

## Levels and types of testing using a pen as an example

Firstly, working with requirements, specifying the testing object, setting criteria for the testing object. We create test documentation describing the quality characteristics of the pen (material, color, size) and what this pen will be used for

Definitely, test object: ballpoint pen with replaceable red refill.

### Pen testing by testing levels:

**Unit, module, component testing:** take the individual components of the pen - cap, shaft, body and check their quality, that they are intact and durable

**Integration testing.** ("Big Bang" Integration approach) Take the stem and place it in the body, then take the cap and place it on top of the body and stem and screw it on. Make sure the result is a durable structure.

**System testing** Make sure that the handle parameters correspond to the customer's requests and parameters. (Use case based) testing: take a pen and draw a straight line on drawing paper, thicker paper, or notepad paper

#### **Acceptance testing:**

Alpha testing: Invite independent testers or customers and test the pen

Beta testing.: Invite neighbors or friends with their equipment and test the handle

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### Pen testing by testing type:

**Functional testing:** Make sure the pen writes red on the paper without effort

#### **Non-functional testing:**

Stress: Check that there is enough ink in the pen to write a line 2 kilometers long. Check whether the pen will write with heavy pressure

Usability: Check the external condition of the pen, what color the body is, and whether it is comfortable to hold in your hand.

Configuration: Check whether the pen writes if the temperature in the room is 0 degrees, +30 degrees, -20 degrees. Check whether the pen will write on different surfaces: wood, cardboard, leather, plastic.

#### **Due to the changes:**

Smoke-testing: Take a pen in your hands and run the tip over a sheet of paper. Make sure that the result is a line.

Regression testing: change the refill of the pen to another and write the word on a piece of paper

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### Based on scenarios:

Positive: drag the tip of the pen across the paper

Negative: drawing the pen cap across the paper