

Task 5 – Dmytro Buialo, IP-15

1. The application allows a student to calculate his letter grade on the base on the grade out of 100 according to the rule:

The letter grade is A if the grade is not less than 88. If the grade is at least 80, then the letter grade is B. Letter C corresponds to at least 71, letter D – at least 62. Grade 50 is enough to be graded at E. All grades less than 50 correspond to F except of that less than 26, which is corresponds to FX letter grade.

Apply the EP and BVA techniques and specify test items in a table.

Equivalence Partitioning Technique:

Grade	Range	Testing Value	Valid/Invalid
A	88-100	95	Valid
B	80-87	84	Valid
C	71-79	72	Valid
D	62-70	69	Valid
E	50-61	53	Valid
F	26-49	33	Valid
FX	0-25	17	Valid
<i>(Not Applicable)</i>	$\leq -1 \parallel \geq 101$	-52	<i>(Invalid)</i>

Boundary Value Analysis Technique:

Grade	Range	Limit Values	Valid/Invalid
A	88-100	87, 88, 99, 101	All Valid but 101
B	80-87	79, 81, 86, 88	Valid
C	71-79	70, 72, 78, 80	Valid
D	62-70	61, 63, 69, 71	Valid
E	50-61	49, 51, 60, 62	Valid
F	26-49	25, 27, 48, 50	Valid
FX	0-25	-1, 1, 24, 26	All Valid but -1

2. The application allows a passenger to calculate the price of a ticket according to the rule:

Ticket price is calculated as a base price decreased by a discount.

The discount in percents is calculated as follows. If a passenger is registered on the site, he gets 5% discount. If he takes a two-way ticket, the discount is 10%. If he takes two or more tickets, he gets additional 3% discount.

Apply the decision table technique and specify test items in a separate table.

№	Registered	Two-way ticket	Two or more tickets	Discount
1	No	No	No	0%
2	No	No	Yes	3%
3	Yes	No	No	5%
4	Yes	No	Yes	8% (5%+3%)
5	No	Yes	No	10%
6	No	Yes	Yes	13% (10%+3%)
7	Yes	Yes	No	15% (10%+5%)
8	Yes	Yes	Yes	18% (10%+5%+3%)

1	An unregistered user, purchasing a one-way ticket and buying a single ticket (or purchasing nothing)	Discount 0%
2	An unregistered user, purchasing a one-way ticket and buying two or more tickets.	Discount 3%
3	A registered user, purchasing a one-way ticket and buying a single ticket.	Discount 5%
4	A registered user, purchasing a one-way ticket and buying two or more tickets.	Discount 8%
5	An unregistered user, purchasing a two-way ticket and buying a single ticket.	Discount 10%
6	An unregistered user, purchasing a two-way ticket and buying two or more tickets.	Discount 13%
7	A registered user, purchasing a two-way ticket and buying a single ticket.	Discount 15%
8	A registered user, purchasing a two-way ticket and buying two or more tickets.	Discount 18%

3. The application on a library terminal allows a user to find a book by various criteria (category, Author, name, ISBN number). Also, there is a possibility to click on a category and see the list of books in this category. In both cases, a user can tap on the book and see the description of this book. On that page, he can reserve this book and receive a reservation number and print it out in case if the book is available, or, in other case, he gets appropriate message.

Apply the state-transition technique and specify the test scenarios.



