# Assignment 1 of 3: to be done at home on your own (no partner)

Assignment 1 involves writing a single class, as described below. **Lates not accepted.**

**Your project must compile and run. It also must compile and run successfully with the Boat Testing tool provided on BCIT’s D2L Dropbox for Assignment 1. BoatTest.java in order to be marked. Read the document located at**

**BoatTest--README FIRST.txt.**

**If your class does not compile, you will receive a mark of 0.**

**This is an individual assignment. Group work on this will be considered plagiarism!**

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| Requirement | Marks |
| Create a BlueJ project named Assignment1 | 1 |
| Create a class named Boat | 2 |
| Class has a javadoc comment with @author and @version and description | 3 |
| The Boat class has variables for:   * Body type must be “powerboat” for all, cannot change * Model year must be 1973 or later * Model name e.g. “145” or “Outlaw” * Horsepower e.g. 492.5 * Manufacturer e.g. “Bayliner” * Twin-Engine true or false * Web page the same page for all: “<http://www.Boat.com/specs/>” *but can change* | 3  1  1  1  1  1  2 |
| Create a No-arg constructor | 1 |
| Default constructor does nothing, but has a javadoc comment | 1 |
| Create another constructor, which takes the following parameters AND ENFORCES THE FOLLOWING VALIDATION:   * Model year must be 1973 or later * Model name e.g. “Outlaw” * Manufacturer e.g. “Bayliner” * Horsepower e.g. 192.5 (must be between 50 – 390) * Twin-engine true or false | 2  2  2  2  1 |
| This constructor has javadoc comments including @param tags for all four parameters | 4 |
| If the constructor’s model-year parameter is not between 1973 and the current year, print a message reporting an error as follows: “1958 is too early, sorry” or “2019 is too late, sorry”. Also, do not store this invalid parameter value in your instance variable. | 2 |
| If the constructor’s horsepower parameter is not between 50 and 390, print a message reporting an error as follows: “45 is too little, sorry” or “450 is too much, sorry”. Also, do not store this invalid parameter value in your instance variable. | 2 |
| If the constructor’s model-name parameter is an empty string with no characters in it (“”), print a message reporting an error as follows: “a model name was not provided, sorry”. Also, do not store this invalid parameter value in your instance variable. Use the String’s .length() method to find out how many characters are in it. | 3 |

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| Provide well-named mutator methods for each variable:   * Model year * Model name * Manufacturer * Horsepower * Twin-engine * Web page | 6 |
| Each mutator method must have a javadoc comment with an @param tag | 6 |
| Provide well-named accessor methods for each variable:   * Model year * Model name * Horsepower * Manufacturer * Twin-engine * Web page | 6 |
| Each accessor method must have a javadoc comment with an @return tag | 6 |

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| Provide a method called *getBoatDetails()* which displays the car’s details exactly as follows when it is called:  This powerboat is a 1999 Outlaw with 245.7hp and has Twin-engine. It is manufactured by Bayliner and you can read more at http://www.Boat.com/specs/  Or (NOTE: this is all on one single line)  This powerboat is a 2001 Crossover 231 with 143.7hp and does not have a twin-engine. It is manufactured by StarCraft and you can read more at http://www.ca.boats.com  Note: use System.out.print() to avoid putting a line break at the end. Use System.out.println() to put a line break at the end.  Notes:   * Use your own accessor methods to get the values for printing (i.e. do not use the instance variables directly)   However: if the object has any invalid values in its instance variables then do NOT print the sentence above! If there are invalid values in its instance variables, this method instead prints a sentence saying so. Use these exact sentences. Only print one of these sentences, not two or more:  0.0 horsepower: “Sorry. There is an error with this boat’s horsepower.”  0 model year: “Sorry. There is an error with this boat’s model year.”  null model name: “Sorry. There is an error with this’ boat’s model name.”  null manufacturer “Sorry. There is an error with this’ boat’s model name.” | 4  2  -5  2  2  2  2 |
| Your code has magic numbers. | **-1 each** |

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| The body type field is constant. | 1 |
| The body type and web page fields are static. | 2 |
| Create two static accessor methods: one to return the body type; one to return the web page. | 2 |
| Zip your file and named it as follows:  lastname-firstname-assignment-1-comp-1409.zip (use your own last name and first name: e.g. woods-tiger-assignment-1-comp-1409.zip)  …and upload it to BCIT’s server before the due date (see last page). | 2 |
| |  | | --- | | Create a main() function to run the Assignment1 program. | | In the main function create the following Boat objects:   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Model Name | Model Year | Horsepower | Manufacturer | Twin Engines | | “160” | 2015 | 100.0 | Bayliner | no | | “Outlaw 23” | 1972 | 320.5 | Baja | yes | | “FM1710 Pro” | 1973 | 92.2 | Lowe | no | | “Crossover 231” | 1999 | 157.6 | StarCraft | no | | “242 E-Series” | 2010 | 198.4 | Yamaha | no | | “Speedster 200” | 1985 | 258.7 | Sea-Do | yes | | |  |     In the main method print the details of the 6 boats using the getBoatDetails() method. | 1  1  1  1  1  1  1  6 |
| /99 |  |

TO **SUBMIT THIS ASSIGNMENT**  to the D2L dropbox for Assignment 1:

**Help with BCIT’s Servers:**

http://helpdesk.bcit.ca/print/fsr/sr/network/734.shtml

**Late assignments are not accepted.**

**This assignment is due before 11:59pm the night before lesson 6.**