NCDESim documentation

# **Data package**

# Filters package

## FirmRemovalFilter

FirmRemovalFilter implements the Predicate interface from the Apache Commons Collections library. This class is used to remove firms based on certain criteria.

The FirmRemovalFilter class operates on objects of type T which must extend the AbstractFirm class. The evaluate method is defined by the Predicate interface and implements the logic for removing firms.

The evaluate method takes an object of type T as its argument and returns a boolean value. The method checks if the size of the firm's employee set is 0 or if the firm's profit is less than or equal to 0. If either of these conditions are true, the method returns true, indicating that the firm should be removed.

## IndividualCanLookForJobFilter

The IndividualCanLookForJobFilter is a class that implements a filter to evaluate individuals to determine if they are eligible to look for a job. The filter works by evaluating a single individual, of a specified type that extends the Person class, to determine if they have an employer. If the individual does not have an employer, they are considered eligible to look for a job and the filter returns true. If the individual has an employer, they are not eligible to look for a job and the filter returns false. The filter is used to determine if an individual can be included in a list of eligible individuals who can look for a job.

## PersonRemovalFilter

The PersonRemovalFilter is a filter class used to determine if an individual should be removed from the simulation in the NCDESimModel application. The filter is implemented using the Predicate interface and is specified to work with individuals of a type that extends the Person class.

The filter evaluates a single individual and determines if they should be removed from the simulation based on two conditions:

The individual's age is greater than or equal to the value specified by Parameters.PERSON\_REMOVAL\_AGE.

The individual's health is less than or equal to 0 and the Parameters.ZERO\_HEALTH\_DEATH flag is set to true.

If either of these conditions is met, the filter returns true, indicating that the individual should be removed from the simulation. If neither of these conditions is met, the filter returns false, indicating that the individual should remain in the simulation.

# Enums package

## UtilityFunctions

This Java class defines an enumeration type named "UtilityFunctions" that belongs to the package "NCDESim.data.enums". An enumeration type is a type whose possible values are restricted to a predefined set of values. In this case, the only value defined in the "UtilityFunctions" enumeration is "CobbDouglas". Each value corresponds to a type of utility function that can be used to calculate the value of individuals’ utility in the simulation.

## Parameters