

Startdocument for 'Boat rental (Assignment 10)'

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Problem Description

A company rents out speedboats. For any given day, each of the ten speedboats present, rented out once at most. A program should be developed that allows the administration of can be kept in one day. The following data is collected per boat: recorded: weight, horsepower engine power, length and boat number and the rent per hour. Furthermore, depending on the amount consumed fuel a rental surcharge of 5 euros per liter.

For rented boats are recorded starting time rental, end time rental, number of liters fuel consumed and damage incurred. At the end of the day, the owner wants the following data presented to have:

- The total turnover for all boats;
- The total rental time across all boats;
- The number of the boat with the highest fuel consumption per minute together with this consumption;
- The percentage of the rented boats that have suffered damage;
- The boat that has been rented the shortest.

Input & Output

In this section the in- and output of the application will be described.

Input

Boat rental

Case	Type	Conditions	function/method	additional info
name	string	not empty	constructor	name of the boat rental
rentBoat	list<Rent>		setter	list of days where boats are rented

Boat

Case	Type	Conditions	function/method	additional info
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Case	Type	Conditions	function/method	additional info
weight	double	not empty	constructor, setter	weight of a boat
power	integer	not empty, number	constructor, setter	horsepower of a boat
length	integer	not empty, number	constructor, setter	length of a boat
number	integer	not empty, unique, number	constructor	unique id of a boat
rent	double	not empty	constructor, setter	price to rent a boat

Rent

Case	Type	Conditions	function/method	additional info
start	time	valid time	constructor	rental start time
end	time	valid time	setter	rental end time
literOfFuel	integer	not empty, number	setter	number of liters fuel used
damage	integer	boolean	setter	took damage or not
boat	boat	valid boat	constructor, setter	boat that is being rented

Output

Boat rental

Case	Type	function/method
get the name of a boat rental	string	name()
get the list of all the boats	list<Boat>	boats()
get total amount of revenue	double	getTotalRevenue()
get total rent time	time	getTotalRentTime()
get number of the boats that use the most fuel per minute	integer	getMostConsumer()

Case	Type	function/method
get shortest time that a boat was rented	time	getShortestRent()

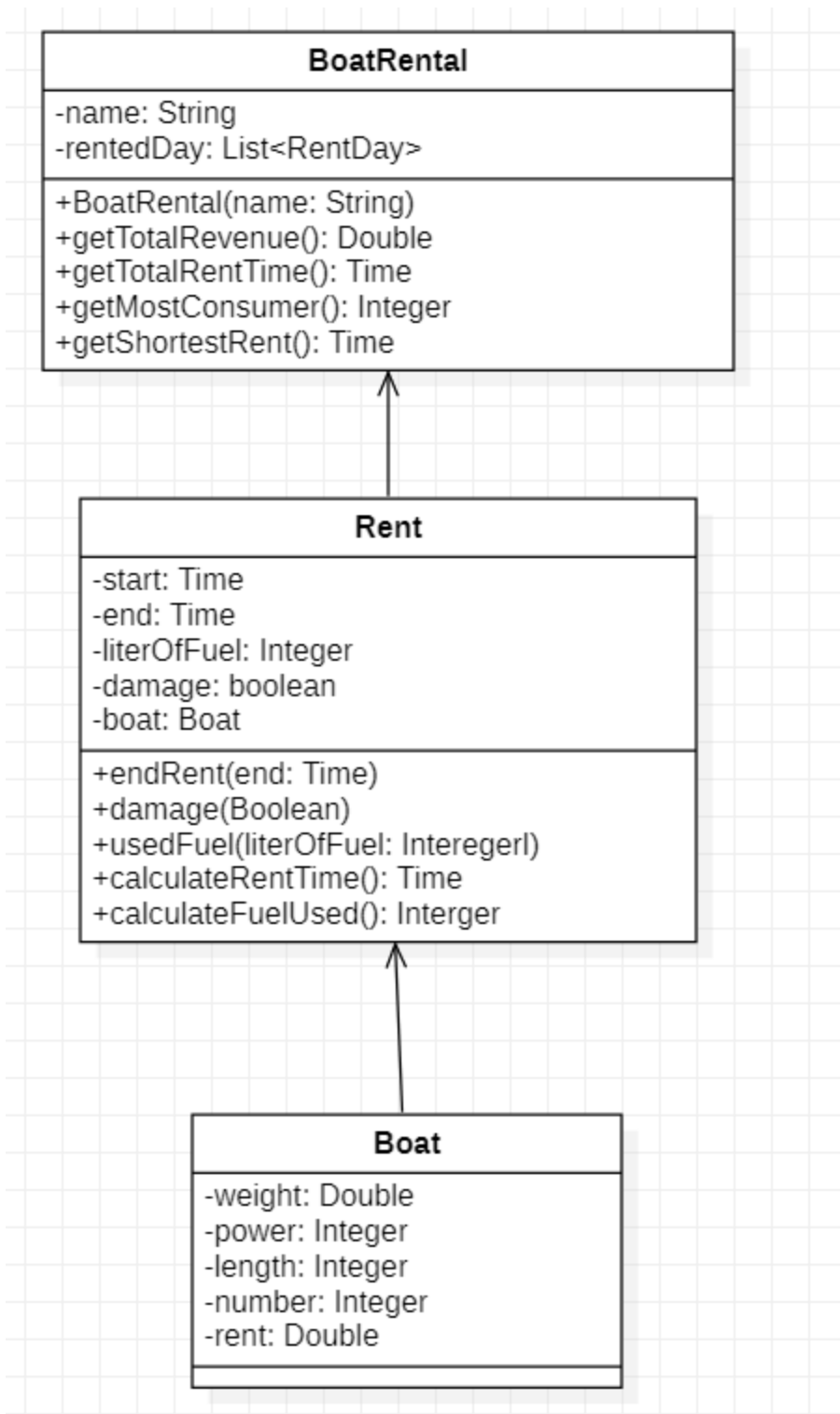
Boat

Case	Type	function/method
get weight of a boat	double	weight()
get horsepower of a boat	integer	power()
get length of a boat	integer	length()
get number of a boat	integer	number()
get rent price of a boat	double	rent()

Rented boat

Case	Type	function/method
get start time of the rent	time	start()
get end time of the rent	time	end()
get liter of fuel used	integer	literOfFuel()
get if boat took damage	boolean	hasDamage()
get boat that is being rented	boat	boat()
get total rent time	time	calculateRentTime()
get total liters of fuel used	integer	calculateFuelUsed()

Class Diagram



Testplan

rent day

boat	start	end	used fuel	damage
1	11:00	13:00	5	no

boat	start	end	used fuel	damage
2	10:00	11:00	10	yes
3	11:00	14:00	5	no

Results

total revenue	total rent time	most consumed fuel	percentage damaged boats	least used boat
120 euro	5 hours	boat 2	33%	boat 2