# Homework: Software Quality Assurance Introduction

## Think Testing: Gas Station

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| **Problem #1** | The fuel filler hole may not be closed; |
| **Problem #2** | The car key is not inserted; |
| **Problem #3** | The clutch pedal is not depressed; |
| **Problem #4** | A problem with the car’s battery; |
| **Problem #5** | The fuel supply system is not working; |

## Think Testing: Tooth Brushing

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| **Step #1** | Take the brush and the toothpaste; |
| **Step #2** | Put a pea-sized amount of toothpaste on the brush:   * unscrew the cap of the toothpaste; * gently squeeze the toothpaste until it comes out the size of a pea; * place the amount of toothpaste that has come out on the head of the toothbrush; |
| **Step #3** | Brush your teeth   * brush all of your upper teeth on the outside; * brush all of your upper teeth from the inside; * brush all of your bottom teeth on the outside; * brush all of your bottom teeth from the inside |
| **Step #4** | After brushing your teeth, rinse your mouth with water; |
| **Step #5** | Rinse the brush with clean water; |
| **Video:** | [**https://www.mouthhealthy.org/all-topics-a-z/brushing-your-teeth/**](https://www.mouthhealthy.org/all-topics-a-z/brushing-your-teeth/) |

## Think Testing: 5 Kg Bag

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| **Test #1** | **Inspect the paper bag**   * look at the paper bag to see if it looks like a shopping bag; * Inspect the paper bag if it is made of paper; * Inspect the paper bag for visible damage; * examine if the paper bag has handles; * examine if the paper bag has bottom; |
| **Test #2** | **Put some apple in the paper bag;**  **STEPS:** Put two apples in the paper bag;  **CHECKS:**   * Lift the paper bag and check if the handles support the weight; * Check if the apples are still inside; * Put out the apples – it should be easy |
| **Test #3** | **Put 5 kg apples**  **STEPS:** Put 5 kg apples in the paper bag /measured on a scale /;  **CHECKS:**   * Lift the paper bag and check if the handles support the weight; * Walking with the paper bag and run with it for 5 minutes and shake it; * Check if the apples are still inside; * Check if the paper bag is still intact and usable; |
| **Test #4** | **Overflow test;**  **STEPS:** Put 8 kg apples in the paper bag /measured on a scale /;  **CHECKS:**   * Lift the paper bag and check if the handles support the weight; * Walking with the paper bag and run wit it for 5 minutes and shake it; * Check if the apples are still inside; * Check if the paper bag is still intact and usable; |
| **Test #5** | **Smell test:**   * Checks if paper bag smells awful; |

## Login Form UX Problems

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| **Problem #1** | user name should be on the first place, password should be on the second place, than log in and remember me. |
| **Problem #2** | log in and log out should not be there at the same time. |
| **Problem #2** | URL login form should not be end with “add-to-basket” but “log in” |
| Proper form: |  |

## Weather Forecast Bug

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| **Mistake** | The developer made the following mistake:  Temperatures in the weather forecast are displayed in Fahrenheit, instead of Celsius.  Example: min temp: 46 degrees; max temp: 61 degrees and should be min 7.7; max 16  The developer did not consider that the weather forecast temp comes in F degrees. |
| **Bug (location)** | The bug is in the code which displayed the temp on the screen. The temp should displayed in C degrees. It should be shown in C degrees, not in F degrees. |
| **Failure (symptoms)** | Temp are shown wrongly in F degrees. When the temp is displayed it should be in C degrees |

## Age Checking Machine

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|  | The machines fails when the age is exactly 18.  The machine should also handle the case when **“card is not readable”**  Fix:   * If **age > = 18**, then **print** "*Welcome to our bar. Enjoy!*" and the door opens. |
|  | * **If age can not be read**, then print “Age can not be read”. The door stays closed. * If **age > 0**, and **age < 18**, then **print** "*You are too young to visit our bar*". The door stays closed. * If **age > =18**, then **print** "*Welcome to our bar. Enjoy!*" and the door opens. * **Otherwise**, **print** "*Invalid age. Please try again*". |

## Testing an Electric Water Kettle

### Test Scenario #1: Boiling 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.  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. |
| 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 lid should not be hot. |

### Test Scenario #2: Look and Feel

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| Test case #1 | **Check the look and feel** |
| Description | Check the kettle, the base, the power plug, the cables, etc for obvious problems. |

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| Test case #2 | **Check the kettle and base to match** |
| Description | Check if the kettle can be plugged correctly in the base. |

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| Test case #3 | **Check the kettle capacity** |
| Description | Check if the kettle capacity is 1 liter |

### Test Scenario #3: Lid test

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| Test case #1 | **Open the Lid** |

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| Test case #2 | **Close the Lid** |

### Test Scenario #3: Extreme/ special test

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| Test case #1 | **Boil ice cube** |

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| Test case #2 | **Boil tea, instead of water** |

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| Test case #3 | **Measure the boiled water temperature** |
| Description | Measure the boiled water temperature, it should be 90 to 120 C degree |

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| Test case #4 | **Boil not enough water – should be failed** |
| Description | Try to boil 150 ml water, the kettle should refuse to start |

## Testing a Coffee Machine

### Test Scenario#1:Look and Feel

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| Test case #1 | **Check the look and feel** |
| Description | Check if the coffee machine is consists of **machine body**, **water container** (holding water), **coffee outlet**, **hot water light indicator** and **3 buttons**:, is there a power plug cable, is there any obvious problems. |

### Test Scenario#2: Machine On / Off

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| Test case 1 | **Switch on success** |
| Description | Start the coffee machine, put water, put ground coffee in the outlet |
| Steps | 1. Power on the machine. 2. Plug the cable into the electrical socket. 3. Put ground coffee blend in the coffee outlet. 4. Fill the water container to its max level. 5. Push the Power ON button. 6. Wait 5 seconds to 2 minutes, until the "hot water" indicator lights up. |
| Expected results | The machine should stay powered on and automatically **heats the water.**  The "hot water" indicator light should be on after 5 seconds to 2 minutes from pushing the power ON button. |

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| Test case# 2 | **Switch on with no water  beeping** |

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| Description | Start the coffee machine, put ground coffee in the outlet |
| Steps | 1. Power on the machine. 2. Plug the cable into the electrical socket. 3. Put ground coffee blend in the coffee outlet. 4. Push the Power ON button. |
| Expected results | The machine should stay powered on.  The machine **starts beeping** (on intervals of 10 seconds, until powered off or until enough water is filled inside the container). |

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| Test case 2 | **Switch 0ff check light indicator** |
| Description | Switch 0ff the machinecheck light indicator |
| Steps | 1. Push the Power OFF button. |
| Expected results | The machine should stay powered off and automatically STOP **heats the water.**The "hot water" indicator light should be off immediately. |

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| Test case# 3 | **…** |

**"Power ON / Power OFF" button**, which switches the machine **on** and **off**.

### Test Scenario#2: Brew a Coffee

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| Test case 1 | **Brew a small coffee  success** |
| Description | Start the coffee machine, put water, put ground coffee in the outlet, and brew a cup of coffee. |
| Steps | 1. Power on the machine. 2. Put ground coffee blend in the coffee outlet. 3. Fill the water container to its max level. 4. Wait until the "hot water" indicator lights up. 5. Put an empty coffee cup under the coffee outlet. 6. Press the "brew small coffee" button. 7. Wait until the brew process finishes. |
| Expected results | 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). |

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| Test case 2 | **Brew a long coffee  success** |
| Description | Start the coffee machine, put water, put ground coffee in the outlet, and brew a cup of coffee. |
| Steps | 1. Power on the machine. 2. Put ground coffee blend in the coffee outlet. 3. Fill the water container to its max level. 4. Wait until the "hot water" indicator lights up. 5. Put an empty coffee cup under the coffee outlet. 6. Press the "brew long coffee" button. 7. Wait until the brew process finishes. |
| Expected results | The brew process should complete in less than 50 seconds.  The coffee cup should hold a hot small coffee (120 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). |

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| Test case | **Brew a coffee with no water  fail** |
| Description | Start the coffee machine, empty the water container, try to brew a cup of coffee, expect the coffee machine to start beeping to indicate that the water is not enough. |
| Steps | … |
| Expected results | … |

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| Test case | **Brew a coffee with not enough water  fail** |
| Description | Start the coffee machine, empty the water container, try to brew a cup of coffee, expect the coffee machine to start beeping to indicate that the water is not enough. |
| Steps | … |
| Expected results | … |

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| Test case | **Brew a coffee when water is not hot enough  fail** |
| Description | Start the coffee machine, empty the water container, try to brew a cup of coffee, expect the coffee machine to start beeping to indicate that the water is not enough. |
| Steps | … |
| Expected results | … |

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| Test case | **Brew a coffee with no coffee  fail** |
| Description | Start the coffee machine, empty the water container, try to brew a cup of coffee, expect the coffee machine to start beeping to indicate that the water is not enough. |
| Steps | … |
| Expected results | … |