**Homework: Software Quality Assurance Introduction**

* **Think Testing: Gas Station**

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| **Problem #1** | The woman has put a wrong fuel in the car. |
| **Problem #2** | The car has a mechanical issue. |
| **Problem #3** | The woman tries to start the wrong car. |
| **Problem #4** | The car got stolen. |
| **Problem #5** | The keys are missing. |
| **Problem #6** | There is something wrong with the woman. |

* **Think Testing: Tooth Brushing**

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| **Step #1** | Take the toothpaste. |
| **Step #2** | Unscrew the lid. |
| **Step #3** | Put the lid on the table. |
| **Step #4** | Take the toothbrush. |
| **Step #5** | Put little toothpaste on the toothbrush. |
| **Step #6** | Open your mouth. |
| **Step #7** | Put the toothbrush on your teeth. |
| **Step #8** | Close your mouth. |
| **Step #9** | Start brushing. |
| **Step #10** | When you are ready open your mouth. |
| **Step #11** | Leave the toothbrush on the table. |
| **Step #12** | Clean your mouth with water. |

* **Think Testing: 5 Kg Bag**

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| **Test #1** | Put 2kg products in the bag and test if it is not tearing apart. |
| **Test #2** | Put 5kg products in the bag and test if it is not tearing apart. |
| **Test #3** | Put 5kg + 200g products in the bag and test if it is tearing apart. |

* **Login Form UX Problems**

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| **Problem #1** | The webside name is "My Wonderful Shop" - the webside addres is "your-wonderful-shop.com". |
| **Problem #2** | Login form addres shoud not be "add-to-basket". |
| **Problem #3** | The buttons are not aligned. |
| **Problem #4** | There shoud not be "Log out" button. |
| **Problem #5** | Password is above username. |
| **Problem #6** | "Lost your password" link is under "Username or Email Address" box. |

* **Weather Forecast Bug**

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| **Mistake** | The developer made the following mistake: they did not convert the degrees to celsius. |
| **Bug (location)** | The bug in the code should be in the module / function, responsible for: degree conversion. |
| **Failure (symptoms)** | When the buggy code goes in production, it fails as follows: It shows wrong temperature data. |

* **Age Checking Machine**

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| The mistake is not including age equal to 18.  The wrong logic in the code is called "a bug".  It will result in Failure at age equal to 18. |

* **Testing an Electric Water Kettle**

**Test Scenario #1: Boil Water.**

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| Test case #1 | **Boil 1 liter of water -> succes** |
| Description | Pour 1 liter of water, start the kettle, and wait until it gets hot. |
| Steps | 1.Open the lid with the button.  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 (2-3 minutes).  7. The kettle automatically switches off. |
| 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 #2 | **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.Pour ot 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 | There should not be any boiling process.  The kettle should automatically power off due to missing water.  The kettle lid should stay closed. |

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| Test case #3 | **Boil 0,19l water -> fail** |
| Description | Start the kettle with 0,19l water inside. |
| Steps | 1.Open the lid with the button.  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 | There should not be any boiling process.  The kettle should automatically power off due to missing water.  The kettle lid should stay closed. |

**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 -> succsess** |
| Description | Press the lid with a hand.The lid should close. |
| Steps | 1. Press the lid with a hand.  2. Confirm the lid is closed. |
| Expected results | The lid should close. |

**Test Scenario #3: 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 pligged 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 kattle 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 pligged 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 #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 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. Power on the machine.  2. Put ground coffee blend in the coffee outlet.  3. Empty the water container.  4. Press the "brew coffee" button.  5. Coffee machine start beeping to indicate that the water is not enough. |
| Expected results | The brew process should not complete and the coffe machine will start beeping to indicate that the water container is empty. |

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

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| Test case #1 | **Switch on with full container -> success.** |
| Description | Switch on and check light indicator. |
| Steps | 1. Fill the water container.  2. Switch the power button on.  3. Check light indicator. |
| Expected results | When the machine is powered on, it automatically heats the water enough to be ready to brew a coffee. The water stays hot until the machine is switched off.  Depending on the internal water temperature, the water heating process could take from 5-10 seconds to 1-2 minutes.  When the water in the machine is hot enough to brew a coffee, the "hot water indicator light" is on. Otherwise, the light is off. |

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| Test case #2 | **Switch on with no water -> beeping.** |
| Description | Switch on with no water and see the results. |
| Steps | 1. Empty the water container.  2. Switch the power button on.  3. The machine starts beeping |
| Expected results | If the water container is empty, 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 #3 | **Switch off -> success.** |
| Description | Switch off. |
| Steps | 1. Switch off the power button.  2. Check light indicator. |
| Expected results | Machine is switched off. |