric place	Data Type Testing	Medium	(Invalid Price, others valid) Name: "Chicken Rice" Price: "e" Type: Non-halal Cuisine: Chinese Description: "Tasty Hainanese	System outputs "Please enter a number."	System outputs "Please enter a number."

				Chicken Rice"		
TC_AF_005	Invalid type selection	Negative Testing	High	(Invalid Type, others valid) Name: "Chicken Rice" Price: 0 Type: - Cuisine: Chinese Description: "Tasty Hainanese Chicken Rice"	System outputs "Error in type: * This field is required."	System outputs "Error in type: * This field is required."
TC_AF_006	Invalid cuisine selection	Negative Testing	High	(Invalid Cuisine, others valid) Name: "Chicken Rice" Price: 0 Type: Non-halal Cuisine: - Description: "Tasty Hainanese Chicken Rice"	System outputs "Error in type: * This field is required."	System outputs "Error in type: * This field is required."
TC_AF_007	Empty descriptio n	Negative Testing	Medium	(Invalid Description, others valid) Name: "Chicken Rice" Price: 0 Type: Non-halal Cuisine: Chinese Description: ""	System outputs "Please fill out this field" for description section	System outputs "Please fill out this field" for description section

1.3.2 Add Discount Function (Store Owner Controller)

Input parameter: Discount (*Fields in red belongs to invalid class*)

Test Case ID	Description	Test Type	Priority	Input	Expected	Actual Output
			-	•	•	·

					Output	
TC_AD_001	Valid discount (lower bound)	Boundary Value Testing	High	(Lower bound valid input) Name: "Chicken Rice" Price: 0 Type: Non-halal Cuisine: Chinese Description: "Tasty Hainanese Chicken Rice" Discount: 0	System outputs "Listing Updated Successfully!"	System outputs "Listing Updated Successfully!"
TC_AD_002	Valid discount (upper bound)	Boundary Value Testing	High	(Upper bound valid input) Name: "Chicken Rice" Price: 0 Type: Non-halal Cuisine: Chinese Description: "Tasty Hainanese Chicken Rice" Discount: 99	System outputs "Listing Updated Successfully!"	System outputs "Listing Updated Successfully!"
TC_AD_003	Invalid discount (below lower bound)	Boundary Value Testing	High	(Lower bound invalid input) Name: "Chicken Rice" Price: 0 Type: Non-halal Cuisine: Chinese Description: "Tasty Hainanese Chicken Rice" Discount: -1	System outputs "An error occurred. Please check the form and try again." and "Discount rate cannot be negative." message underneath	System outputs "An error occurred. Please check the form and try again." and "Discount rate cannot be negative." message underneath

					discount section	discount section
TC_AD_004	Invalid discount (above upper bound)	Boundary Value Testing	High	(Upper bound invalid input) Name: "Chicken Rice" Price: 0 Type: Non-halal Cuisine: Chinese Description: "Tasty Hainanese Chicken Rice" Discount: 100	System outputs "An error occurred. Please check the form and try again." and "Discount rate must be less than 100%." message underneath discount section	System outputs "An error occurred. Please check the form and try again." and "Discount rate must be less than 100%." message underneath discount section
TC_AD_005	Non-numeric discount value	Data Type Testing	Medium	(String input) Name: "Chicken Rice" Price: 0 Type: Non-halal Cuisine: Chinese Description: "Tasty Hainanese Chicken Rice" Discount: "e"	System outputs "Please enter a number."	System outputs "Please enter a number."

1.3.3 Sign Up Function (User Controller)

Input parameter: First Name, Last Name, Username, Email Address, Password, Confirm Password, Role, Canteen Name, Store Name (*Fields in red belongs to invalid class, Fields in green belongs to valid class*)

Test Case ID	Description	Test Type	Priority	Input	Expected Output	Actual Output
TC_SU_001	Valid registration	Equivalence Partitioning	High	(All valid inputs) First Name: "store" Last Name: "owner" Username: "storeowner" Email Address: "storeowner@gmail.com" Password: "testpassword" Confirm Password: "testpassword" Role: Store Owner Canteen Name: Quad Cafe Store Name: "Store"	Redirects to the login page. System outputs "Account was created for storeowner"	Redirects to the login page. System outputs "Account was created for storeowner"
TC_SU_002	Empty first name	Negative Testing	High	(Invalid First Name, others valid) First Name: "" Last Name: "owner" Username: "storeowner" Email Address: "storeowner@gmail.com" Password: "testpassword" Confirm Password: "testpassword" Role: Store Owner Canteen Name: Quad Cafe Store Name: "Store"	System outputs "Please fill out this field" for first name section	System outputs "Please fill out this field" for first name section
TC_SU_003	Empty last	Negative	High	(Invalid Last Name, others valid)	System	System outputs

	name	Testing		First Name: "store" Last Name: "" Username: "storeowner" Email Address: "storeowner@gmail.com" Password: "testpassword" Confirm Password: "testpassword" Role: Store Owner Canteen Name: Quad Cafe Store Name: "Store"	outputs "Please fill out this field" for last name section	"Please fill out this field" for last name section
TC_SU_004	Empty username	Negative Testing	High	(Invalid Username, others valid) First Name: "store" Last Name: "owner" Username: "" Email Address: "storeowner@gmail.com" Password: "testpassword" Confirm Password: "testpassword" Role: Store Owner Canteen Name: Quad Cafe Store Name: "Store"	System outputs "Please fill out this field" for username section	System outputs "Please fill out this field" for username section
TC_SU_005	Duplicate username	Negative Testing	High	(Invalid Username, others valid) First Name: "store" Last Name: "owner" Username: "teststoreowner1" Email Address: "storeowner@gmail.com" Password: "testpassword" Confirm Password: "testpassword" Role: Store Owner	System outputs "username: A user with that username already exists."	System outputs "username: A user with that username already exists."

				Canteen Name: Quad Cafe Store Name: "Store"		
TC_SU_006	Invalid email (missing @)	Data Format Testing	High	(Invalid Email Address, others valid) First Name: "store" Last Name: "owner" Username: "storeowner" Email Address: "storeowner" Password: "testpassword" Confirm Password: "testpassword" Role: Store Owner Canteen Name: Quad Cafe Store Name: "Store"	System outputs "Please include an '@' in the email address. 'storeowner' is missing an '@'." for email address section	System outputs "Please include an '@' in the email address. 'storeowner' is missing an '@'." for email address section
TC_SU_007	Invalid email (incomplete domain)	Data Format Testing	High	(Invalid Email Address, others valid) First Name: "store" Last Name: "owner" Username: "storeowner" Email Address: "storeowner@" Password: "testpassword" Confirm Password: "testpassword" Role: Store Owner Canteen Name: Quad Cafe Store Name: "Store"	System outputs "Please enter a part following '@'. 'storeowner@' is incomplete." for email address section	System outputs "Please enter a part following '@'. 'storeowner@' is incomplete." for email address section
TC_SU_008	Invalid email (missing TLD)	Data Format Testing	High	(Invalid Email Address, others valid) First Name: "store" Last Name: "owner" Username: "storeowner"	System outputs "email: Enter a valid email address."	System outputs "email: Enter a valid email address."

				Email Address: "storeowner@gmail" Password: "testpassword" Confirm Password: "testpassword" Role: Store Owner Canteen Name: Quad Cafe Store Name: "Store"		
TC_SU_009	Invalid email (incomplete TLD)	Data Format Testing	High	(Invalid Email Address, others valid) First Name: "store" Last Name: "owner" Username: "storeowner" Email Address: "storeowner@gmail." Password: "testpassword" Confirm Password: "testpassword" Role: Store Owner Canteen Name: Quad Cafe Store Name: "Store"	System outputs "'.' is used at a wrong position in 'gmail.'." for email address section	System outputs "'.' is used at a wrong position in 'gmail.'." for email address section
TC_SU_010	Empty password	Negative Testing	High	(Invalid Password, others valid) First Name: "store" Last Name: "owner" Username: "storeowner" Email Address: "storeowner@gmail." Password: "" Confirm Password: "testpassword" Role: Store Owner Canteen Name: Quad Cafe Store Name: "Store"	System outputs "password1: This field is required."	System outputs "password1: This field is required."
TC_SU_011	Password mismatch	Data Validation	High	(Password and Confirm Password not matching, others valid)	System outputs	System outputs "password2:

				First Name: "store" Last Name: "owner" Username: "storeowner" Email Address: "storeowner@gmail." Password: "testpass" Confirm Password: "testpassword" Role: Store Owner Canteen Name: Quad Cafe Store Name: "Store"	"password2: The two password fields didn't match."	The two password fields didn't match."
TC_SU_012	Empty confirm password	Negative Testing	High	(Invalid Confirm Password, others valid) First Name: "store" Last Name: "owner" Username: "storeowner" Email Address: "storeowner@gmail." Password: "testpassword" Confirm Password: "" Role: Store Owner Canteen Name: Quad Cafe Store Name: "Store"	System outputs "password2: This field is required."	System outputs "password2: This field is required."
TC_SU_013	Empty store name	Negative Testing	Mediu m	(Invalid Store Name, others valid) First Name: "store" Last Name: "owner" Username: "storeowner" Email Address: "storeowner@gmail." Password: "testpassword" Confirm Password: "" Role: Store Owner Canteen Name: Quad Cafe Store Name: ""	System outputs "Please fill out this field" for store section	System outputs "Please fill out this field" for store section

1.3.4 Sign In Function (User Controller)

Input parameter: Username, Password (*Fields in red belongs to invalid class*)

Test Case ID	Description	Test Type	Priority	Input	Expected Output	Actual Output
TC_L_001	Valid login	Equivalence Partitioning	High	(All valid inputs) Name: "teststoreowner" Password: "testpassword"	Redirects to home page for store owners	Redirects to home page for store owners
TC_L_002	Empty username	Negative Testing	High	(Invalid Name, Valid Password) Name: "" Password: "testpassword"	System outputs "Invalid username or password."	System outputs "Invalid username or password."
TC_L_003	Invalid username	Negative Testing	High	(Invalid Name, Valid Password) Name: "teststoreowners" Password: "testpassword"	System outputs "Invalid username or password."	System outputs "Invalid username or password."
TC_L_004	Empty password	Negative Testing	High	(Invalid Password, Valid Name) Name: "teststoreowner" Password: ""	System outputs "Invalid username or password."	System outputs "Invalid username or password."

TC_L_005	Wrong password	Negative Testing	High	(Invalid Password, Valid Name) Name: "teststoreowner" Password: "wrongpass"	System outputs "Invalid username or password."	System outputs "Invalid username or password."
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2. White Box Testing

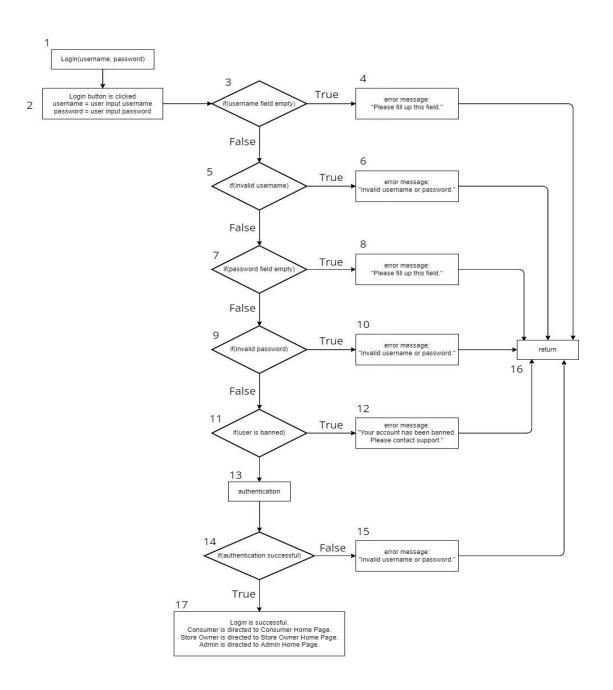
- Determining the expected outputs for chosen inputs.
- Constructs tests with chosen inputs (Pytest).
- Compares actual outputs with chosen inputs.
- Code snippets are either written in python or HTML

2.1 Control Flow for Login

Basic Path Testing

<u>Cyclomatic Complexity</u> = |Decision points| + 1 = 6 + 1 = 7 Basis Paths:

- 1. Baseline path: 1,2,3,5,7,9,11,13,14,17
- 2. Basis path 2: 1,2,3,4,16
- 3. Basis path 3: 1,2,3,5,6,16
- 4. Basis path 4: 1,2,3,5,7,8,16
- 5. Basis path 5: 1,2,3,5,7,9,10,16
- 6. Basis path 6: 1,2,3,5,7,9,11,12,16
- 7. Basis path 7: 1,2,3,5,7,9,11,13,14,15,16



2.2 Models Test:

2.2.1 Consumer Model Test:

Test Case ID	Descriptio n	Priority	Input	Expected Output	Actual Output
TC_CM_00 1	Create consumer object	High	cls.user = User.objects.create_user(username='testuser', password="password") cls.consumer = Consumer.objects.create(def test_consumer_creation(self): self.assertIsInstance(self.consumer, Consumer) # Test if Consumer instance is created print("\nConsumer instance created successfully.")	Consumer instance created successfully test_consumer_creation passed successfully
TC_CM_00 2	Consumer string display	High	firstName + lastName = Jane Tan	def _str_(self): return self.firstName + " " + self.lastName def test_consumer_str_display(self): expected_output = "Jane Tan" self.assertEqual(str(self.consumer), expected_output) print(f"Consumer string representation: {str(self.consumer)}")	Consumer string representation: Jane Tan test_consumer_str_display passed successfully

2.2.2 Location Model Test:

Test Case ID	Description	Priority	Input	Expected Output	Actual Output
TC_LM_00 1	Create location object	High	<pre>cls.location = Location.objects.create(canteenName="Canteen 20", address="Opp Hall 19 Bus Stop",) Input needed: canteenName = "Canteen 20" address = "Opp Hall 19 Bus Stop"</pre>	def test_location_creation(self): self.assertIsInstance(self.location , Location) self.assertEqual(self.location.cant eenName, "Canteen 20") self.assertEqual(self.location.add ress, "Opp Hall 19 Bus Stop") print("Location instance created successfully with canteenName and address.") location.canteenName = "Canteen 20" & location.address = "Opp Hall 19 Bus Stop"	Location instance created successfully with canteenName and address test_location_creation passed successfully
TC_LM_00 2	Location String display	High	Address = "Opp Hall 19 Bus Stop"	defstr(self): return str(self.address) def test_location_address_display(se lf): expected_output = "Opp Hall 19 Bus Stop" self.assertEqual(str(self.location), expected_output) print(f"Location string representation:	Location string representation: Opp Hall 19 Bus Stop test_location_address_display passed successfully

2.2.3 Canteen Model Test:

Test Case ID	Description	Priority	Input	Expected Output	Actual Output
TC_CAM_ 001	Create canteen object	High	<pre>cls.location = Location.objects.create(canteenName="Canteen 20", address="Opp Hall 19 Bus Stop",) cls.canteen = Canteen.objects.create(location=cls.location) Canteen uses the location object.</pre>	def test_canteen_creation(self): self.assertlsInstance(self.canteen , Canteen) # Test if Canteen instance is created print("Canteen instance created successfully.") Canteen object should be created successfully with the required inputs.	Canteen instance created successfully test_canteen_creation passed successfully
TC_CAM_ 002	Canteen String display	High	canteenName = "Canteen 20"	defstr(self): return self.location.canteenName def test_canteen_str_display(self): expected_output = "Canteen 20" self.assertEqual(str(self.canteen.location.canteenName), expected_output) print(f"Canteen string	Canteen string representation: Canteen 20 test_canteen_str_display passed successfully

	representation: {str(self.canteen.location.canteen Name)}")
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2.2.4 Store Model Test:

Test Case ID	Description	Priority	Input	Expected Output	Actual Output
TC_SM_00	Create store object	High	<pre>cls.location = Location.objects.create(canteenName="Canteen 20", address="Opp Hall 19 Bus Stop",) cls.canteen = Canteen.objects.create(location=cls.location) cls.store = Store.objects.create(storeName="Korean Store", canteen=cls.canteen,)</pre> Store uses the canteen object.	def test_store_creation(self): self.assertIsInstance(self.store, Store) self.assertEqual(self.store.storeName, "Korean Store") self.assertEqual(self.store.canteen, self.canteen) print("Store instance created successfully with storeName and canteen.") Store object should be created successfully with the required inputs.	Store instance created successfully with storeName and canteen test_store_creation passed successfully
TC_SM_00 2	Store String display	High	Korean Store @ Canteen 20	def _str_(self): return self.storeName + " @ " + self.canteen.location.canteenName def test _store _str_ display(self): expected_output = "Korean Store @ Canteen 20" self.assertEqual(str(self.store), expected_output) print(f"Store string representation:	Store string representation: Korean Store @ Canteen 20 test_store_str_display passed successfully

		{str(self.store)}")	

2.2.5 Store Owner Model Test:

Test Case ID	Description	Priority	Input	Expected Output	Actual Output
TC_SOM_ 001	Create store owner object	High	cls.user = User.objects.create_user(username='storeownert est', password="password") cls.storeOwner = StoreOwner.objects.create(user=cls.user, store=cls.store, firstName="store", lastName="owner", email="storeownertest@gmail.com", profilePic="default_profile.png",) Input particulars needed to create a store owner object. Store uses the store object created in the Store model.	def test_storeOwner_creation(self): self.assertIsInstance(self.storeOwner, StoreOwner) self.assertEqual(self.storeOwner.user, self.assertEqual(self.storeOwner.store, self.assertEqual(self.storeOwner.firstNam e, "store") self.assertEqual(self.storeOwner.lastNam e, "owner") print("StoreOwner instance created successfully with user, store, firstName, and lastName.") New store owner object should have the same particulars declared in the input.	StoreOwner instance created successfully with user, store, firstName, and lastName test_storeOwner_creation passed successfully

TC_SOM_ 002	Store owner	High	firstName + lastName = "store owner"	<pre>defstr(self): return self.firstName + " " + self.lastName</pre>	StoreOwner string representation: store owner
	String display			<pre>def test_storeOwner_str_display(self): expected_output = "store owner" self.assertEqual(str(self.storeOwner),</pre>	test_storeOwner_str_display passed successfully
				expected_output) print(f"StoreOwner string representation: {str(self.storeOwner)}")	

2.2.6 Food Model Test:

Test Case ID	Description	Priority	Input	Expected Output	Actual Output
TC_FM_00 1	Create food object	High	def setUpTestData(cls): super().setUpTestData() cls.food = Food.objects.create(store=cls.store, foodName="Japchae", price=5.50, type="Non-Halal", cuisine="Korean", description="Delicious Japchae", rating=4.5, isDiscounted=True, discountRate=10,) Input particulars needed to create a food object. Store uses the store	def test_food_creation(self): self.assertIsInstance(self.food, Food) self.assertEqual(self.food.store.storeNam e, self.store.storeName) self.assertEqual(self.food.store.canteen.l ocation.canteenName, self.store.canteen.location.canteenName) self.assertEqual(self.food.foodName, "Japchae") print("Store name: ", self.food.store.storeName) print("Canteen name: ", self.food.store.canteen.location.canteenName)	Store name: Korean Store Canteen name: Canteen 20 Food instance created successfully with foodName, store, and canteen information

			object created in the Store model.	print("Food instance created successfully with foodName, store, and canteen information.") New food object should also have the same storeName from store object and canteenName from location object.	
TC_FM_00 2	Food String display	High	foodName = "Japchae" storeName = "Korean Store" canteenName = "Canteen 20"	defstr(self): return self.foodName + " from " + self.store.storeName + " @ " + self.store.canteen.location.canteenName def test_food_str_display(self): expected_output = "Japchae from Korean Store @ Canteen 20" self.assertEqual(str(self.food), expected_output) print(f"Food string representation: {str(self.food)}")	Food string representation: Japchae from Korean Store @ Canteen 20 test_food_str_display passed successfully
TC_FM_00 3	Discount price calculation	High	def setUpTestData(cls): super().setUpTestData() cls.food = Food.objects.create(store=cls.store, foodName="Japchae", price=5.50, type="Non-Halal", cuisine="Korean", description="Delicious Japchae", rating=4.5, isDiscounted=True, discountRate=10,)	def save(self, *args, **kwargs): if self.isDiscounted and self.discountRate: self.discountedPrice = self.price * ((100 - self.discountRate) / 100) def test_discountedPrice_calculation(self): expected_discountedPrice = self.food.price * ((100 - self.food.discountRate) / 100) self.food.refresh_from_db() #	Discounted price calculated correctly: 4.95test_discountedPrice_calcula tion passed successfully

Set isDiscounted = True and give the discountRate = 10%	Refresh the instance from the database to ensure the latest data is loaded after save self.assertEqual(self.food.discountedPric e, expected_discountedPrice)	
	expected output = 90%*5.50 = 4.95	

2.2.7 Review Model Test:

Test Case ID	Description	Priority	Input	Expected Output	Actual Output
TC_RM_00 1	Create review object	High	cls.user = User.objects.create_user(username='testuser', password="password") cls.food = Food.objects.create(foodName="Ddukbokki", store=cls.store) cls.review = Review.objects.create(user=cls.user, food=cls.food, rating=4.5, description="Great taste!",) Input particulars needed to create a	def test_review_creation(self): self.assertEqual(self.review.user, self.user) self.assertEqual(self.review.food, self.food) self.assertEqual(self.review.rating, 4.5) self.assertEqual(self.review.description, "Great taste!") print("Review instance created successfully with user, food, rating, and description.") New review object should be created with the same	Review instance created successfully with user, food, rating, and description test_review_creation passed successfully

			review object. Only consumers have access to reviews, so the user = "testuser" instead of "teststoreowner" or both.	information as the input.	
TC_RM_00 2	Review String display	High	firstName = "Jane" lastName = "Tan" foodName = "Ddukbokki" storeName = "Korean Store"	defstr(self): return self.user.consumer.firstName + " " + self.user.consumer.lastName + " , " + self.food.foodName + " from " + self.food.store.storeName def test_review_str_display(self): expected_output = "Jane Tan , Ddukbokki from Korean Store" self.assertEqual(str(self.review), expected_output) print(f"Review string representation: {str(self.review)}")	Review string representation: Jane Tan , Ddukbokki from Korean Store test_review_str_display passed successfully
TC_RM_00 3	Valid rating creation	High	review = Review.objects.create(user=self.user, food=self.food, rating=5.0, description="Good") Review should be created with a rating of 5.	def test_valid_rating_creation(self): review = Review.objects.create(user=self.user, food=self.food, rating=5.0, description="Good") self.assertEqual(review.rating, 5.0) print("Review instance created with a valid rating of 5.0.") Rating = 5.0	Review instance created with a valid rating of 5.0test_valid_rating_creation passed successfully

TC_RM_00 4	Multiple reviews from same user	High	cls.user = User.objects.create_user(username='testuser', password="password") cls.review = Review.objects.create(def test_same_name_reviews(self): Review.objects.create(user=self.user, food=self.food, rating=4.5) Review.objects.create(user=self.user, food=self.food, rating=3.0) self.assertEqual(self.food.reviews.count(), 3) print("Review count: ",self.food.reviews.count())	Review count: 3 Multiple reviews with the same food and user names were created successfully test_same_name_reviews passed successfully
			Review.objects.create(user=self.user, food=self.food, rating=4.5) Review.objects.create(user=self.user, food=self.food, rating=3.0) 3 review objects created by the same		
			user.	same user should be 3.	

2.2.8 Flagged Review Model Test:

Test Case	Description	Priority	Input	Expected Output	Actual Output
ID					

TC_FRM_ 001	Create flagged review object	High	cls.flaggingUser = User.objects.create_user(username='john', password="password") cls.food = Food.objects.create(foodName="Bulgogi", store=cls.store) cls.review = Review.objects.create(user=cls.user, food=cls.food, rating=2.0, description="Tasteless",) cls.flaggedReview = FlaggedReview.objects.create(review=cls.review, flaggedBy=cls.flaggingUser, reason="Inappropriate Review",) Username "john" flags a review, with reason "Inappropriate Review".	def test_flaggedReview_creation(self): self.assertIsInstance(self.flaggedReview, FlaggedReview) self.assertEqual(self.flaggedReview.revie w, self.review) self.assertEqual(self.flaggedReview.flagg edBy, self.flaggingUser) self.assertEqual(self.flaggedReview.reas on, "Inappropriate Review") print("FlaggedReview instance created successfully with review, flaggedBy, and reason.") New flagged review object should be created with the same information as the input.	FlaggedReview instance created successfully with review, flaggedBy, and reasontest_flaggedReview_creation passed successfully
TC_FRM_ 002	Default isProcessed status	Medium	def test_default_isProcessed(self): self.assertFalse(self.flaggedReview.isProcessed) print("isProcessed default value is False.") The default status of isProcessed, which checks whether a flagged review is processed by an admin, is false.	class FlaggedReview(models.Model): review = models.ForeignKey(Review, on_delete=models.CASCADE) flaggedBy = models.ForeignKey(User, on_delete=models.CASCADE) reason = models.TextField(max_length=500, null=True) isProcessed = models.BooleanField(default=False) dateFlagged = models.DateTimeField(auto_now_add=True)	isProcessed default value is False test_default_isProcessed passed successfully

2.2.9 Notification Model Test:

Test Case ID	Description	Priority	Input	Expected Output	Actual Output
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TC_NM_0 01	Create notification object	High	cls.user = User.objects.create_user(username='testuser', password="password") def setUpTestData(cls): super().setUpTestData() cls.notification = Notification.objects.create(title="Hello", description="Nice to see you", user=cls.user,) Input needed to create a notification object by admin. Username of "testuser" should receive this notification.	def test_notification_creation(self): self.assertlsInstance(self.notification, Notification) self.assertEqual(self.notification.title, "Hello") self.assertEqual(self.notification.descripti on, "Nice to see you") self.assertEqual(self.notification.user, self.user) print("Notification instance created successfully with title, description, and user.") The notification object should be created with the same information as input.	Notification instance created successfully with title, description, and user test_notification_creation passed successfully
TC_NM_0 02	Default viewed status	Medium	def test_notification_defaultViewed(self): self.assertFalse(self.notification.viewed) # viewed should default to False print("Viewed default value is False.") The default status of viewed, to check whether the notification is viewed by the user, is false.	class Notification(models.Model): title = models.TextField(max_length = 100, null = True) description = models.TextField(max_length = 1000, null = True) viewed = models.BooleanField(default = False, null = True) user = models.ForeignKey(User, null=True, on_delete=models.CASCADE) dateCreated = models.DateTimeField(auto_now_add=Tr ue, null = True)	Viewed default value is False test_notification_defaultView ed passed successfully

03	Notification String display	High	self.user.username= "testuser" self.title = "Hello"	def test_notification_str_display(self):	Notification string representation: Notification for testuser. Title: Hellotest_notification_str_display passed successfully
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2.2.10 Banned User Model Test:

Test Case ID	Description	Priority	Input	Expected Output	Actual Output
TC_BM_0 01	Create banned user object	High	def setUpTestData(cls): super().setUpTestData() cls.banUser = User.objects.create_user(username='test', password="password") cls.bannedUser = BannedUser.objects.create(user=cls.banUser,) Input needed to create a banned user object, with username "test".	def test_bannedUser_creation(self): self.assertIsInstance(self.bannedUser, BannedUser) self.assertEqual(self.bannedUser.user, self.banUser) print("BannedUser instance created successfully with user.") The banned user object should have the same information as the input.	Banned user: test BannedUser instance created successfully with user test_bannedUser_creation passed successfully

TC_BM_0 02	Default isBanned status	Medium	def test_bannedUser_isBanned(self): self.assertTrue(self.bannedUser.isBanned) print("isBanned default value is True.") The default status of isBanned, which checks that the user is banned, is true.	class BannedUser(models.Model): user = models.OneToOneField(User, on_delete=models.CASCADE) bannedOn = models.DateTimeField(auto_now_add=Tr ue) isBanned = models.BooleanField(default=True)	isBanned default value is True test_bannedUser_isBanned passed successfully
TC_BM_0 03	Banned user String display	High	self.user.username= "test"	<pre>defstr(self): return f"Banned user: {self.user.username}." def test_bannedUser_str_display(self): expected_output = "Banned user: test." self.assertEqual(str(self.bannedUser), expected_output) print(f"BannedUser string representation: {str(self.bannedUser)}")</pre>	BannedUser string representation: Banned user: test test_bannedUser_str_display passed successfully

2.3 Views Test:

2.3.1 Create Review Views Test:

Test Case	Description	Priority	Input	Expected Output	Actual Output
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TC_CRV_ 001	Create review get request	High	cls.create_review_url = reverse('createReview', args = [cls.consumer.id, cls.food.id]) cls.user = User.objects.create_user(username = "testuser", password="password") cls.canteen = Canteen.objects.create(url = reverse("createReview", args=[self.consumer.id, self.food.id]) response = self.client.get(url) print(f"\nResponse URL: {url}") # Check that the form is displayed self.assertEqual(response.status_code, 200) self.assertTemplateUsed(response, "NTUFoodieApp/reviewform.html") # Print the response URL and template used # Confirm no review was created self.assertEqual(Review.objects.count(), 0) Expected: form to be redirected with url of correct consumer.id and food.id, with status code 200, using the correct html template. The review count should be 0 as it's just displaying the form, no review submitted yet.	Response URL: /consumer/create_review/1/1 / Response Status Code: 200 Templates used: NTUFoodieApp/reviewform.h tml Number of Review created: 0 test_createReview_get_requ est passed successfully
TC_CRV_ 002	Submit review successful	High	self.client.login(username="testuser", password="password") form_data = { 'rating': 4, 'description': "Delicious food!", } Consumer is logged in and inputs	response = self.client.post(self.create_review_url, data=form_data) # Check for redirection status code after successful review creation self.assertEqual(response.status_code, 302)	isBanned default value is True test_bannedUser_isBanned passed successfully

	into the review form with rating = 4 and description "Delicious food".	# Expected URL with trailing slash food_detail_url = reverse('foodDetail', args=[self.food.id]) Review should be posted to the create_review_url with the data inputs. Then, the user will be redirected to the food_detail_url, which is the same as the create_review_url, with status code 302. # Check if the review was created self.assertEqual(Review.objects.count(), 1) # Check if the rating was saved correctly review = Review.objects.first() self.assertEqual(review.rating, 4.0) # Verify if the food rating is updated self.food.refresh_from_db() self.assertEqual(self.food.rating, 4.0) # Check if success message was sent messages = list(get_messages(response.wsgi_reques t)) self.assertTrue(any("Review Created!" in str(message) for message in messages)) print(messages)	Response URL: /consumer/food/1/ Response Status Code: 302 Food Detail URL: /consumer/food/1/ Number of Review created: 1 Rating saved: 4.0 Updated Food Rating: 4.0 [Message(level=25, message='Review Created!')] test_createReview_successf ul passed successfully
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	Review should be successfully created, so count =1. The review should also capture the rating of 4.0, and a success message is displayed.	
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2.3.2 Store Owner Add Listing Views Test:

Test Case ID	Description	Priority	Input	Expected Output	Actual Output
TC_SOAL V_001	Store owner access	High	storeowner_group, created = Group.objects.get_or_create(name="storeowner") cls.user = User.objects.create_user(username = "teststoreowner", password="password") Store owner has to be logged in to see the listing page.	cls.url = reverse("soHome") response = self.client.get(self.url) print(f"Response URL: {self.url}") # Check that the form is displayed self.assertEqual(response.status_code, 200) self.assertTemplateUsed(response, "NTUFoodieApp/sohome.html") Expected: Listings page should be displayed in the store owner's home page, with url "soHome", with status code 200, using the correct html template.	Response URL: /storeowner/home/ Response Status Code: 200 Templates used: NTUFoodieApp/sohome.html test_storeOwner_access passed successfully

TC_SOAL V_002	Submit food listing successful	High	self.client.login(username="teststoreowner", password="password") cls.store = Store.objects.create(storeName = "Test Store") cls.food = Food.objects.create(store = cls.store) cls.form_data = { 'foodName': "Pork Chop Fried Rice", 'price': 5.50, 'type': "Non-Halal", 'cuisine': "Western", 'description': "Delicious food!", } Store owner is logged in and inputs into the listing form with foodName, price, type, cuisine and description.	cls.url = reverse("soHome") response = self.client.post(self.url, data=self.form_data) self.assertEqual(response.status_code, 302) self.assertRedirects(response, self.url) # Check if success message was sent messages = list(get_messages(response.wsgi_reques t)) self.assertTrue(any("Listing Added Successfully!" in str(message) for message in messages)) print(messages) Expected: Listing should be posted to the url with the data inputs. Then, the store owner will be redirected back to the url with status code 302, and a success message is displayed.	Response URL: /storeowner/home/ Response Status Code: 302 URL Redirected [Message(level=25, message='Listing Added Successfully!')] test_foodListing_creation passed successfully
TC_SOAL V_003	Invalid price input	High	self.client.login(username="teststoreowner", password="password") form_data_invalidPrice = self.form_data.copy() form_data_invalidPrice.update({ 'price': -10, })	response = self.client.post(self.url, data=form_data_invalidPrice) self.assertEqual(response.status_code, 200) # Check if error message was sent messages = list(get_messages(response.wsgi_reques	Response URL: /storeowner/home/ Response Status Code: 200 [Message(level=40, message='Error in price: * Price cannot be negative.')]

Store owner is logged in and inputs a negative price point to the listing.	t)) self.assertTrue(any("Error in price: * Price cannot be negative." in str(message) for message in messages)) print(messages)	test_invalidPrice_input passed successfully
	Expected: Store owner will be redirected back to url with status code 200, as the page successfully redirects back. However, listing is not added successfully, as price cannot be negative and an error message is displayed.	

2.3.3 Search Food Views Test:

Test Case	Description	Priority	Input	Expected Output	Actual Output
ID					·

TC_SFV_ 001	Search food by food name	High	self.client.login(username="testuser", password = "password") cls.food = Food.objects.create(foodName = "Pizza", store = cls.store, rating = 0) ls.food2 = Food.objects.create(foodName = "Burger", store = cls.store, rating = 5) Two food objects are created with foodName "Pizza" and "Burger". Consumer is logged in and searches for "Pizza".	response = self.client.get(reverse("searchFood"), {'searchKey': 'Pizza'}) #check that food page is displayed self.assertEqual(response.status_code, 200) self.assertTemplateUsed(response, "NTUFoodieApp/foodresult.html") self.assertContains(response, "Pizza") self.assertNotContains(response, "Burger") Expected: Search results should be displayed with only "Pizza", with status code 200, using the correct html template.	Pizza Response URL: /consumer/searchFood/ Response Status Code: 200 Templates used: NTUFoodieApp/foodresult.ht ml test_searchFood_by_foodNa me passed successfully
TC_SFV_ 002	Search food by canteen name	High	self.client.login(username="testuser", password = "password") cls.canteen = Canteen.objects.create(response = self.client.get(reverse("searchFood"), {'searchKey': 'Test Canteen'}) #check that food page is displayed self.assertEqual(response.status_code, 200) self.assertTemplateUsed(response, "NTUFoodieApp/foodresult.html") self.assertContains(response, "Pizza") self.assertContains(response, "Burger")	HTML display: Pizza <

				Expected: Search results should be displayed with both food "Pizza" and "Burger" as they are both part of "Test Canteen", with status code 200, using the correct html template.	ml test_searchFood_by_cantee nName passed successfully
TC_SFV_ 003	Search for food that doesn't exist.	High	self.client.login(username="testuser", password = "password") 'searchKey': 'Sushi' Consumer is logged in and searches for "Sushi".	response = self.client.get(reverse("searchFood"), {'searchKey': 'Sushi'}) #check that food page is displayed self.assertEqual(response.status_code, 200) self.assertTemplateUsed(response, "NTUFoodieApp/foodresult.html") self.assertNotContains(response, "Pizza") self.assertNotContains(response, "Burger") Expected: Search results will	HTML display: tbody is empty Sushi Response Status Code: 200 Templates used: NTUFoodieApp/foodresult.ht ml test_searchFood_noResults passed successfully
				be empty as there is no food object named "Sushi", status code is 200 as search results page will still be displayed, using the correct html template.	

2.3.4 Filter Food Views Test:

Test Case ID	Description	Priority	Input	Expected Output	Actual Output
TC_FFV_ 001	Filter food by minimum price	High	cls.food1 = Food.objects.create(foodName = "Sushi", price = 5.50, type = "Non-Halal", cuisine = "Japanese", isDiscounted = False, discountRate = 0) cls.food2 = Food.objects.create(foodName = "Pasta", price = 3, type = "Halal", cuisine = "Italian", isDiscounted = False, discountRate = 0) cls.food3 = Food.objects.create(foodName = "Fries", price = 7, type = "Halal", cuisine = "Western", isDiscounted = True, discountRate = 10) cls.food4 = Food.objects.create(foodName = "Chicken Burger", price = 10, type = "Halal", cuisine = "Western", isDiscounted = True, discountRate = 20) self.client.login(username="testuser", password = "password") Four food objects created to simulate the filtering. Consumer is logged in and filters food by a minimum price of \$4.	response = self.client.get(reverse('filterFood'), {'min_price': 4}) #check that food page is displayed self.assertEqual(response.status_code, 200) self.assertEqual(len(response.context['filt eredFood']), 3) self.assertTemplateUsed(response, "NTUFoodieApp/foodfilter.html") Expected: All food with price higher than \$4 are displayed in the filter results, with status code 200, using the correct html template.	<pre>HTML display:</pre>

TC_FFV_ 002	Filter food by maximum price	High	self.client.login(username="testuser", password = "password") 'max_price': 10 Consumer is logged in and filters food by a maximum price of \$10.	response = self.client.get(reverse('filterFood'), {'max_price': 10}) #check that food page is displayed self.assertEqual(response.status_code, 200) self.assertEqual(len(response.context['filt eredFood']), 4) self.assertTemplateUsed(response, "NTUFoodieApp/foodfilter.html") Expected: All food with price lower than \$10 are displayed in the filter results, with status code 200, using the correct html template.	HTML display: Sushi > Fries Chicken Burger > Chicken Burger > tbody> Response Status Code: 200 Number of Filtered Food: 4 Templates used: NTUFoodieApp/foodfilter.htm I
TC_FFV_ 003	Filter food by food type	High	self.client.login(username="testuser", password = "password") 'type': 'Non-Halal' Consumer is logged in and filters food by food type "Non-Halal".	response = self.client.get(reverse('filterFood'), {'type': 'Non-Halal'}) #check that food page is displayed self.assertEqual(response.status_code, 200) self.assertEqual(len(response.context['filt eredFood']), 1) self.assertTemplateUsed(response, "NTUFoodieApp/foodfilter.html")	HTML display: Sushi Sushi

				Expected: All non-halal food are displayed in the filter results, with status code 200, using the correct html template.	test_filterBy_foodType passed successfully
TC_FFV_ 004	Filter food by cuisine	High	self.client.login(username="testuser", password = "password") 'cuisine': 'Western' Consumer is logged in and filters food by cuisine "Western".	response = self.client.get(reverse('filterFood'), {'cuisine': 'Western'}) #check that food page is displayed self.assertEqual(response.status_code, 200) self.assertEqual(len(response.context['filteredFood']), 2) self.assertTemplateUsed(response, "NTUFoodieApp/foodfilter.html") Expected: All Western food are displayed in the filter results, with status code 200, using the correct html template.	HTML display: Fries Chicken Burger Response Status Code: 200 Number of Filtered Food: 2 Templates used: NTUFoodieApp/foodfilter.htm I I
TC_FFV_ 005	Filter by discounted food	High	self.client.login(username="testuser", password = "password") 'discounted': 'true' Consumer is logged in and filters food by discounted food.	response = self.client.get(reverse('filterFood'), {'discounted': 'true'}) #check that food page is displayed self.assertEqual(response.status_code, 200)	HTML display: Fries Chicken Burger

				self.assertEqual(len(response.context['filt eredFood']), 2) self.assertTemplateUsed(response, "NTUFoodieApp/foodfilter.html") Expected: All discounted food are displayed in the filter results, with status code 200, using the correct html template.	Response Status Code: 200 Number of Filtered Food: 2 Templates used: NTUFoodieApp/foodfilter.htm I test_filterBy_discountedFood passed successfully
TC_FFV_ 006	Filter food by combined criteria	High	self.client.login(username="testuser", password = "password") 'min_price': 3, 'max_price': 10, 'type': 'Halal', 'discounted': "true" Consumer is logged in and filters food by combined criteria.	response = self.client.get(reverse('filterFood'), {'min_price': 3, 'max_price': 10, 'type': 'Halal', 'discounted': "true"}) #check that food page is displayed self.assertEqual(response.status_code, 200) self.assertEqual(len(response.context['filt eredFood']), 2) self.assertTemplateUsed(response, "NTUFoodieApp/foodfilter.html") Expected: Food that meets this criteria is displayed in the filter results, with status code 200, using the correct html template.	HTML display: Fries Chicken Burger Response Status Code: 200 Number of Filtered Food: 2 Templates used: NTUFoodieApp/foodfilter.htm I