

25.4 Test Design tasks: Homework

- Imagine you are testing an ordinary calculator. It is a web application that can perform 4 arithmetic operations. The UI has buttons with numbers, arithmetic actions, an expression input field and a result output field. There are also "equals" and "erase" buttons.
- You have no requirements for the application. The task is to cover the calculator with all possible tests.

The output is a checklist with checks.

Example of calculator:

| | | | |
|--------------------------------|---|---|---|
| (expression input field) 15+4= | | | |
| (result output field) 19 | | | |
| AC | (|) | % |
| 7 | 8 | 9 | ÷ |
| 4 | 5 | 6 | * |
| 1 | 2 | 3 | - |
| 0 | . | = | + |

1. Check that every button is appeared, and text is readable.
2. Check for every button that pressing on a button displays chosen number or action (except "erase" button).
3. Check input from different devices: keypad on PC/laptop, input using mouse, input by touch on the screen.
4. Check that "erase" button clears input field and result output field.
5. Check that after "erase" calculations starts from 0.
6. Check than it is impossible to input any other data except displayed on the calculator's buttons (impossible to input letters, symbols, etc.).
7. Check that it is impossible to use spaces.
8. Check that input data displayed in the input field.
9. Check that it is impossible to input any data in result output field.
10. Check input field limit (maximum).
11. Check result output field limit (maximum) by calculation large numbers.
12. Check arithmetic operations with positive numbers.
13. Check arithmetic operations with negative numbers.
14. Check arithmetic operations with positive and negative numbers.
15. Check arithmetic operations with floating point numbers.
16. Check arithmetic operations with zero.
17. Check that is impossible to divide by zero.
18. Check arithmetic operations including single digit, multi digits, floating points numbers.
19. Check that is possible to enter numbers in a row.
20. Check that it is impossible to enter arithmetic actions 2 or more times in a row.
21. Check that it is impossible to enter a point 2 or more times in a row.
22. Check that there is arithmetic action between every 2 points (for example .8 -.2 = 0.6).

23. Check that it is possible to enter a number starting from a point and it determined as 0."number" (for example, .2 is equals to 0.2 in calculations).
24. Check that if the first entered number is zero then it is impossible to enter another zero after it (no matter where this number placed in expression). Thus, it must be just one zero at the beginning of the number.
25. Check that calculation executes according to mathematical rules/order (parentheses, multiplication or division, addition and subtraction, and from left to right).
26. Check that entering any arithmetic action right after another overrides previous operator.
27. Check that after pressing "equals" button result displays in the "result output field".
28. Check that if there is any result in "result output field" and a user continues calculations the "starting point" is a data in "result output field" and not "zero".
29. Check that after closing and opening calculator after it, in the input & output fields displayed "0" or saved the last entered/calculated data (*here it depends on business requirements – to save entered data or to erase it*).
30. Check portability: different OS, desktop + different browsers, mobile/tablet + different browsers, application on different devices (desktop, mobile, tablet).