

Software Engineering

Lesson 06 Object Oriented Design Quiz v1.0

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Object Oriented Design

- Quiz*

A dark cave without any light is filled with dwarfs. Half of them wearing green caps and the other half wearing red ones. No dwarf actually knows the colour his cap.

Task: They have to leave the cave and to sort themselves in two groups: one with only red caps and the other one with only green caps.

But no dwarf can look at his own cap. Additionally they are not allowed to communicate in any way!

How are the dwarfs going to manage this?

* Source: Bernd Oestereich: Objektorientierte Softwareentwicklung: Analyse und Design mit der Unified Modeling Language (2.0) (5. Auflage), 2001



Object Oriented Design

- Suggested solution

The first dwarf comes out of cave and arranges himself. All following dwarfs, coming out of the cave step by step, go like this

- If all caps of the outside standing dwarfs are in one colour, then the dwarf position on one side
- If on one side are the dwarfs with red caps and on the other side the dwarfs with the green caps, then the dwarf position in the join, exactly between a red and green caped dwarf.

Finally the dwarfs are in order.



Object Oriented Design

- Discussion
 - Why is the “easy task” to sort a set of objects following one criteria so difficult?
 - It's the handicap to do the sorting in an unusual way