# Homework: Test Levels and Test Types

## Unit Testing in the Real Life: Testing a Battery

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| --- | --- |
| **Test #1** | Check the battery size. It should comply with the AA standard. |
| **Test #2** | Check the battery label. Does it have everything in the AA standard? |
| **Test #3** | Check the physical condition. Does it have any damages on it? |
| **Test #4** | Check the voltage with digital multi-meter. Does it comply with the AA standard? |
| **Test #5** | Use external device as a test framework. Does it work with the battery? |

## Unit Testing in the Real Life: Testing a Light Bulb

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| --- | --- |
| **Test #1** | Check the glass. Is it as expected? |
| **Test #2** | Check the metal part. Does it comply with the E10 standard? |
| **Test #3** | Check the internal lighting mechanism. Does it look ok? |
| **Test #4** | Check if the circuit can be closed with the digital multi-meter. Does it work correctly? |
| **Test #5** | Use external device as a test framework. Does it work with the light bulb? |

## Unit Testing in the Software World: Age Checker

|  |  |
| --- | --- |
| **Test #1** | AgeChecker(-5) 🡪 error |
| **Test #2** | AgeChecker(0) 🡪 child |
| **Test #3** | AgeChecker(5) 🡪 child |
| **Test #4** | AgeChecker(13) 🡪 teenager |
| **Test #5** | AgeChecker(19.5) 🡪 teenager |
| **Test #6** | AgeChecker(20) 🡪 adult |
| **Test #7** | AgeChecker(64) 🡪 adult |
| **Test #8** | AgeChecker(65) 🡪 elder |
| **Test #9** | AgeChecker(100) 🡪 elder |
| **Test #10** | AgeChecker(150) 🡪 elder |
| **Test #11** | AgeChecker(151) 🡪 error |
| **Test #12** | AgeChecker(‘six’) 🡪 error |

## Unit Testing in the Software World: Income Checker

|  |  |
| --- | --- |
| **Test #1** | IncomeChecke (-0.1) 🡪 error |
| **Test #2** | IncomeChecke (-1) 🡪 error |
| **Test #3** | IncomeChecke (0.01) 🡪 low |
| **Test #4** | IncomeChecke (1) 🡪 low |
| **Test #5** | IncomeChecke (999) 🡪 low |
| **Test #6** | IncomeChecke (999.9) 🡪 low |
| **Test #7** | IncomeChecke (1000) 🡪 mid |
| **Test #8** | IncomeChecke (2999.9) 🡪 mid |
| **Test #9** | IncomeChecke (3000) 🡪 high |

## Integration Testing in the Real Life: Lighting the Bulb

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| --- | --- |
| **Test #1** | Connect the battery directly to the light bulb with 1 wire. Check if it is working. |
| **Test #2** | Connect the battery directly to the light bulb with 1 wire the other way. Check if it is not working. |
| **Test #3** | Connect the battery directly to the light bulb with 2 wire one way. Check if it is working. |
| **Test #4** | Connect the battery directly to the light bulb with 2 wire the other way. Check if it is not working. |
| **Test #5** | Connect the battery directly to the light bulb with 2 wires and switch one way with the switch on. Check if it is working. |
| **Test #6** | Connect the battery directly to the light bulb with 2 wires and switch one way with the switch off. Check if it is not working. |

## \* Integration Testing in the Software World: Ads

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| --- | --- |
| **Test #1** | As a registered user, log-in and check if the home page is displayed correctly. |
| **Test #2** | When not logged-in, try to log-in with invalid credentials. Check if you are not able to publish ads. |
| **Test #3** | As logged-in user, check if you are able to see user navigation box with options to publish a new add. |
| **Test #4** | As a logged-in user, check if you can browse ads by categories and/or by towns. |
| **Test #5** | As a logged-in user, check if there is a logout button. |
| **Test #6** | As not logged-in user, check if there is a log-in button. |

## \* Integration Testing in the Software World: Credit Risk

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | child | teenager | adult | elder | negative |
| low | 100% | 80% | 55% | 60% | Error |
| mid | 100% | 72% | 37% | 44% | Error |
| high | 100% | 64% | 19% | 28% | Error |
| error | Error | Error | Error | Error | Error |

## System Testing in the Real Life: Flashlight

|  |  |
| --- | --- |
| **Test #1** | With turned off flashlight, press the button and the flashlight turns on. |
| **Test #2** | With turned on flashlight, press the button and the flashlight turns off. |
| **Test #3** | Open the flashlight, change the batteries, close the flashlight. |
| **Test #4** | Turn on the flashlight. Leave it for 1 week. Check when it will turn off. |
| **Test #5** | Open the flashlight, change the bulb, close the flashlight. |
| **Test #6** | Turn on the flashlight, check the illumination distance. |
| **Test #7** | Drop the flashlight from 2m height. Check if it still works. |
| **Test #8** | Test the flashlight in environment with low temperature. |
| **Test #9** | Test the flashlight in environment with high temperature. |
| **Test #10** | Turn on the flashlight, shake it hard, check if it is still working. |

## System Testing in the Real Life: Digital Scale

|  |  |
| --- | --- |
| **Test #1** | Put the digital scale on the floor. The display should be off. |
| **Test #2** | Step on the digital scale with both feet. The display should show your weight in kg. |
| **Test #3** | Step on the digital scale with both feet and lean on the wall. The display should show less kg, than your weight. |
| **Test #4** | Step on the digital scale with both feet and hold in your hands a bottle filled with 2kg water. The display should show your weight + 2kg. |
| **Test #5** | While on the digital scale, step away with both feet. The display should show 0.00 and then should turn off. |

## System Testing in the Software World: Number Calculator

|  |  |
| --- | --- |
| **Test #1** | Test 5 / … => invalid input |
| **Test #2** | Test … / 5 => invalid input |
| **Test #3** | Test 4 / 2 => 2 |
| **Test #4** | Test 4 / 3 => 1.33333333333 |
| **Test #5** | Test 2 / 4 => 0.5 |
| **Test #6** | Test 0 / 10 => 0 |
| **Test #7** | Test 10 / 0 => Infinity |
| **Test #8** | Test 0 / 0 => invalid calculation |
| **Test #9** | Test 0 \* 0 => 0 |
| **Test #10** | Test 2\*2 => 4 |
| **Test #11** | Test 0.5\*0.5 => 0.25 |
| **Test #12** | Test -5 \* 2 => -10 |
| **Test #13** | Test -5 \* -5 => 25 |
| **Test #14** | Fill in the input fields Press Reset => all the fields should be cleared. |
| **Test #15** | Test 2 + 2 => 4 |
| **Test #16** | Press Calculate button with no input => invalid input |
| **Test #17** | Press Calculate with valid numbers, but with no operation chosen => invalid operation |

## Acceptance Testing in the Real Life: Flashlight

|  |  |
| --- | --- |
| **Test #1** | With turned off flashlight, press the button 3 times consecutively. The flashlight should turn on. |
| **Test #2** | I want to replace the battery. Open to check the type of batteries. Close. |
| **Test #3** | If the flashlight doesn’t work replace the battery. Press the button. The flashlight should turn on. |

## Acceptance Testing in the Real Life: Digital Scale

|  |  |  |
| --- | --- | --- |
| **Test #1** | Put the digital scale on the floor. The display should be off. |  |
| **Test #2** | Step on the digital scale with both feet. The display should show your weight in kg. |  |
| **Test #3** | Step on the digital scale with both feet and lean on the wall. The display should show less kg, than your weight. |  |
| **Test #4** | Step on the digital scale with both feet and hold in your hands a bottle filled with 2kg water. The display should show your weight + 2kg. |  |
| **Test #5** | While on the digital scale, step away with both feet. The display should show 0.00 and then should turn off. |  |
| **Test #6** |  |  |

## Acceptance Testing in the Software World: Number Calculator

|  |  |
| --- | --- |
| **Test #1** |  |
| **Test #2** |  |
| **Test #3** |  |

## Functional and Non-Functional Tests: Flashlight

System Testing

|  |  |
| --- | --- |
| **Functional Tests** | **Non-Functional Tests** |
| With turned off flashlight, press the button and the flashlight turns on. | Turn on the flashlight. Leave it for 1 week. Check when it will turn off. |
| With turned on flashlight, press the button and the flashlight turns off. |  |
| Open the flashlight, change the batteries, close the flashlight. |  |
|  |  |

Acceptance Testing

|  |  |
| --- | --- |
| **Functional Tests** | **Non-Functional Tests** |
| With turned off flashlight, press the button 3 times consecutively. The flashlight should turn on. |  |
| I want to replace the battery. Open to check the type of batteries. Close. |  |
|  |  |
|  |  |