Assembly line

An assembly line is a production process made by a predefined sequence of stations to assemble a product. We want to build an assembly line capable of creating cars. Our assembly line is made by the following four stations

1 - painting station
2 - mechanic assembly
3 - interior parts assembly
4 - quality assurance and build

The "AssemblyCarEntity" class is made like this

```
AssemblyCarEntity {
    paint()
    assemblyMechanich()
    assemblyInterior()
    build():Car
}
```

each station, when receiving an assembly car entity, will call the according method.

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Create the 4 stations and build the assembly line

Create an *AssemblyLine* class that is composed of the four class *Station* as described above. Each station has to be associated with a position, and the quality-assurance station has to be the last. The AssemblyLine has to expose a method *produce()* that accepts as input an *AssemblyCarEntity*

Please note: you might want your assembly line to be flexible and to work also with a subset of the stations -- the hard limit is to have a minimum of 2 stations and the last has to be always the quality assurance one.

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Create the first car

When calling the

produce(assemblyCarEntity)

method, the chain of calls has to be performed in the order in which the stations are positioned in the assembly line. So each station has to call the correct method of the *assemblyCarEntity*

The output of the *produce()* should be the Car

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Implement quality checks

The last station, the QA one, has to decide whether the assembly car entity was created with quality. Let's assume that 80% of those are ok, so the quality check will resubmit the remaining 20% the assembly car entity to the first stage of the assembly line to rework on it.

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Extend the assembly line

Things went well quite recently for the business, and now you can also afford a polish station. The assembly car entity has to support a new *polish()* method. Add the polish station to the assembly line, possibly without modifying the code of the Assembly line ...

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