Assignment Hospital (Part 2)

The number of FTEs currently working at the IC is already being monitored (see part 1). The hospital wants to estimate the number of FTEs that are needed to staff the ICU. Their estimate is as follows:

ENTITY	AMOUNT OF FTE
HEART MONITOR	0,3
BLOODPRESSURE MONITOR	0,1
PATIENT	1,0
PATIENT (NOT ABLE TO WALK)	2,0

Table 1, FTE estimation

Adjust your program so that it is always possible to retrieve the number of FTE from the above entities *in the same way*.

Implement the following

- Update your class diagram if necessary and expand your software.

There appears to be a catch regarding the FTEs. If the FTEs are divided over multiple entities, overhead is involved. If there are more than five entities, 0.2 FTE overhead per unit will be added.

Example
There is a hospital with two heart monitors, two blood pressure monitors and two patients. The total FTE will be: $(0{,}3 + 0{,}3 + 0{,}1 + 0{,}1 + 1{,}0 + 1{,}0 + (6 * 0{,}2) = 4$ fte's.

Make a separate FTE calculator class for this. In this calculator, the individual entities can be stopped. This then calculates the total FTEs.

Implement the following

- Update your class diagram if necessary and expand your software.

Write a method that indicates whether a new patient can be admitted. There are two conditions for this: there must be an empty bed available and there must be enough FTE available.

Implement the following

- Update your class diagram if necessary and expand your software.

To finish the software, there must be another method to add a patient to the ICU.

a) Throw an exception `CodeBlackException` if the hospital no longer has room for the patient. If there is room, place it in the first available bed.
b) Write Unit tests for this exception.

Implement the following

- Update your class diagram if necessary and expand your software.