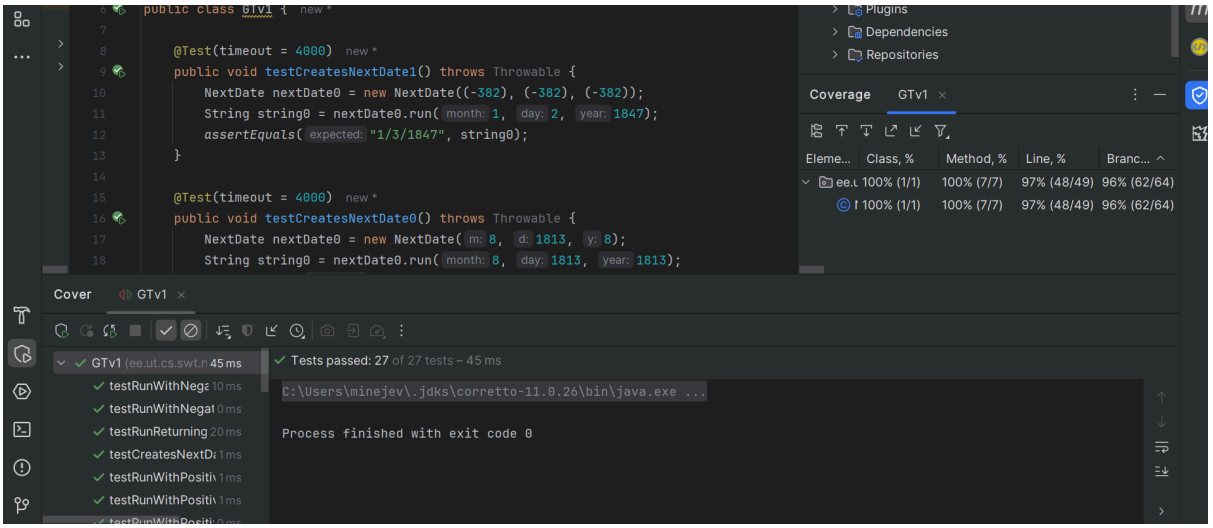
Task 1



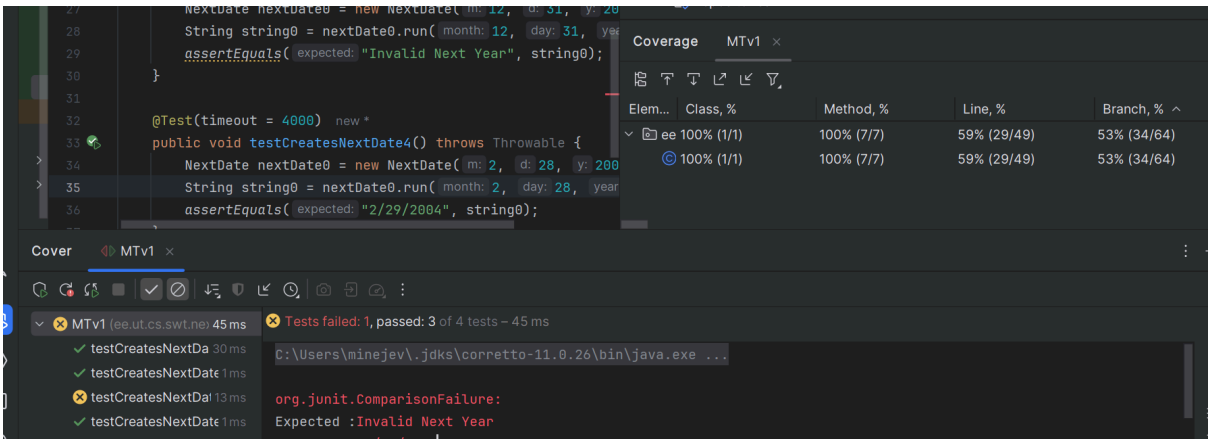


Table 1

Variable / Output	EC	Description	Covered by MTv1	Covered by GTv1
Month	M1	Valid month (1–12)	Yes	Yes
	M2	Invalid month (<1 or >12)	No	Yes
Day	D1	Valid day for given month and year	Yes	Yes
	D2	Invalid day (e.g., 2/30, negative)	No	Yes

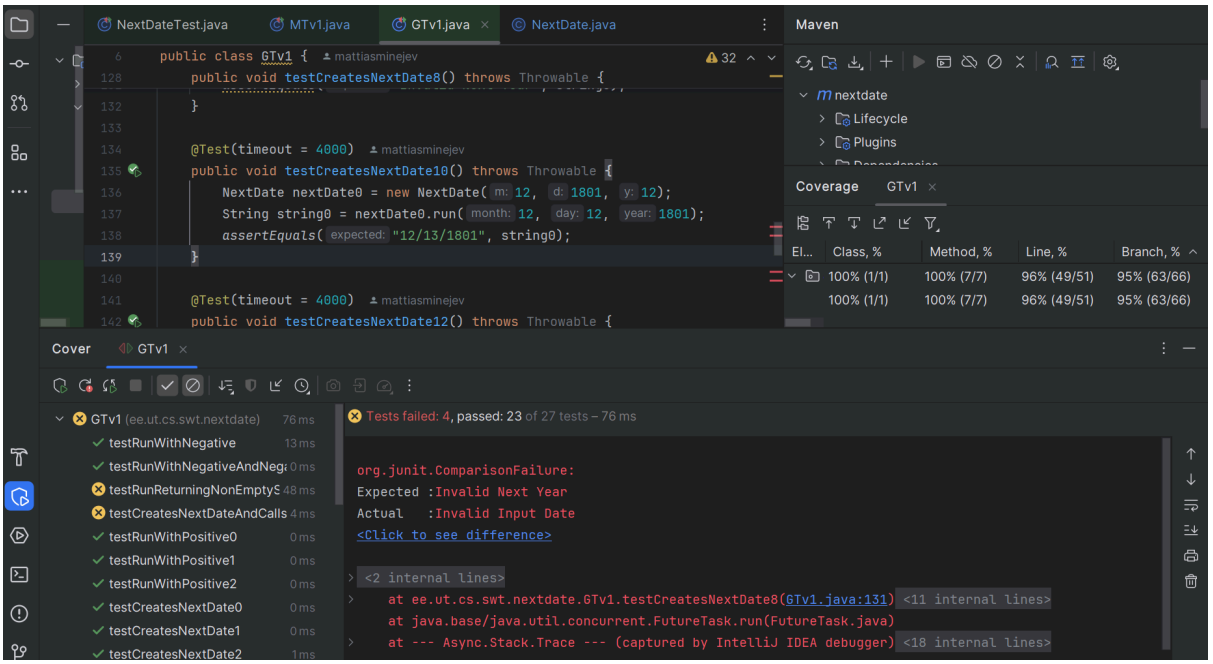
Year	Y1	Valid year (e.g., 1801–2021)	Yes	Yes
	Y2	Invalid year (<1801 or >2021)	No	Yes
Output	O1	Valid next day in same month	Yes	Yes
	O2	Month change (e.g., 1/31 → 2/1)	Yes	Yes
	O3	Year change (e.g., 12/31 → 1/1)	Yes	Yes
	O4	"Invalid Input Date"	No	Yes
	O5	"Invalid Next Year"	No (test failed)	Yes
	O6	Invalid output (e.g., 12/32/1915)	No	Yes

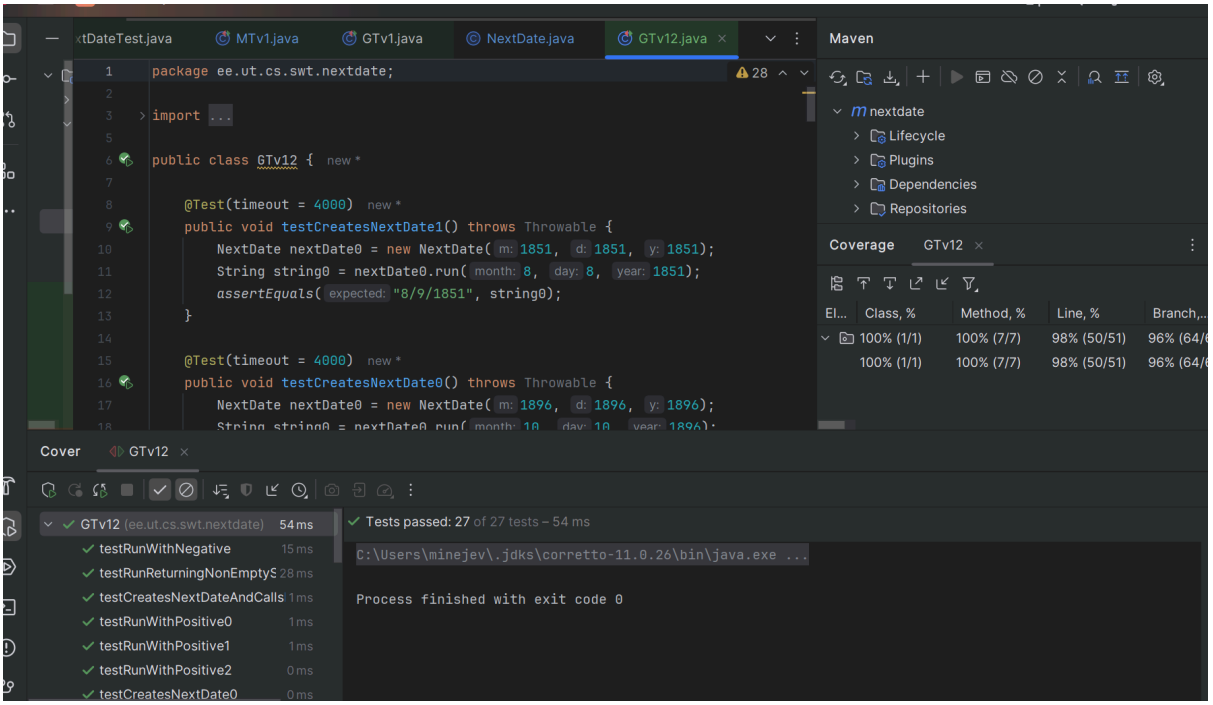
Table 2

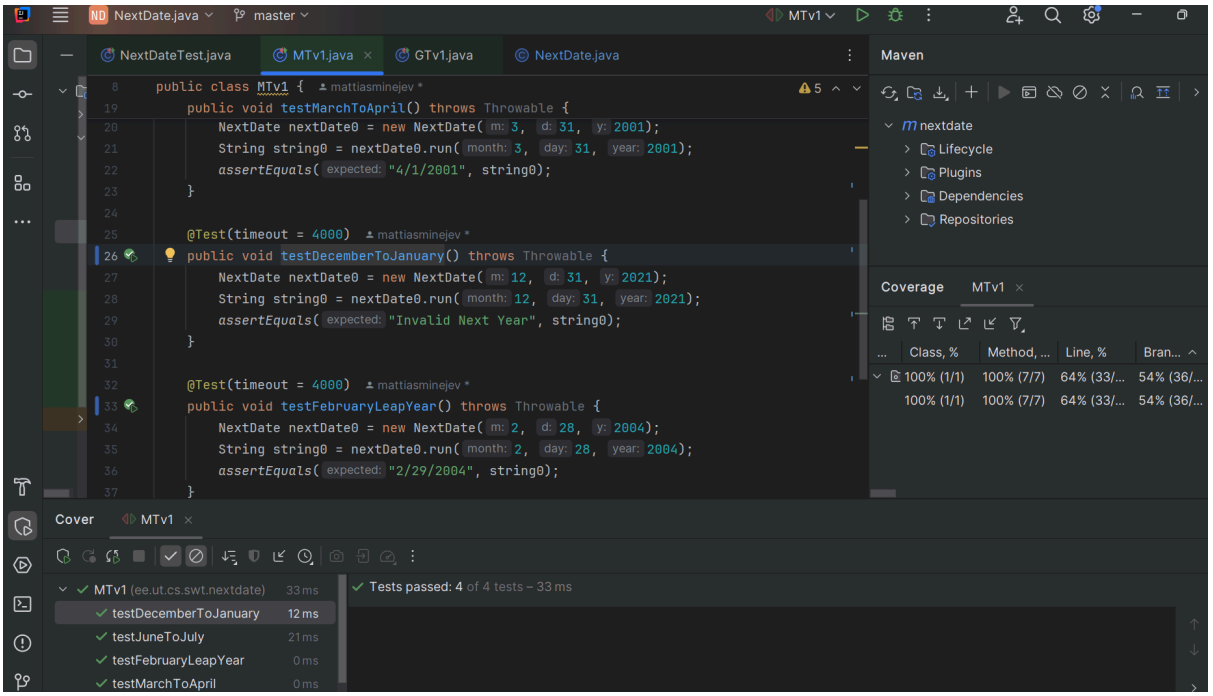
Aspect	**MTv1**	**GTv1**
Number of tests	4	27
Tests passed	3	27
Tests failed	1 (leap year test)	0
Input EC coverage	Only valid inputs	Valid and invalid inputs
Output EC coverage	O1, O2, O3	O1, O2, O3, O4, O5, O6
Detected failures	No actual detection (test failed due to wrong expectation)	Detected edge case outputs

Code coverage – Lines	59%	97%
Code coverage – Branches	53%	96%
Code coverage – Methods	100%	100%
EC coverage completeness	Partial	Comprehensive
Defect detection effectiveness	Low (missed logic)	High (validated corner cases)

Task 2

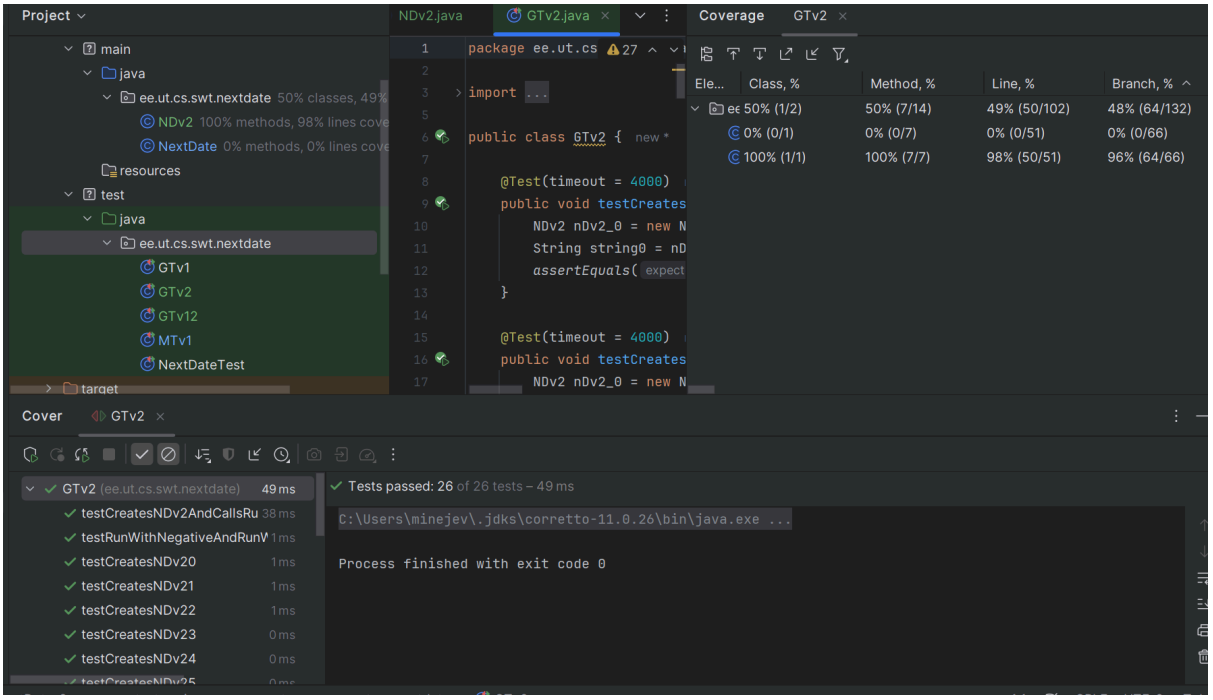


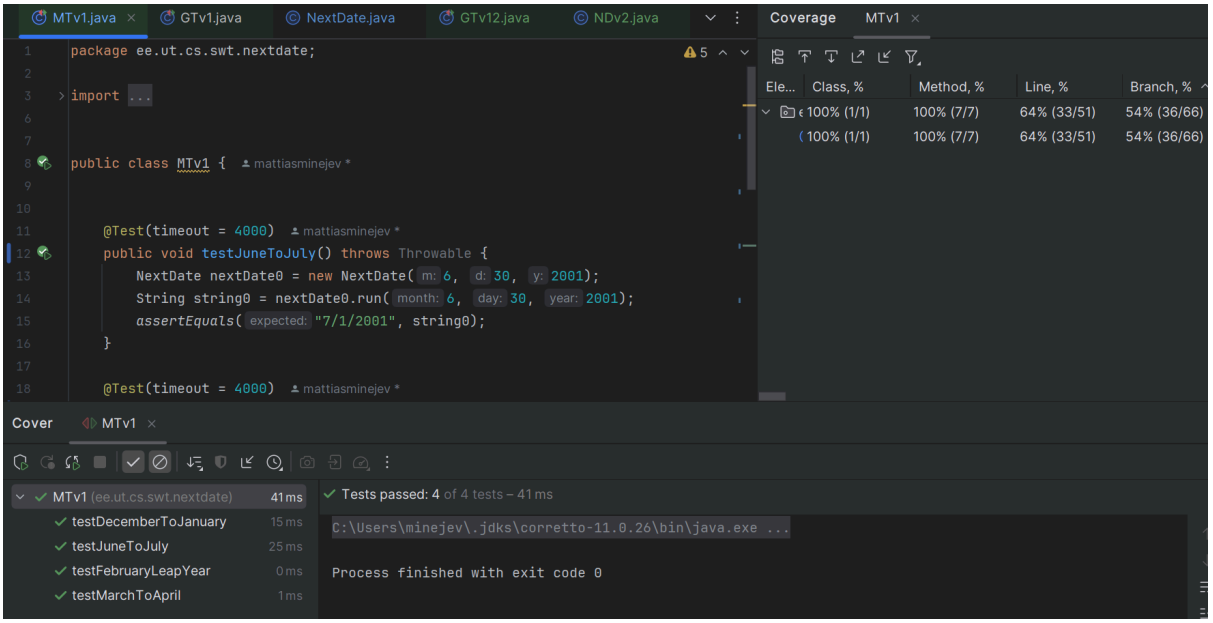




GTv1 made tests with wrong NextDate code therefore also the test inputs and expected outputs were wrong. Obviously GTv12 is better because it makes tests with corrected code.

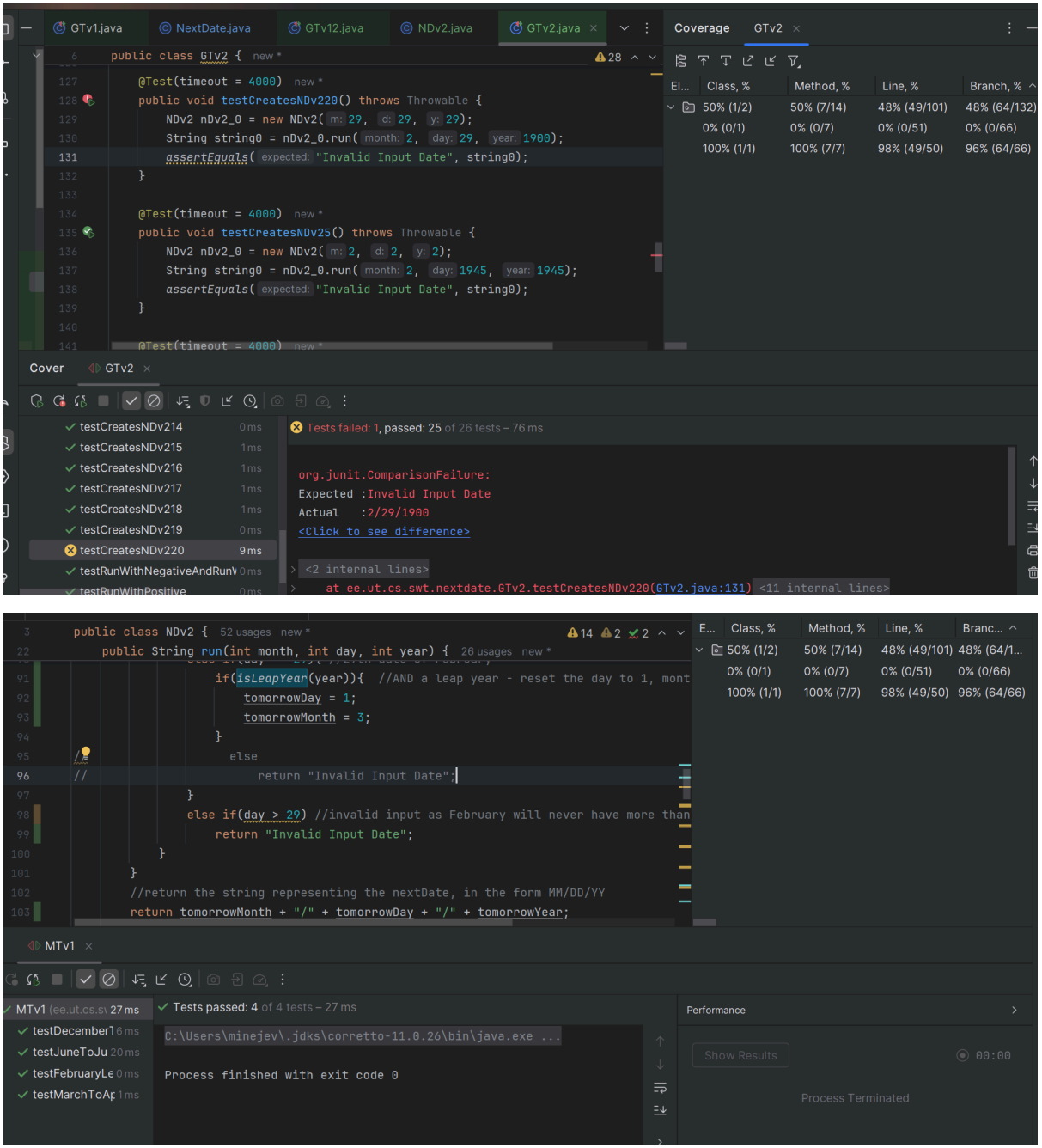
Task3





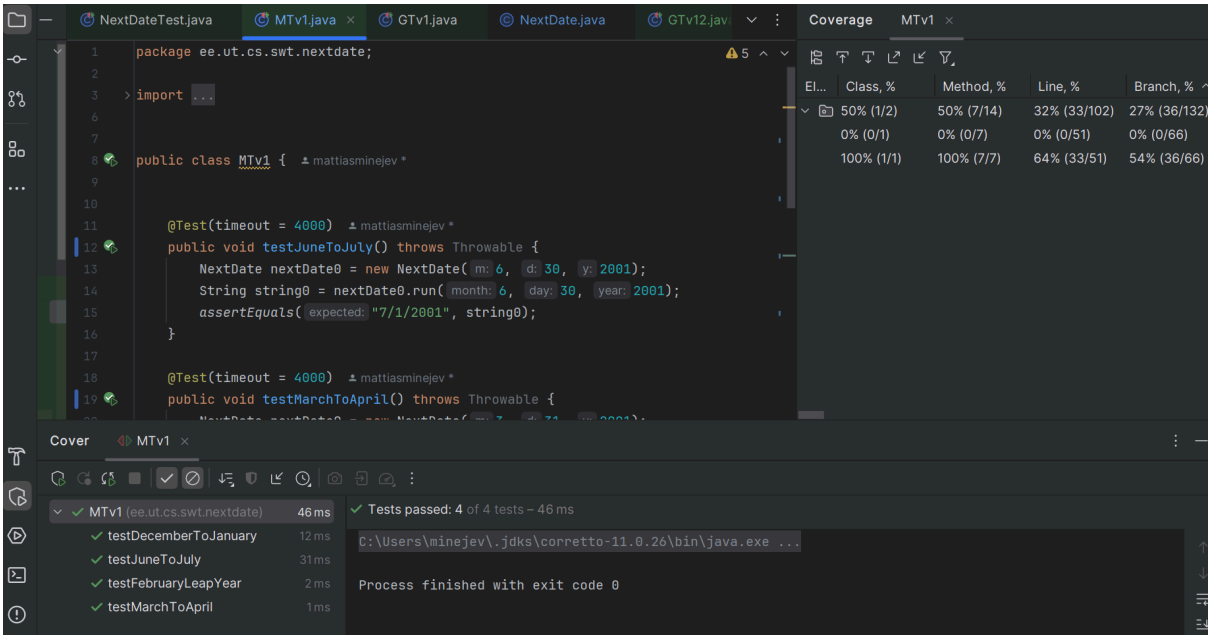
Due to isLeapYear already uncommented and working, both test files worked to perfection and all tests passed.

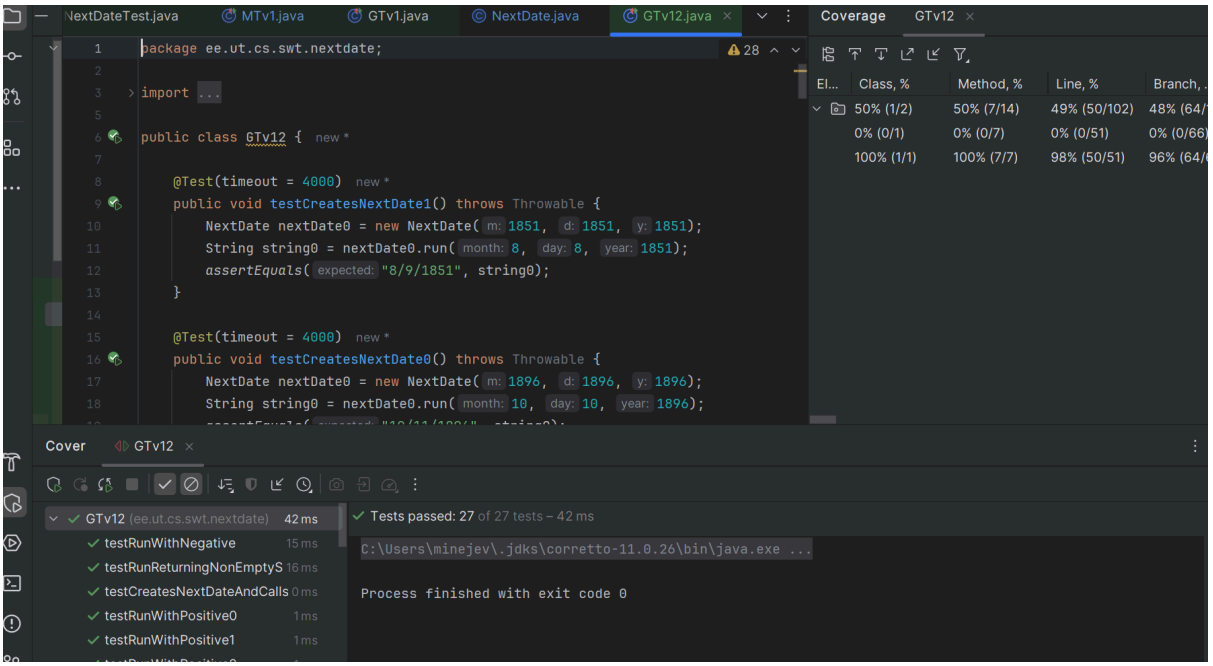
Task4.1



One test failed. it failed due to the method not being able to bring out error: “Invalid Input Date”.

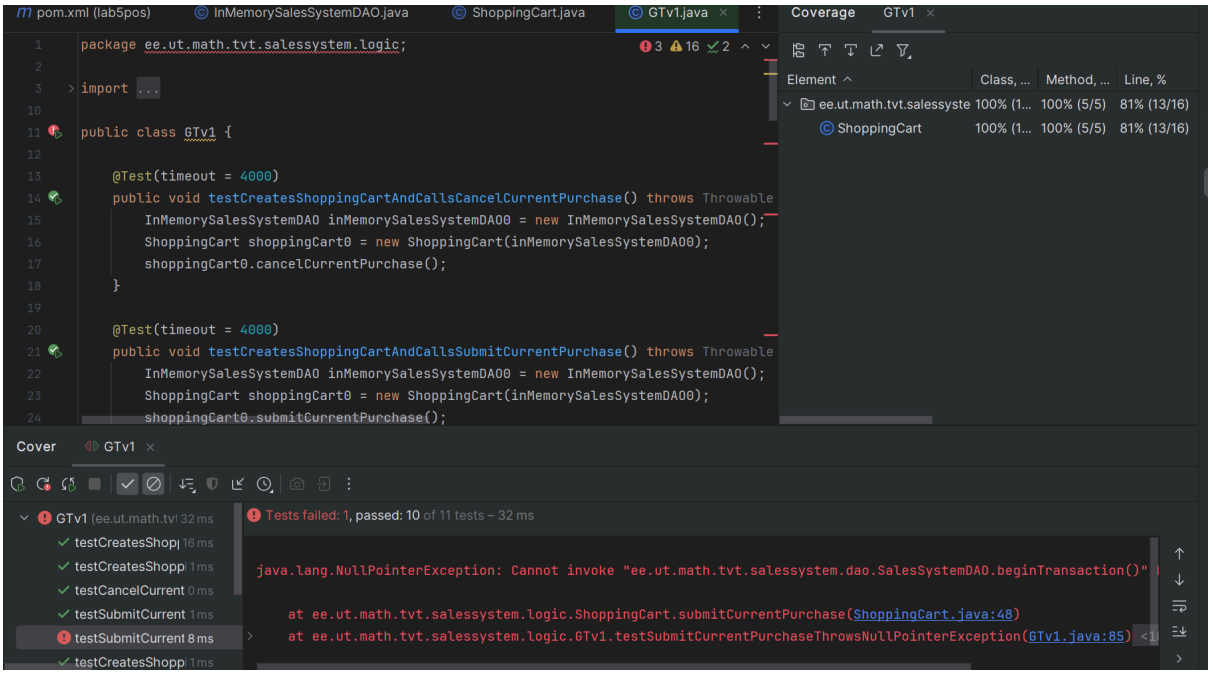
Task 4.2





Now the test works again. Nothing surprising.

Task 5



1. How strong is the generated test suite?

Päris tugev – katab 81% koodireadest ja 100% meetoditest.

2. How could you check the strength of the generated test suite?

Vaadates koodi katvust ja kontrollides, kas testid tuvastavad vigu (nt mutation testing).

3. What does the generated test suite say about the correctness of your program?

Põhiline loogika töötab, aga üks NullPointerException näitab, et kõik sõltuvused pole korrektselt algatatud.