what is VR?

- emulating the real world

- making an electronic world seem real

interactive

- not static 3D images
- not movies
- moving within the world
- manipulating objects in the world

types of VR

- desktop VR
  - ordinary screen, mouse or keyboard control
  - polemous mouse, steering wheel, joystick
- immersive VR
  - helmet/goggles, data glove
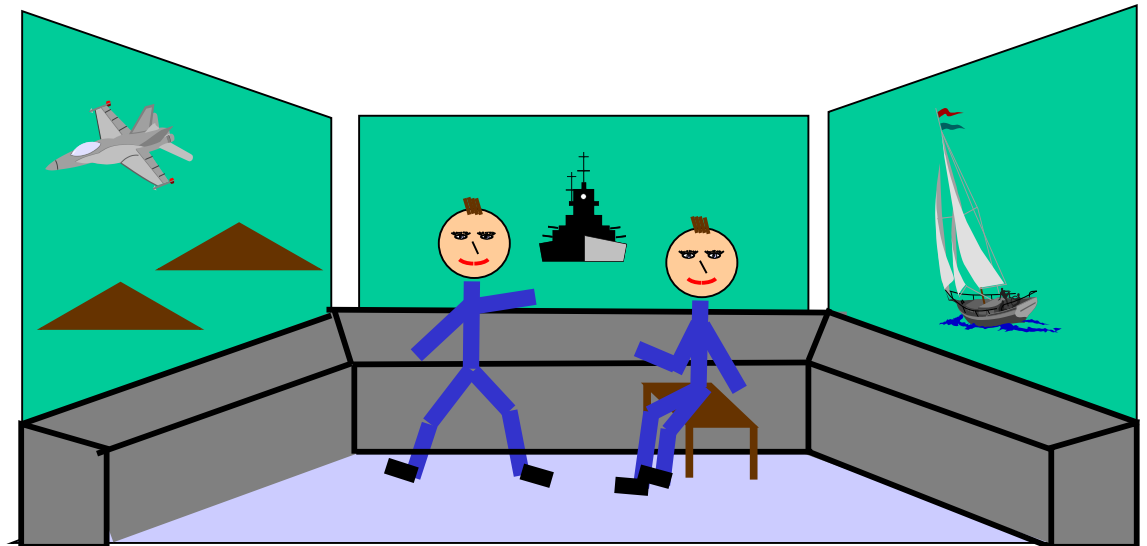 - body suit, trampoline!
- physical world/VR mixes

VR headsets

- small TV screen for each eye
- slightly different angles
- 3D effect
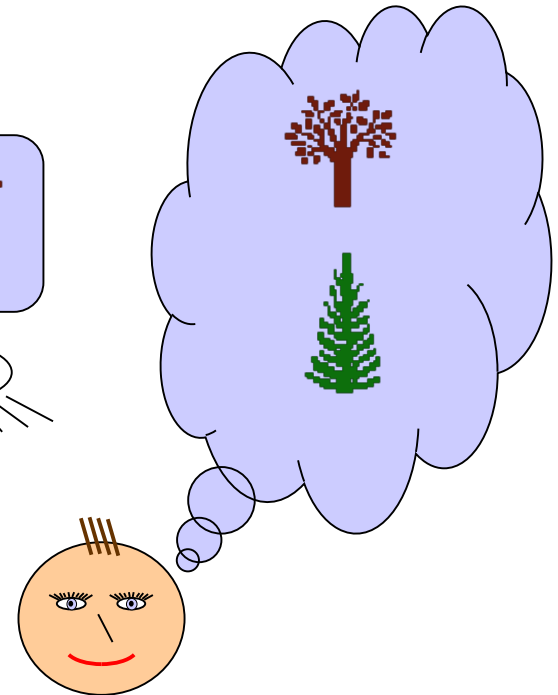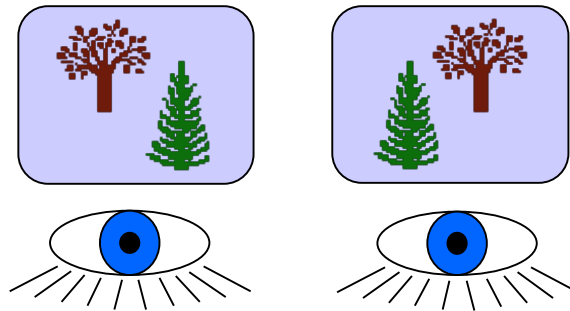
inside VR

- scenes projected on walls
- realistic environment
- hydraulic rams!
- real controls
- other people

engagement

feeling part of the virtual world

engage the senses

- sight:
  - visual realism, 3D effects: shadows, etc.,
- sound:
  - surround sound, sub-seat woofers etc.
- touch:
  - haptic and force feedback,
- and more … wind, … burning rubber!

engage the body

- realistic devices

- movement in the environment

- interaction and control of objects,

- rapid feedback …
  more important than photo-realism

Current problems

☹ Cybersickness / simulator sickness
☹ Low-fidelity
☹ Expensive
☹ Lack of integration between application packages

☺ High-fidelity system
☺ Cost-saving
☺ Collaborative
☺ High-level contact between participants in distributed VR