# Homework: Software Quality Assurance Introduction

## Think Testing: Gas Station

| Problem #1 | Wrong fuel. |
| --- | --- |
| Problem #2 | Problem with the car's engine. |
| Problem #3 | Problem with accumulator |
| Problem #4 | Wrong car. |
| Problem #5 | The car isn’t there. |
| Problem #6 | Lost keys. |
| Problem #7 | Something happened to the woman. |
| Problem #8 | The car is stolen. |
| Problem #9 | There is a problem with a gas station. |

## Think Testing: Tooth Brushing

| Step #1 | Take a toothbrush. |
| --- | --- |
| Step #2 | Run the water. |
| Step #3 | Slightly wet the head of the brush. |
| Step #4 | Stop the water. |
| Step #5 | Take the toothpaste. |
| Step #6 | Open the toothpaste. |
| Step #7 | Squeeze a small amount, the size of a bean, onto the brush head. |
| Step #8 | Close the toothpaste. |
| Step #9 | Put the toothbrush in your mouth on the lower teeth. |
| Step #10 | Brush your teeth from left to right |
| Step #11 | Brush your teeth from right to left. |
| Step #12 | Put the toothbrush in your mouth on the upper teeth. |
| Step #13 | Brush your teeth from left to right |
| Step #14 | Brush your teeth from right to left. |
| Step #15 | When the teeth are well washed, turn on the water again. |
| Step #16 | Rinse the teeth with water several times. |
| Step #17 | Rinse the toothbrush |
| Step #18 | Turn off the water. |
| Step #19 | Stop the water. |

## Think Testing: 5 Kg Bag

| Test #1 | With one weight of 3 kg. |
| --- | --- |
| Test #2 | With one weight of 5 kg. |
| Test #3 | With one weight of 5.2 kg. |
| Test #4 | With several weights with a total value of 3 kg. |
| Test #5 | With several weights with a total value of 5 kg. |
| Test #6 | With several weights with a total value of 5.2 kg. |
| Test #7 | With a slightly wet weight, resembling a frozen product. With a total weight value of 3 kg. |
| Test #8 | With a slightly wet weight, resembling a frozen product. With a total weight value of 5 kg. |
| Test #9 | With a slightly wet weight, resembling a frozen product. With a total weight value of 5.2 kg. |
| Test #10 | With objects that have sharp edges and different shapes. With a total weight value of 3 kg. |
| Test #11 | With objects that have sharp edges and different shapes. With a total weight value of 5 kg. |
| Test #12 | With objects that have sharp edges and different shapes. With a total weight value of 5.2 kg. |
| Test #13 | With moving objects, with a total weight of 3 kg. |
| Test #14 | With moving objects, with a total weight of 5 kg. |
| Test #15 | With moving objects, with a total weight of 5.2 kg. |

## Login Form UX Problems

| Problem #1 | The website address “your-wonderful-shop.com” is different from the website name which is "**My Wonderful Shop**" |
| --- | --- |
| Problem #2 | Login form address should not to be add-to-basket. |
| Problem #3 | First box should be: Username or Email Address. |
| Problem #4 | Second box should be: Password. |
| Problem #5 | Under password should be the checkbox “Remember me” |
| Problem #6 | The login button could be a bit wider. |
| Problem #7 | The Log out button should be removed. |
| Problem #8 | Under the login button can put a link for: "Forgot password" and “Need an account?” |

## Weather Forecast Bug

| **Mistake** | The developer made the following mistake: They did not convert degrees Fahrenheit to degrees Celsius. |
| --- | --- |
| **Bug (location)** | The bug in the code should be in the module / function, responsible for: Fahrenheit to Celsiusconversion |
| **Failure (symptoms)** | When the buggy code goes in production, it fails as follows: Shows wrong temperature results. |

## Age Checking Machine

| Mistake: Age checking is wrong becouse 18 year olds cannot enter.  A wrong logic in the code is called “a bug”.  The results will fail at age equal to 18. |
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## Testing an Electric Water Kettle

### Test Scenario #1: Boil Water

| Test case #1 | **Boil 1 liter of water → success** |
| --- | --- |
| Description | Pour 1 liter of water, start the kettle, and wait until it gets hot. |
| Steps | 1. Open the kettle lid. 2. Fill 1 liter of cold water in the kettle. 3. Close the boiler lid. 4. Plug the power base in the electrical network. 5. Plug the boiler into the power base. 6. Switch on the kettle. 7. 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. 4. The kettle lid should stay closed. |

| Test case #2 | **Boil 0.25 liters of water → success** |
| --- | --- |
| Description | Pour 0.25 liters of water, start the kettle, and wait until it gets hot. |
| Steps | 1. Open the kettle lid. 2. Fill 0.25 liters of cold water in the kettle. 3. Close the boiler lid. 4. Plug the power base in the electrical network. 5. Plug the boiler into the power base. 6. Switch on the kettle. 7. 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. 4. The kettle lid should stay closed. |

| Test case #3 | **Boil 0.18 liters of water → fail** |
| --- | --- |
| Description | Pour 0.18 liters of water, start the kettle, and wait until it automatically switches off. |
| Steps | 1. Open the kettle lid. 2. Empty the kettle. 3. Fill 0.18 liters of cold water in the kettle . 4. Close the boiler lid. 5. Plug the power base in the electrical network. 6. Plug the boiler into the power base. 7. Switch on the kettle. 8. Wait until the kettle automatically switches off. |
| Expected results | 1. The process should complete in less than 2 seconds. 2. The kettle lid should stay closed. |

| Test case #4 | **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. Open the kettle lid. 2. Empty the kettle. 3. Close the boiler lid. 4. Plug the power base in the electrical network. 5. Plug the boiler into the power base. 6. Switch on the kettle. 7. Wait until the kettle automatically switches off. |
| Expected results | 1. The process should complete in less than 2 seconds. 2. The kettle lid should stay closed. |

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### Test Scenario #2: Lid test

| Test case #1 | **Open lid → success** |
| --- | --- |
| Description | Push the button to open a lid. |
| Steps | 1. Get the kettle 2. Press the button to open the kettle lid. |
| Expected results | The button should open the kettle lid. |

| Test case # | **Open lid with a hot water inside → success** |
| --- | --- |
| Description | Test the button after the complete water heating process. |
| Steps | 1. Get the kettle 2. Press the button to open the kettle lid. 3. Fill the boiler with cold water. 4. Close the boiler lid. 5. Plug the power base in the electrical network. 6. Plug the boiler into the power base. 7. Switch on the kettle. 8. Wait until the kettle automatically switches off. 9. Press the button to open the kettle lid. |
| Expected results | The button should open the kettle lid. |

| Test case #3 | **Close lid → success** |
| --- | --- |
| Description | Close manuali the lid. |
| Steps | 1. Get the kettle 2. Open the lid. 3. Close the kettle lid manually. |
| Expected results | The kettle lid must remain closed. |

| Test case # | **Close lid with a hot water inside → success** |
| --- | --- |
| Description | Test the button after the complete water heating process. |
| Steps | 1. Get the kettle 2. Press the button to open the kettle lid. 3. Fill the boiler with cold water. 4. Close the boiler lid. 5. Plug the power base in the electrical network. 6. Plug the boiler into the power base. 7. Switch on the kettle. 8. Wait until the kettle automatically switches off. 9. Press the button to open the kettle lid. 10. Close the kettle lid manually. |
| Expected results | The kettle lid must remain closed. |

## Testing a Coffee Machine

### Test Scenario #1: Brew a Coffee

| 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. Plug the power cable in the electrical network. 2. Power on the machine. 3. Fill the container with water to the maximum. 4. Put ground coffee blend in the coffee outlet. 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 | 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 case | **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. Plug the power cable in the electrical network. 2. Power on the machine. 3. Fill the container with water to the maximum. 4. Put ground coffee blend in the coffee outlet. 5. Wait until the "hot water" indicator lights up. 6. Put an empty coffee cup under the coffee outlet. 7. Press the "brew long coffee" button. 8. 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). |

| 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. Plug the power cable in the electrical network. 2. Power on the machine. 3. Empty the water container. 4. Put ground coffee blend in the coffee outlet. 5. Wait until the "hot water" indicator lights up. 6. Put an empty coffee cup under the coffee outlet. 7. Press the "brew short coffee" button. 8. Wait until the machine starts beeping in intervals of 10 seconds. |
| Expected results | The brew process should not have.  The machine should start beeping in intervals of 10 seconds, until powered off or until enough water is filled inside the container.  The machine should stay powered on. |

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

| Test case | **Switch on and check light indicator to light → success** |
| --- | --- |
| Description | Start the coffee machine, put water and wait for the hot water indicator light. |
| Steps | 1. Plug the power cable in the electrical network. 2. Power on the machine. 3. Fill the container with water to the maximum. 4. Wait until the "hot water" indicator lights up. |
| Expected results | The hot water indicator light should be on for up to 2 minutes. |

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| Test case | **Switch off and check if the indicator light is on → fail** |
| --- | --- |
| Description | Start the coffee machine, wait for the hot water indicator light, and switch off. |
| Steps | 1. Plug the power cable in the electrical network. 2. Power on the machine. 3. Fill the container with water to the maximum. 4. Wait until the "hot water" indicator lights up. 5. Press power OFF button. |
| Expected results | The hot water indicator should be off. |

| Test case | **Switch on with no water → beeping** |
| --- | --- |
| Description | Start the coffee machine, empty the water container, the coffee machine should start beeping to indicate that the water is not enough. |
| Steps | 1. Plug the power cable in the electrical network. 2. Power on the machine. 3. Empty the water container. 4. Wait until the coffee machine starts beeping to indicate that the water is not enough. |
| Expected results | The machine should start beeping in intervals of 10 seconds, until powered off or until enough water is filled inside the container. |

| Test case | **…** |
| --- | --- |

### Test Scenario #3 : Coffee outlet

| Test case | **Make coffee with no coffee in coffee outlet → success** |
| --- | --- |
| Description | Start the coffee machine, put water, remove the outlet, and try to make a coffee. |
| Steps | 1. Plug the power cable in the electrical network. 2. Power on the machine. 3. Fill the container with water to the maximum. 4. Remove the coffee outlet. 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 | The brew process should complete in less than 50 seconds.  The coffee cup should hold hot water (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 case | **Make coffee without coffee outlet → success** |
| --- | --- |
| Description | Start the coffee machine, put water, remove the outlet, and try to make a coffee. |
| Steps | 1. Plug the power cable in the electrical network. 2. Power on the machine. 3. Fill the container with water to the maximum. 4. Remove the coffee outlet. 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 | The brew process should complete in less than 50 seconds.  The coffee cup should hold hot water (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). |