# Homework: Software Quality Assurance Introduction

## Think Testing: Gas Station

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| **Problem #1** | **Dead battery – lifespan has expired/** |
| **Problem #2** | **There is a broken cable responsible for the ignition** |
| **Problem #3** | **The keys are missing/ The car chip is missing** |
| **Problem #4** | **The engine of the car is flooded** |
| **Problem #5** | **Wrong fuel** |
| **Problem #6** | **Loose wire** |
| **Problem #7** | **Clogged fuel filter** |
| **Problem #8** | **The car is missing** |

## Think Testing: Tooth Brushing

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| **Step #1** | **Take the toothpaste** |
| **Step #2** | **Open the cap** |
| **Step #3** | **Take the toothbrush** |
| **Step #4** | **Put a very small amount of paste on the teeth of the toothbrush** |
| **Step #5** | **Open your mouth** |
| **Step #6** | **Put the toothbrush in your mouth** |
| **Step #7** | **Close your mouth** |
| **Step #8** | **Start brushing** |

## Think Testing: 5 Kg Bag

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| **Test #1** | **Put 3kg products in the bag and test if it is not tearing apart - negative** |
| **Test #2** | **Put 5kg products in the bag and test if it is not tearing apart – negative** |
| **Test #3** | **Put 5kg + 50g products in the bag and test if it is not tearing apart – positive** |

## Login Form UX Problems

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| **Problem #1** | **The website address is wrong – it must be “my-wonderful-shop” not “your-wonderful-shop”** |
| **Problem #2** | **Login form address should not be “add-to-basket”, it needs to be “login”** |
| **Problem #3** | **There should not be “Log out” button** |
| **Problem #4** | **The password is above username. Username is always bevor password** |
| **Problem #5** | **After the password and username or Email address you need to add “:”** |
| **Problem #6** | **It would be Forgot your password” not “Lost your password”** |

## Weather Forecast Bug

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| **Mistake** | **The developer made the following mistake: that didn’t convert degrees in Celsius** |
| **Bug (location)** | **The bug in the code should be in the module / function, responsible for: degree conversation** |
| **Failure (symptoms)** | **When the buggy code goes in production, it fails as follows: It shows wrong data** |

## Age Checking Machine

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| * **The mistake is, when the person is 18 it gives “Invalid age”, that’s why it will be in second conditional statement “ >= 18“.** * **The wrong code will become a Bug** * **The result will be “Invalid age” when the person is 18 years old** |

## Testing an Electric Water Kettle

### Test Scenario #1: Boil Water

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| Test case #1 | **Boil 1 liter of water -> success** |
| Description | **1. Open the lid.**  **2. Fill 1 liter of cold water in the kettle and close the boiler lid.**  **3. Plug the power base in the electrical network.**  **4. Plug the boiler into the power base.**  **5. Switch on the kettle.**  **6. Wait until the water gets hot**  **7. The kettle automatically switches off (2-3 minutes).** |
| 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 | 1. **The boiling process should complete in less than 4 minutes.** 2. **The water should get hot.** 3. **The kettle should automatically power off when the water gets too hot.**   **The kettle lid should stay closed.** |

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| **Test case #2** | **Boil an empty kettle -> fail** |
| Description | **Boil an empty kettle (no water inside) and make sure the boiling stops (automatically switches off) almost immediately after starting.** |
| Steps | **1. Pour out all the water in the kettle**  **2. Plug the power base in the electrical network.**  **3. Plug the boiler into the power base.**  **4. Switch on the kettle.**  **5. The kettle automatically switches off.** |
| Expected results | 1. **The kettle automatically switches off because we don’t have water in the kettle. (0,5 to 2 seconds.** 2. **The kettle lid should stay closed.** 3. **There shouldn’t be any boiling process due to missing water.** |

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| **Test case #3** | **Boil 0,19l water-> fail** |
| Description | Boil an empty kettle (no water inside) and make sure the boiling stops (automatically switches off) almost immediately after starting. |
| Steps | **1. Open the lid.**  **2. Fill 0,19 liter of cold water in the kettle and close the boiler lid.**  **3. Plug the power base in the electrical network.**  **4. Plug the boiler into the power base.**  **5. Switch on the kettle.**  **6. The kettle automatically switches off.** |
| Expected results | 1. **The kettle automatically switches off because we don’t have water in the kettle. (0,5 to 2 seconds.** 2. **The kettle lid should stay closed.** 3. **There shouldn’t be any boiling process due to missing water.** |

### Test Scenario #2: Use the Lid

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| **Test case #1** | **Open lid -> success** |
| Description | **Press the open lid button. The lid opens** |
| Steps | 1. **Press the open lid button.** 2. **Watch the lid open.** |
| Expected results | **The lid should open** |

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| **Test case #2** | **Close lid -> success** |
| Description | **Press the lid with a hand. The lid close** |
| Steps | **1. Press the lid with hand.**  **2. Confirm the lid is closed.** |
| Expected results | **The lid should open.** |

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| **Test case #2** | **Open lid without button pressed -> fail** |
| Description | **Do not press the open lid button. The lid should not open.** |
| Steps | **1. Don’t press the open lid button.**  **2. Watch the lid open.** |
| Expected results | **The lid should not open.** |

### Test Scenario #3: Switch button

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| **Test case #1** | **Press the switch on button -> success** |
| Description | **Press the switch on button with a hand. Then the water will start to boil** |
| Steps | **1. Press the switch on button**  **2. Watch how the water starts to boil** |
| Expected results | **The water will become hot** |

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| **Test case #2** | **Press the switch off button -> success** |
| Description | **Press the switch off button with a hand. Then the water will stop to boil** |
| Steps | **1. Press the switch off button**  **2. Watch how the water stops to boil** |
| Expected results | **The water boiling will stop hot** |

### Test Scenario #4: Use the base

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| **Test case #1** | **Kettle on with base plugged in-> success** |
| Description | **Turn the kettle on while on the base and the base is plugged in** |
| Steps | **1. Plug the power base in the electrical network.**  **2. Plug the boiler into the power base.**  **3. Switch on the kettle.** |
| Expected results | **The kettle should turn on** |

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| **Test case #2** | **Kettle on with base plugged out -> fail** |
| Description | **Turn the kettle on while on the base and the base is plugged out.** |
| Steps | **1. Do not plug the power base in the electrical network.**  **2. Plug the boiler into the power base.**  **3. Switch on the kettle.** |
| Expected results | **The kettle should not turn on** |

## Testing a Coffee Machine

### Test Scenario #1: Brew a Coffee

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| Test case | **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 | **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 | 1. Press the button power on 2. Watch |
| Expected results | The machine will start to beep to indicate that the water container is empty |

### Test Scenario #2: Power button on/off

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| Test case #1 | Press power button on -> success |
| Description | **When power button is on the water will start to heat up. When is ready the hot water indicator will light on. Then choose the long or short café and the café will be ready.** |
| Steps | 1. Press the power button on. 2. The water will start to heat up. 3. Watch when the **hot water indicator light turns on** |
| Expected results | The water will start slowly to heat 5-10 seconds to 1-2 minutes.  Wait until **hot water indicator light turns on.** |

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| Test case #2 | Press power button off -> success |
| Description | **When power button is off the water will turn the power off and the water will start to cool.** |
| Steps | 1. Press the turn off button and the power will be turned off. 2. Watch |
| Expected results | The power will be turned off than тhe water will slowly start to cool. |

### Test Scenario #3: Adding little water for long/short coffee.

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| Test case #1 | The water is 110ml and try to make long coffee-> fail |
| Description | **It is adding water 110ml and it’s trying to make long coffee** |
| Steps | 1. Press the power button on. 2. The water will start to heat up. 3. Wait to heat from 5-10 seconds to 1-2 minutes. 4. The hot water indicator will be beeping. 5. Press the button for long coffee. |
| Expected results | The machine will not allow |

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| Test case #2 | The water is 50ml and try to make long coffee-> fail |
| Description | **It is adding water 50ml and it’s trying to make long coffee** |
| Steps | 1. Press the power button on. 2. The water will start to heat up. 3. Wait to heat from 5-10 seconds to 1-2 minutes. 4. The hot water indicator will be beeping. 5. Press the button for short coffee. |
| Expected results | 1. The machine will not allow |

### Test Scenario #4: When the water container is empty.

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| Test case #1 | When the water container is empty -> success |
| Description | When the water container is empty, the machine will start beeping. |
| Steps | 1. Press the power button on. 2. Wait |
| Expected results | The machine will start beeping. |

### Test Scenario #5: When the engine for heating water is broken.

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| Test case #1 | When the engine for heating water isn’t working and try to make a coffee -> fail |
| Description | When the engine for heating water isn’t working and try to make a coffee. |
| Steps | 1. Press the power button on. 2. Wait for the heating the water. 3. Press the button for coffee |
| Expected results | The machine will not make a coffee. |