## Homework: Software Quality Assurance Introduction

## Think Testing: Gas Station

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| **Problem #1** | Low battery or stolen battery |
| **Problem #2** | Missing car (she is trying to start the wrong car) |
| 3 | Starter broken |
| 4 | Timing belt blocked or missing |
| 5 | Wrong fuel |
| 6 | Fuel pump, intake issues |
| 7 | Faulty immobilizers |
| 8 | Engine failure |
| 9 | Old spark plugs |
| 10 | No AdBlue (exhaust fluid) |
| 11 | Security feature( if the door or the fuel cap or the hood or the trunk are open cannot start the car) |

## Think Testing: Tooth Brushing

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| **Step #1** | Open the door of the bathroom |
| **Step #2** | Get in the bathroom |
| 3 | If the light is off turn it on. If it is on leave it on. |
| 4 | Walk towards the sink. |
| 5 | Check if the toothbrush and the paste are present. If they are not call mommy to find them for you |
| 6 | If mommy is not there call daddy |
| 7 | Open the toothpaste. |
| 8 | Take the brush and point it the hairy side up |
| 9 | Put toothpaste on the hairy side of the brush so it stays on the brush. If the toothpaste starts dripping off you put too much |
| 10 | Open your mouth and drive the toothbrush (with the paste on) in your mouth |
| 11 | Touch the side of your teeth with the toothbrush and start doing several types of motions - circular, back and forward and up and down. |
| 12 | Repeat the motions all over the sides of all of your teeth, the back and the top of the teeth. |
| 13 | If your mouth is full of foam spit part of it out and continue |
| 14 | Do this for 2.5 min. |
| 15 | Then leave the toothbrush on the sink |
| 16 | Open the sink and let water run. Make sure the temperature is ok for you |
| 17 | Rinse your mouth with water until there is no paste left in your mouth |
| 18 | Wash your toothbrush and leave it on its place |
| 19 | Close the sink faucet |
| 20 | Dry yourself |
| 21 | Walk out of the bathroom |
| 22 | Make sure the light is off before closing the door of the bathroom |
| 23 | If it is morning - put on your clothes and get ready for school  If it is evening - put on your pyjama and get ready for bed. |

## Think Testing: 5 Kg Bag

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| **Test #1** | Take 1 to 4,9 kg weight. Put it in the bag and lift it by holding it by the 2 handles simultaneously.  Repeat the test several times and see if and when the bag will break.  Make notes which part of the bag will break first.  Make notes if same part breaks each time or predominantly  Make notes which part stays intact |
| **Test #2** | Take 5kg or higher. Put it in the bag. Make notes when the bag doesn’t break. |
| 3 | Use the bag as long as it is intact with little weights. Make notes how long before the bag breaks |
| 4 | Put a wet weight and see how long before the bag tears. |
| 5 | Put something hot and see on what temperature the bag burns |
| 6 | Use something acidic and see how long before the bag breaks down |
| 7 | Freeze the bag and repeat several of the test above with a frozen bag. Compare timing of the bag breaking |

## Login Form UX Problems

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| **Problem #1** | Link of log-in not in the correct place (add-to basket) instead of(log-in) |
| **Problem #2** | Password field first. Usually it should be second |
| … | Password reveal button with opposite logic |
|  | "Lost your password?" missing a linked address to the text |
|  | Log in button off alignment, |
|  | Present a log-out button in a not logged-in case. |

## Weather Forecast Bug

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| **Mistake** | The developer made the following mistake: missing a function to convert Fahrenheit to celsius degrees |
| **Bug (location)** | The bug in the code should be in the module / function, responsible for: after receiving the API data in to the converting data module processing the temperature numbers |
| **Failure (symptoms)** | When the buggy code goes in production, it fails as follows: presenting extremely hot weather. Inaccurate data and icons presented. |

## Age Checking Machine

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| 1st. - there is no such age as -1  2nd - 18 is a legal age to enter a bar so : if age <= 18 print "Welcome to our bar. Enjoy!" and the door opens.  3rd - add the >= 0 age to the else condition  Code should look like this :  If age > 18: print("You are too young to visit our bar”). The door stays close:  Elif age <= 18: Print( "Welcome to our bar. Enjoy!”) the door opens.  Else (in any other case - this includes the cases zero and below ) print(“Invalid age. Please try again.”)  If we run the wrong code an 18 year old would not be able to enter the bar.  And the system would accept input as age = -39 as valid age |

## Testing an Electric Water Kettle

### Test Scenario #1: …

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| Test case #1 | **Boil 1l of water = Success** |
| Description | Verify that the kettle is able to boil 1 liter of water correctly. |
| Steps | 1. Fill 1 liter of cold water in the kettle and close the boiler lid. 2. Plug the power base into the electrical network. 3. Plug the kettle 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 #2 | Boil an empty kettle – fail |
| Description | Verify that the kettle will not start boiling when it is empty, and that it automatically switches off if an attempt is made to boil an empty kettle. |
| Steps | 1. Plug the power base into the electrical network. 2. Plug the kettle into the power base. 3. Switch on the kettle. 4. Observe the kettle for 0.5-2 seconds. |
| Expected results | The kettle should not start boiling.  The kettle should automatically switch off when it detects that it is empty. |

### Test Scenario #2: Lid Test

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| Test case #1 | **Open lid** |
| Description | Verify that the kettle's lid can be opened using the mechanical button. |
| Steps | 1. Plug the power base into the electrical network. 2. Plug the kettle into the power base. 3. Press the mechanical button to open the lid. |
| Expected results | …The lid should open easily and smoothly.  The kettle should not switch on or off when the lid is open. |

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| Test case #2 | **Close the lid** |
| Description | Verify that the kettle's lid can be closed by hand, without any buttons. |
| Steps | 1. Plug the power base into the electrical network. 2. Plug the kettle into the power base. 3. Open the lid by pressing the mechanical button. 4. Close the lid manually. |
| Expected results | The lid should close easily and smoothly.  The kettle should not switch on or off when the lid is closed. |

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## Testing a Coffee Machine

### Test Scenario #1 Brew a Coffee

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| Test case #1 | **Brew a small coffee - success** |
| Description | Verify that the coffee machine is able to brew a small coffee correctly. |
| 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 | …Verify that the coffee machine will not start brewing if the water container is empty and that it starts beeping to indicate that water is needed. |
| Steps | 1. Power on the machine. 2. Empty the water container. 3. Try to brew a cup of coffee. 4. Wait for the beeping to occur. |
| Expected results | The machine should start beeping to indicate that the water container is empty.  The machine should not brew the coffee. |

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

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| Test case #1 | Switch off - check light indicator |
| Description | Verify that the machine can be switched off, and that the "hot water" indicator light behaves correctly after the machine has been switched off. |
| Steps | 1. Power on the machine. 2. Wait until the "hot water" indicator light is on. 3. Press the "power off" button. 4. Observe the "hot water" indicator light. |
| Expected results | The machine should switch off.  The "hot water" indicator light should be off. |

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| Test case #2 | **Switch on with no water - beeping** |
| Description | Verify that the machine will start beeping if it is powered on with no water in the container. |
| Steps | 1. Empty the water container. 2. Power on the machine. 3. Observe the machine for beeping |
| Expected results | The machine should start beeping to indicate that the water container |

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