

# User Manual: Configuration File

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## Overview

This document outlines how to modify the simulation configuration file in order to achieve the desired experiment format. The application expects such a file to be named *sim\_config.txt*, and for it to be located in the *Water\_Sim.x.x/simulation\_one\_Data/InputData* directory. Failing to follow this naming convention or moving the file out of this location will result in the application being unable to start up properly. The configuration file supports a number of keyword-value pairs that can be easily combined to define the temporal structure of the simulation as well as auxiliary parameters.

## Keywords

### Simulation

This section includes information pertaining to high-level details of the simulation. This keyword is not tabbed; each of the following four keywords are tabbed once.

#### Name

For user convenience - offers a simple way of differentiating multiple configuration file setups. No restrictions on value.

#### Description

Similar to the above: offers a way to describe a given simulation configuration for documentation purposes. No restrictions on value.

## Instructions

Toggles whether or not instructions will appear throughout the experiment. These include both the *Day Zero* tutorial and pre-treatment instruction sets.

Possible values:

enabled  
disabled

## Sound

Disables or enables all sound effects within the scene, including water flow and countdowns, among others.

Possible values:

enabled  
disabled

## Sample Simulation Configuration:

Simulation

Name: April 2019 configuration .  
Description: Stronger impairments .  
Instructions: enabled  
Sound: enabled

## Tutorial

This keyword refers to the *Day Zero* tutorial preceding the main experiment. During this portion of the simulation, the user is required to earn a certain amount of money before being allowed to move on to the first paid day. The *Tutorial* keyword is not tabbed, while the *Score* keyword is tabbed once.

## Score

Sets the amount that the participant will need to earn to pass the tutorial day. If not specified, the default is **\$150.00**.

Possible values:

Any decimal number

## Sample tutorial configuration:

Tutorial

Score: 120

## Day

Signifies a new day to be included in the experiment. Each day may include the following sub-keywords: *Duration*, *Impairment*, and *Treatment*. The *Day* keyword is not tabbed, and each associated sub-keyword is tabbed once.

### Duration

This keyword refers to how long each day will last. This field is **mandatory**.

Possible Values:

minutes:seconds, where both components must be positive integers

### WaterValue

This keyword allows for the payout per droplet to be adjusted. This is not a required field, and by default it is set to 1.

Possible Values:

Any decimal number

### Impairment

This keyword will determine which impairments will be in effect during the day. There can be one or more impairments imposed on a single day, and each one requires its own *Impairment* keyword. *Impairment* is tabbed once. Associated sub-keywords, *Type* and *Strength*, are tabbed twice.

#### Type

Possible values:

Physical/Shake

Visual/Fog

#### Strength

Possible values:

Any integer between 0-100 followed by a % sign

### Treatment

This keyword is used to specify which treatment options will be available to the participant on the given day. The cost of obtaining a treatment follows the functional form of  $C(c - bT + aT^2)$ , where by default, the values of a, b, and c are 1/day length in minutes, 2, and day length in minutes, respectively. The functional form is consistent across both pay-style treatments (where cost is in dollars), and wait-style treatments (where cost is in seconds). When the *Wait* or *Cost* keywords are included, their respective **C** values are **mandatory**; and, if all three of their respective a, b, and c values are excluded entirely, they will be set to default.

Typically, a treatment alleviates 100% of all active impairments, with 100% certainty. If desired, these two values can be modified using the *Effectiveness* keyword, with sub-keywords *Effect*, and *Probability*, respectively. These two fields are not mandatory and will default to 100% each if excluded.

*Treatment* is tabbed once while sub-keywords *Effectiveness*, *Wait*, and *Cost* are tabbed twice. *C*, *a*, *b*, *c*, *Effect*, and *Probability* are tabbed three times.

#### **C**

Possible values:

Any decimal number

#### **a, b, c**

Possible values:

Any decimal number

default

#### **Effect**

Possible values:

Any decimal number, followed by a % sign

#### **Probability**

Possible values:

Any decimal number, followed by a % sign

## Sample Configuration File

### Simulation

Name: Full sample configuration file  
Description: Sample 3-day (plus intro) configuration file  
Instructions: enabled  
Sound: enabled

### Tutorial

Score: 180

### Day

Duration: 1:30

### Day

WaterValue: 1.50

Duration: 1:30

### Impairment

Type: Physical/Shake

Strength: 70%

### Day

WaterValue: 1.25

Duration: 2:00

### Impairment

Type: Visual/Fog

Strength: 75%

### Impairment

Type: Physical/Shake

Strength: 50%

### Treatment

#### Effectiveness

Probability: 50%

Effect: 90%

#### Wait

C: 0.5

a: 0.1111

b: 3

c: 1.5

#### Cost

C: 80

a: default

b: default

c: default