

FAZUA Production Line, Java Assignment

FAZUA has been the last years working on the new generation of drive systems for the e-bike market. Our product, **Evation**, is a compact drive system for all types of pedelecs that can be clicked in and out from the downtube at any time.

The purpose of this assignment is to create a Java program which simulates our internal production line.

THE ASSIGNMENT

Create a Java program (Java 8 with or without a UI) where we can create new Evation drive systems, set its production values and test the system (see next page: Evation specs, production values & test).

The program should fulfill the following requirements:

- Create a new Evation Drive System.
- Manually set all production fields of a newly created evation drive system either through a UI or through the console.
- Validate all production values. Detailed feedback of the validation has to be provided in the UI or the console.
- Production values can not be set to the drive system until they are valid.
- Test the evation drive system. Test result has to be provided in the UI or the console.
- An evation drive system can not be tested until the production values are set.

Next page: Evation specs, production values & test.

We do not expect you to come up with the perfect solution to the assignment, we will evaluate the whole thing through. Creativity, practices (Git, structure, OOP...), UI-UX, software stability, requirements accomplishment...

ASSIGNMENT DELIVERY

The program will be delivered through **Github**. A new public repository has to be created and you will track your code using git and upload it to Github (to any desired branch). The final delivery has to be in the **master** branch, which is the one that will be evaluated. Once finished, you will

provide FAZUA the url of your repository.

SPECS

Evation Drive System: 1 Drivepack + 1 Bottom Bracket + 1 Remote

Drivepack, production values to be introduced manually:

- Serial number: positive number, max 32 bits
- Software version: positive double internally represented by max 16 bits:
 - MSB=before comma
 - LSB=after comma,
 - E.g. introducing 4,19 will translate to 0x1304
- Motor serial number: positive number, max 16 bits

Bottom Bracket, production values to be introduced manually:

- Serial number: positive number, max 32 bits
- Torque sensor serial number: max 12 ASCII Digits

Remote, production values to be introduced manually:

- Serial number: positive number, max 32 bits
- HMI board serial number: positive number, max 16 bits

TEST

Motor test: This test will simulate the motor moving 4 seconds and will read the motor output. After 4 seconds, the test will return a random value between 80 W & 150 W.

Test passes if the output is higher than 85 W & less than 140 W.