TESTING RESULTS LOGGING

Requirement 1: The system shall fetch all data required by the drone from a REST server. The system shall also verify all data fetched from the API.

Results of systematic partition testing:

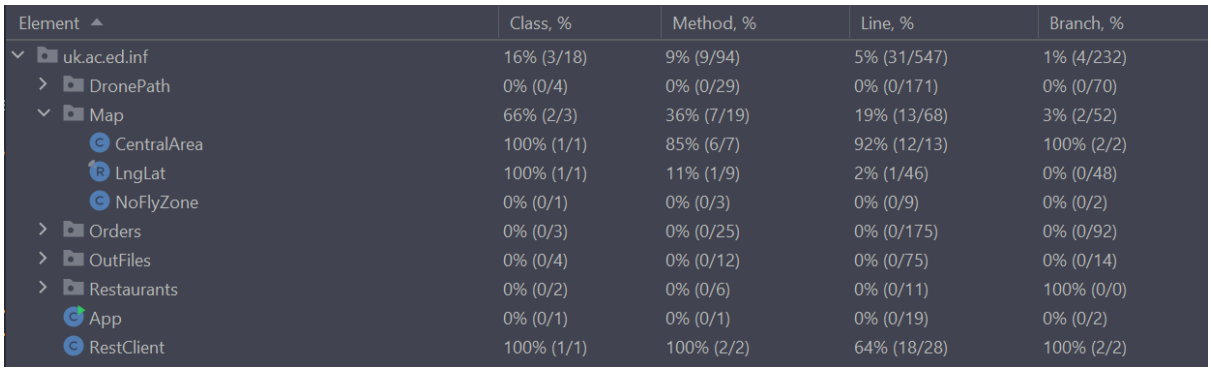
Test suite 1: Checking the validity of the base URL for the string input.

Test case	input	Expected output	Actual output	result
Input is a valid URL	"https://ilp-rest.azurewebsites.net/orders"	RestClient object was created, and no error message was sent	RestClient object was created, and no error message was sent	pass
Input is an empty string	""	Error message: URL provided is invalid	Error message: URL provided is invalid	pass
Input contains white spaces around the URL	" https://ilp-rest.azurewebsites.net/orders "	Error message: URL provided is invalid	RestClient object was created, and no error message was sent	fail
Input is an invalid URI	"google/com.com/https://"	Error message: URL provided is invalid	Error message: URL provided is invalid	pass
Input is a valid IRI reference	"https://ilp-rest.azurewebsites.net/bounding-box.geojson"	RestClient object was created, and no error message was sent	RestClient object was created, and no error message was sent	pass

Test suite 2: checking the data fetched from the REST server, assuming the URL has been validated.

Test case	Input	Expected output	Actual output	result
The server was responsive and data could be fetched from the server	"https://ilp-rest.azurewebsites.net/centralarea"	Central area coordinates fetched match the preset coordinates	Central area coordinates fetched match the preset coordinates	pass
The server was unresponsive	"https://stefanbirkner.github.com/"	Error message: System was unresponsive	Error message: System was unresponsive	pass
No data was returned from the server	"https://www.google.com"	Error message: URL entered was invalid	Error message: URL entered was invalid	pass

Results of structural testing:



Element	Class, %	Method, %	Line, %	Branch, %
uk.ac.ed.inf	16% (3/18)	9% (9/94)	5% (31/547)	1% (4/232)
DronePath	0% (0/4)	0% (0/29)	0% (0/171)	0% (0/70)
Map	66% (2/3)	36% (7/19)	19% (13/68)	3% (2/52)
CentralArea	100% (1/1)	85% (6/7)	92% (12/13)	100% (2/2)
LngLat	100% (1/1)	11% (1/9)	2% (1/46)	0% (0/48)
NoFlyZone	0% (0/1)	0% (0/3)	0% (0/9)	0% (0/2)
Orders	0% (0/3)	0% (0/25)	0% (0/175)	0% (0/92)
OutFiles	0% (0/4)	0% (0/12)	0% (0/75)	0% (0/14)
Restaurants	0% (0/2)	0% (0/6)	0% (0/11)	100% (0/0)
App	0% (0/1)	0% (0/1)	0% (0/19)	0% (0/2)
RestClient	100% (1/1)	100% (2/2)	64% (18/28)	100% (2/2)

Requirement 2: The system shall validate all orders received before generating a flight path for the drone.

Results of category-partition unit level test:

Test suite 1: Validating credit card number.

Test case	Input	Expected output	Actual output	result
Credit card number with 16 digits and correct the check digit	4355175523891417	True	True	Pass
Credit card number has less than 16 digits	2402902	False	False	Pass
Credit card number has symbols	5555 55555%57460	False	False	Pass
Credit card number has more than 16 digits	4111111111111111111	False	False	Pass
Credit card number's check digit fails the Luhn algorithm check	4111111111111114	False	False	Pass

Test suite 2: validating the credit card's expiry date.

Test case	Input	Expected output	Actual output	Results
The expiry date is after the date of the order	Expiry date: 04/28 Order date: 2023-01-01	True	True	Pass
The expiry date is before the date of the order	Expiry date: 07/12 Order date: 2023-03-29	False	False	Pass
The expiry date is on the month of the order	Expiry date: 02/23 Order date: 2023-02-28	True	True	Pass
The expiry date is not in the valid format	Expiry date: -1/24 Order date: 2022-12-24	False	False	Pass
The expiry date is not in the valid format	Expiry date: 01/2024 Order date: 2022-12-24	False	False	Pass

Test suite 3: validating the credit card's CVV.

Test case	Input	Expected output	Actual output	Results
CVV has 3 digits	922	True	True	Pass
CVV has more than 3 digits	1324	False	False	Pass
CVV has less than 3 digits	1	False	False	Pass
CVV has symbols	7@9	False	False	Pass

Test suite 4: validating the total given price of the pizza orders.

Test case	Input	Expected output	Actual output	Results
Total price given is equal to actual calculated total price	1600	True	True	Pass
Total price given is lower than the actual calculated total price	6000	False	False	Pass
Total price given is higher than the actual calculated total price	2000	False	False	Pass
Total price given is 0	0	False	False	Pass

Test suite 5: validating the total number of pizzas ordered.

Test case	Input	Expected output	Actual output	Results
1 pizza ordered	1 pizza	True	True	Pass
4 pizzas ordered	4 pizzas	True	True	Pass
Between 1 to 4 pizzas ordered	2 pizzas	True	True	Pass
Less than 1 pizza ordered	0 pizzas	False	False	Pass
More than 4 pizzas ordered	5 pizzas	False	False	Pass

Test suite 6: validating the pizza items ordered.

Test case	Input	Expected output	Actual output	Results
All pizzas ordered are from the same singular restaurant	1 pizza ordered from 1 restaurant	True	True	Pass
No pizzas were ordered	No pizzas ordered from any restaurants	False	False	Pass
Any pizza(s) ordered are from more than 1 restaurant	1 to 2 pizzas ordered from 3 different restaurants	False	False	Pass

Test suite 7: validating the type of pizzas ordered.

Test case	Input	Expected output	Expected output	Results
All pizzas ordered exist in any restaurant's menu	4 pizzas ordered from Papa John's menu	True	True	Pass
Any pizza(s) ordered do not exist in any restaurants menu	1 pizza ordered from Pepe's Pizza Place, 1	False	False	Pass

	pizza ordered from unlisted restaurant menu			

Results of functional integration level test:

Test suite: checking end to end data fetching from the REST server and order validation integration testing.

Test case	Input	Expected output	Actual output	Result
REST server was responsive and correct number of valid and invalid orders were fetched	URL: “https://ilp-rest.azurewebsites.net/orders /2023-01-01”	Valid orders: 7 Invalid orders: 40	Valid orders: 7 Invalid orders: 40	Pass

Results of structural test:

Element	Class, %	Method, %	Line, %	Branch, %
uk.ac.ed.inf	33% (6/18)	30% (29/94)	31% (173/547)	29% (68/234)
DronePath	0% (0/4)	0% (0/29)	0% (0/171)	0% (0/70)
Map	0% (0/3)	0% (0/19)	0% (0/68)	0% (0/52)
Orders	100% (3/3)	88% (22/25)	85% (150/175)	71% (67/94)
Order	100% (1/1)	81% (9/11)	62% (17/27)	0% (0/8)
OrderOutcome	100% (1/1)	100% (2/2)	100% (11/11)	100% (0/0)
OrderValidator	100% (1/1)	91% (11/12)	89% (122/137)	77% (67/86)
OutFiles	0% (0/4)	0% (0/12)	0% (0/75)	0% (0/14)
Restaurants	100% (2/2)	83% (5/6)	90% (10/11)	100% (0/0)
MenuItem	100% (1/1)	100% (1/1)	100% (1/1)	100% (0/0)
Restaurant	100% (1/1)	80% (4/5)	90% (9/10)	100% (0/0)
App	0% (0/1)	0% (0/1)	0% (0/19)	0% (0/2)
RestClient	100% (1/1)	100% (2/2)	46% (13/28)	50% (1/2)