

D-BAUG Informatik I

Exercise session: week 2

HS 2018

Homework

- Questions?

Use case

A (simplified) real world example

The power of the future



The power of the future

Write a program that monitors a (fictional!) fusion power plant.

The power of the future

The plant has various sensors, measuring:

- The **temperature of the plasma** in kelvin (K), this is a floating-point number;
- the amount of **power produced** (kW), integer;
- the amount of **power required** by our customers (kW), integer.

The power of the future

- The program is run every second;
- it SHOULD read the sensor values from input;
- it SHOULD write whether to **increase** or **decrease** the magnetic field that directs the fuel.

The power of the future

- The containment material is only safe for temperatures lower than 28000 K;
- the state of plasma is only maintained for temperatures higher than 18000 K;
- the rate of increase / decrease in temperature is unpredictable, but it's at most 1000 K per second.

The power of the future

The plant SHOULD produce **as much power as needed** while **minimising fuel waste**. It MUST NOT cool off or blow up.

The power of the future

- To **increase** the field output "UP";
- to **decrease** the field output "DOWN".

The power of the future

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Use case (in class) - Week 2

The power of the future