# Homework: Software Quality Assurance Introduction

## Think Testing: Gas Station

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| **Problem #1** | Battery problem:   1. t is very old and its time has come 2. Lights left on for too long 3. It can be stolen quite cleverly, when paying for the fuel |
| **Problem #2** | Immobilizer problem. |
| **Problem #3** | The starter does not work. |
| **Problem #4** | The clutch pedal is not pressed if it is a manual gearbox or the brake if it is automatic. |
| **Problem #5** | Filled with wrong fuel. |
| **Problem #6** | He has the same car at the gas station and got into the wrong one. |

## Think Testing: Tooth Brushing

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| **Step #1** | **You take the toothpaste together with the brush.**   1. Wash the Brush with water. 2. We open the toothpaste and put a little paste on the tip of the brush. |
| **Step #2** | **Brushing teeth.(** **They are washed twice a day.)**   1. It starts with external rubbing of the upper teeth and those below. 2. We move to the middle section of the teeth above and below. 3. Then we move to the inner/back part of the teeth again from above and below. 4. Then we also rub the upper part of the tongue to remove food debris. Няма налично описание на снимката. |
| **Step #3** | Rinsing the mouth with water. |
| **Step #4** | Washing the toothbrush, then returning it to its place together with the toothpaste.   * it is checked whether the cap is rotated correctly so that it does not fall. |
| **Step #5** | Video instructions: https://www.youtube.com/watch?v=sMMlG7LtgnU |
| **Step #6** |  |

## Think Testing: 5 Kg Bag

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| **Test #1** | Eye contact. Is the item you bought us a bag?   * Is everything okay, is the bag ready? |
| **Test #2** | A few apples.   * We test the capacity, whether it will collect 5 kilograms. * If he manages to gain 5 kilos, we will try to increase the kilos. * If it breaks before reaching 5 kilograms, we take a new one for each case and repeat the experiment. * If the second attempt is not successful, then she will not be able to withstand 5 kg at all. |
| **Test #3** | Strength test.   * If the previous test "A few apples" was successful, we will check how many kilograms it can withstand by adding 1 kg each. it almost broke. * here we can check what the maximum volume is, whether it can collect something bulky and not so heavy. * Test with slightly moist products, fruits or vegetables. |
| **Test #4** | Convenience of the bag.   * First what are the handles. * Second, whether they are comfortable for carrying more weight. |
| **Test #5** | Handle comfort and durability test.   * How comfortable they are. * Do they hurt the hand for longer wear. * Do they fade with longer wear? |
| **Test #6** |  |

## Login Form UX Problems

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| **Problem #1** | Wrong distribution of the login form. |
| **Problem #2** | The locations of the email and password fields have been swapped. |
| **Problem #3** | **The correct arrangement:**   * First must be the User, then the password.   and navigation buttons should be symmetrically placed. |
| **Problem #4** | Тhere is a redundant logout button. |
| **Problem #5** | The forgotten password option is not spelled out properly. |
| **Problem #6** | Error in URL link.   * First, the name of the site is not correct. * Second, it says add to basket, which is also not correct, for the login form, LOGIN should be written. |
| **Problem #7** | Forgot registration button. |

## Weather Forecast Bug

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| **Mistake** | Temperatures in the weather forecast are displayed in Fahrenheit , instead of Celsius.  Example: min temp: 46 degrees; max temp 61 degrees -> should be min 7.7; max16  **The developer didn’t take into account that the weather forecast temperatures come in** °F |
| **Bug (location)** | The bug in the code , which displays the temperature on the screen. The temperature should be displayed in °C. It should be converted before displayed on the screen. |
| **Failure (symptoms)** | When the temperature is displayed , it should be shown un °C , not in °F |

## Age Checking Machine

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| The machine fails when the age is exactly 18. Fix:   * if **age >= 18**, then print "Welcome to our bar. Enjoy!" and the door opens.   The machine should also handle the case of “card cannot be read”. Fixed logic.   1. If age cannot read , then print “Card / age cannot be read” The door stays closed. 2. If age > 0, and age < 18, then print "You are too young to visit our bar". The door stays closed. 3. If age > 18, then print "Welcome to our bar. Enjoy!" and the door opens. 4. Otherwise, print "Invalid age. Please try again". |

## Testing an Electric Water Kettle

### Test Scenario: Boil Water

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| Test case | **Boil 1 liter of water 🡪 success** |
| Description | Pour 1 liter of water, start the kettle, and wait until it gets hot. |
| Steps | 1. Fill 1 liter of cold water in the kettle and close the boiler lid. 2. Plug the power base in the electrical network. 3. Plug the boiler into the power base. 4. Switch on the kettle. 5. Wait until the water gets hot and the kettle automatically switches off (2-3 minutes). |
| Expected results | The boiling process should complete in less than 4 minutes. If is does not complete in 4 minutes, we should witch the kettle off and report a failing test.  The water should get hot.  The kettle should automatically power off when the water gets too hot.  The kettle lid should stay closed. |

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| Test case | **Boil an empty kettle 🡪 fail** |
| Description | Try to boil an empty kettle (no water inside) and make sure the boiling stops (automatically switches off) almost immediately after starting. |
| Steps | 1. Empty the kettle (pour out any existing water) and close the boiler lid. 2. Plug the power base in the electrical network. 3. Plug the boiler into the power base. 4. Switch on the kettle. 5. Wait until the kettle automatically switches off (max 2 seconds). |
| Expected results | The process should complete in less than 2 seconds.  The kettle should automatically power off, shortly after the start.  The kettle lid should stay closed.  The kettle should stay not hot. |

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| Test case | **Measure the boiled water temperature** |
| Description | Measure the boiled water temperature 🡪 it should be 90 … 120 °C. |

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| Test case | **Boil not enough water 🡪 fail** |
| Description | Try to boil 150 ml water 🡪 the kettle should refuse to start. |

### Test Scenario: Look and Feel

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| Test case | **Check the look and feel** |
| Description | Check the kettle, the base, the power plug, the cables, etc. for obvious problems. |
| Steps | 1. … 2. … 3. … |
| Expected results | …  …  … |

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| Test case | **Check the kettle and base to match** |
| Description | Check if the kettle can be plugged correctly in the base. |
| Steps | 1. … 2. … 3. … |
| Expected results | …  …  … |

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| Test case | **Check the kettle capacity** |
| Description | Check if the kettle power consumption is ~ 1500 watt. |
| Steps | Use **Shelly Plug S** or other smart plug / wattmeter device to measure the power consumption:   * **0** watts when **off**. * **1400-1600** watts when **on**. |
| Expected results | …  …  … |

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| Test case | **Check power consumption** |
| Description | Check if the kettle capacity is 1 liter. |
| Steps |  |
| Expected results | …  …  … |

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| Test case | **Check for water leaks** |

### Test Scenario: Lid Test

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| Test case | **Open the lid** |

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| Test case | **Close the lid** |

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| Test case | **…** |

### Test Scenario: Extreme / Special Tests

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| Test case | **Boil ice cubes** |

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| Test case | **Boil tea, instead of water** |

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| Test case | **Power off (with the button) during boiling** |

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| Test case | **Power off (from the power plug) during boiling** |

### Test Scenario: Safety Tests

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| Test case | **Check for electrical power at the kettle and base surface** |

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| Test case | **Check the button temperature after boiling** |

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| Test case | **Test the kettle powered by +/- 10% of the typical voltage (220 V)** |

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| Test case | **Little water in the base** |

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## Testing a Coffee Machine

### Test Scenario: Coffee machine

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| Test case | **Water and Caffe 🡪 success** |
| Description | Pour water into the tank, prepare ground coffee, which is placed in the handle |
| Steps | 1. Pour the necessary water into the tank (mineral or filtered according to the manufacturer's requirements). 2. We take the handle and put the required amount of coffee in it and return it back to its place. 3. Turn on the coffee machine to heat up according to the manufacturer's requirements. 4. After it has already warmed up, we put on single coffee, then double, and the steamer. |
| Expected results | The expected result is, after successful heating, to first make single coffee, then double, and finally to work the steamer. |

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| Test case | **Water and Caffe 🡪 fail** |
| Description | **We try to turn on the coffee machine without water in the tank and without ground coffee in the strainer.** |
| Steps | 1. We check if we have emptied the water tank. 2. Then we check the strainer if it is empty. 3. We turn on the machine and try to select the coffee option without waiting the necessary time for it to heat up. 4. We try double coffee and the steamer. 5. Wait until the "hot water" indicator lights up. 6. Put an empty coffee cup under the coffee outlet. 7. Press the "brew small coffee" button. 8. Wait until the brew process finishes. |
| Expected results | What we expect is that when the machine is turned on, there is an audible signal and a light, there is no water.  Which will not allow choosing the type of coffee.  Steamer also not functioning.  If it accidentally starts, this is not good, because one of the protections is not functioning properly.  The brew process should complete in less than 50 seconds.  The coffee cup should hold a hot small coffee (60 ml).  The machine should stay powered on.  The "hot water" indicator light could be on or off (both states are correct).  The machine should have enough water in its water container (it should not beep). |

### Test Scenario: Look and Feel

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| --- | --- |
| Test case | **Check the look and feel** |
| Description | Check the caffe machine, the power plug, the cables, etc. for obvious problems. |
| Steps | 1. … 2. … 3. … |
| Expected results | …  …  … |

### Test Scenario: Machine On / Off

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| Test case | **Switch off 🡪 check light indicator** |

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| Test case | **Switch on with no water 🡪 beeping** |

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| Test case | **…** |

### Test Scenario: Safety Tests

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| Test case | **Check for electrical power at the caffe machine** |

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| Test case | **Check the button temperature after boiling** |

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| Test case | **Test the caffe machine powered by +/- 10% of the typical voltage (220 V)** |

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| Test case | **….** |