COS80022 – Software Quality and Testing

Test Report for Lab 7

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1. Equivalence Partitioning

1.1 Test cases

By the given system definition,

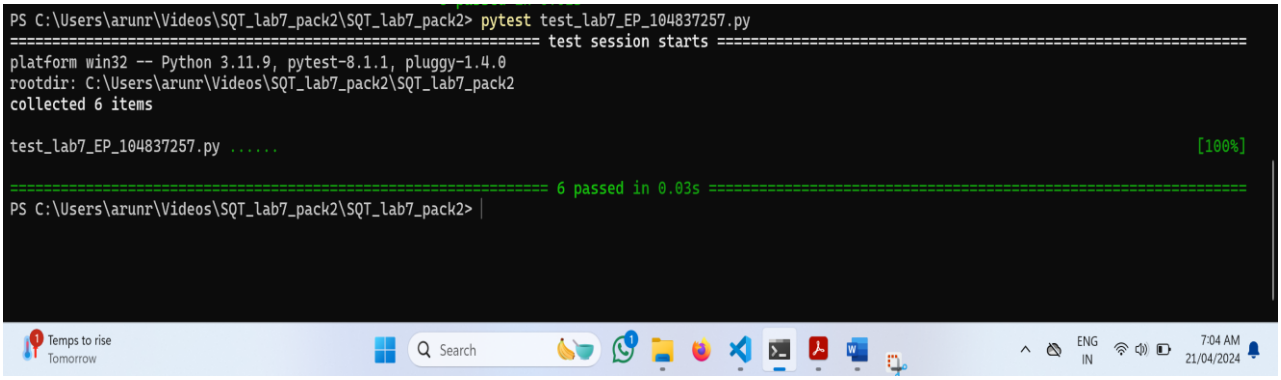
Customer gets an “appetizer” on reaching exactly 500 points, gets a “main course” on reaching 1500 points and a “fine dining set” when they exceed 5000 points and maximum point limit reaching 10,000 points.

- ⇨ Input - <0 – Partition 1 – “invalid”
- ⇨ Input - 0-499 - Partition 2 – “no reward”
- ⇨ Input - 500-1499 - Partition 3 - “appetizer”
- ⇨ Input - 1500 – 5000 – Partition 4 – “main course”
- ⇨ Input – 5001-10000 – Partition 5 – “fine dining set”
- ⇨ Input - >10000 – Partition 6 – “unable to earn >10000”

So, we have 6 partitions here, for each partition let us pick 1 test input value within the partition to test the function.

TC ID	Input for each Partition	Input Data	Expected Result	Actual Ouput
TC01	Integer<0	-45	“invalid”	“invalid”
TC02	Integer (0-499)	300	“no reward”	“no reward”
TC03	Integer (500-1499)	800	“appetizer”	“appetizer”
TC04	Integer (1500-5000)	3500	“main course”	“main course”
TC05	Integer (5001-10000)	8000	“fine dining set”	“fine dining set”
TC06	Integer>10000	12000	“unable to earn >10000”	“unable to earn >10000”

1.2 Screenshot of test results



The given program **loyalty.py** successfully passes all the test cases given , for the equivalence partition testing . Let us further test the program using boundary value analysis.

2. Boundary Value Analysis

2.1 Test cases

2 value Boundary value sets

(-1,0)

(499,500)

(1499,1500)

(5000,5001)

(10000,10001)

3 value Boundary value sets

(-1,0,1)

(499,500,501)

(1499,1500,1501)

(5000,5001,5002)

(10000,10001,10002)

2 BV:

TC ID	Boundary/Partition Tested	Input Data	Expected Result	Actual Output
TC01	Integer<0	-1	“invalid”	“invalid”
TC02	Integer(0-499)	0	“no reward”	“no reward”
TC03	Integer(0-499)	499	“no reward”	“no reward”
TC04	Integer(500-1499)	500	“appetizer”	“appetizer”
TC05	Integer(500-1499)	1499	“appetizer”	“appetizer”
TC06	Integer(1500-5000)	1500	“main course”	“main course”
TC07	**Integer(1500-5000)**	**5000**	**“main course”**	**“fine dining set”**
TC08	Integer(5001-10000)	5001	“fine dining set”	“fine dining set”
TC09	Integer(5001-10000)	10000	“fine dining set”	“fine dining set”
TC10	Integer(>10000)	10001	“unable to earn>10000”	“unable to earn>10000”

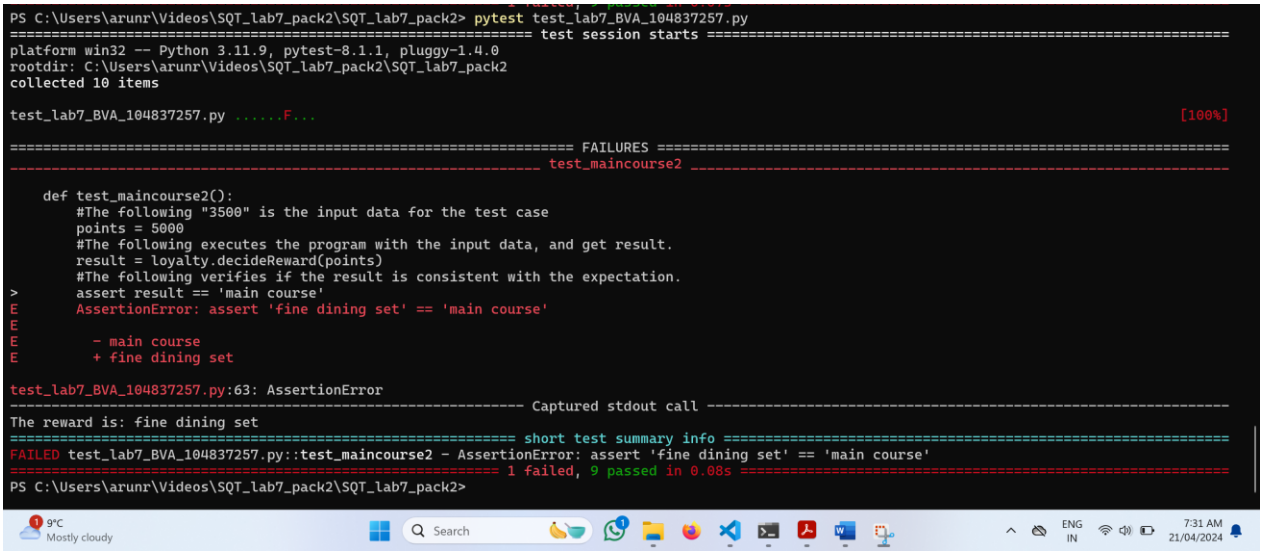
3 BV:

TC NO	Boundary/Partition Tested	Input Data	Expected Result	Actual Output
TC01	Integer<0	-1	“invalid”	“invalid”
TC02	Integer(0-499)	0	“no reward”	“no reward”
TC03	Integer(0-499)	1	“no reward”	“no reward”
TC04	Integer(0-499)	499	“no reward”	“no reward”
TC05	Integer(500-1499)	500	“appetizer”	“appetizer”
TC06	Integer(500-1499)	501	“appetizer”	“appetizer”
TC07	Integer(500-1499)	1499	“appetizer”	“appetizer”
TC08	Integer(1500-5000)	1500	“main course”	“main course”
TC09	Integer(1500-5000)	1501	“main course”	“main course”
TC10	**Integer(1500-5000)**	**5000**	**“main course”**	**“fine dining set”**
TC11	Integer(5001-10000)	5001	“fine dining set”	“fine dining set”
TC12	Integer(5001-10000)	5002	“fine dining set”	“fine dining set”
TC13	Integer(5001-10000)	10000	“fine dining set”	“fine dining set”
TC14	Integer(5001-10000)	10001	“unable to earn>10000”	“unable to earn>10000”
TC15	Integer(>10000)	10002	“unable to earn>10000”	“unable to earn>10000”

2.2 Screenshot of test results

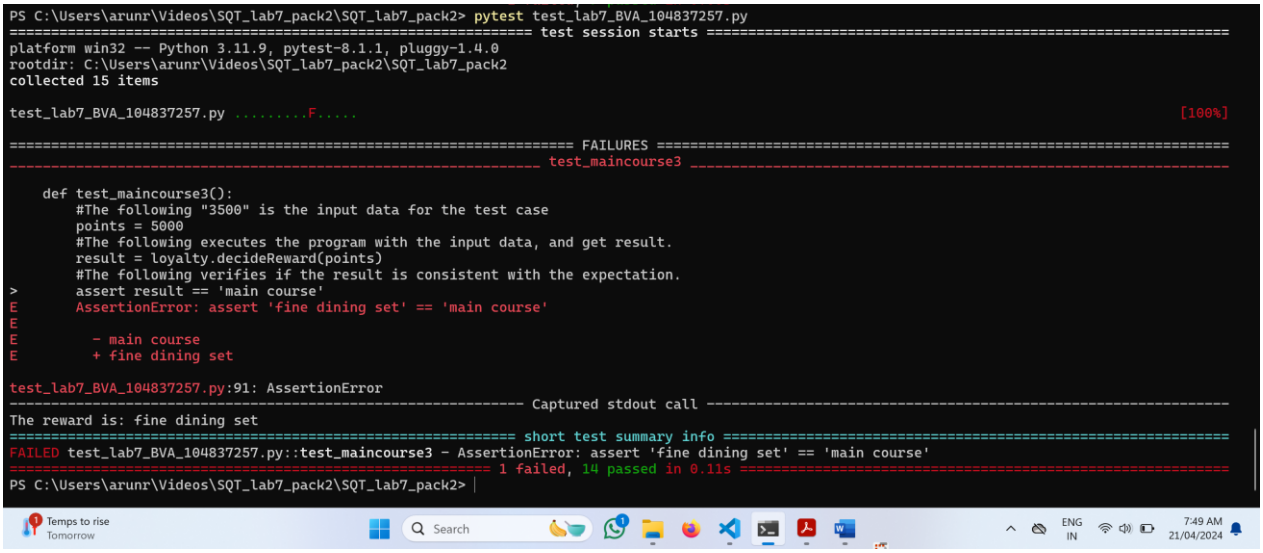
OUTPUT OF 2 BV ANALYSIS:

- Test result on running 2 BV analysis testing.
- One failed case, where “5000” should have actually been “main course “but is wrongly been displayed as “fine dining set.”



OUTPUT OF 3 BV ANALYSIS:

- Test result on running 3 BV analysis testing.
- Again, the same test case failed TC, where “5000” should have actually been “main course “but is wrongly been displayed as “fine dining set.”



3. Analysis of test results

The given program has an error in the boundary condition of "main course"

Current output:

Reward: 5000

Output: fine dining set

Reward: 5001

Output: fine dining set

Actual expected output as per program deifinition:

Reward: 5000

Output: main course

Reward: 5001

Output: fine dining set

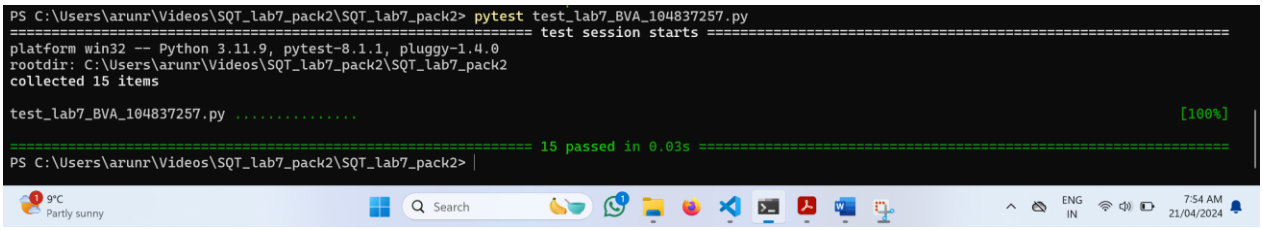
Part of the program that has the error:

```
else:
            if points < 5000:
                decision = "main course"
            else:
                if points <= 10000:
                    decision = "fine dining set"
                else:
                    decision = "unable to earn > 10000"
    print("The reward is: " + decision)
    return decision
```

De-bugged program after code correction:

```
else:
            if points <= 5000:
                decision = "main course"
            else:
                if points <= 10000:
                    decision = "fine dining set"
                else:
                    decision = "unable to earn > 10000"
    print("The reward is: " + decision)
    return decision
```

Test Output after Code correction:



- Now all the actual output match the expected output and all test cases have passed.

- Hence testing successfully completed.