

# 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
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**Table 2**

<b>Aspect</b>	<b>MTv1</b>	<b>GTv1</b>
<b>Number of tests</b>	4	27
<b>Tests passed</b>	3	27
<b>Tests failed</b>	1 (leap year test)	0
<b>Input EC coverage</b>	Only valid inputs	Valid and invalid inputs
<b>Output EC coverage</b>	O1, O2, O3	O1, O2, O3, O4, O5, O6
<b>Detected failures</b>	No actual detection (test failed due to wrong expectation)	Detected edge case outputs
<b>Code coverage – Lines</b>	59%	97%
<b>Code coverage – Branches</b>	53%	96%
<b>Code coverage – Methods</b>	100%	100%
<b>EC coverage completeness</b>	Partial	Comprehensive
<b>Defect detection effectiveness</b>	Low (missed logic)	High (validated corner cases)