

what is VR?

- emulating the real world
- making an electronic world seem real

interactive

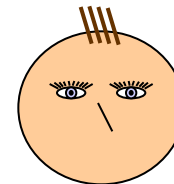
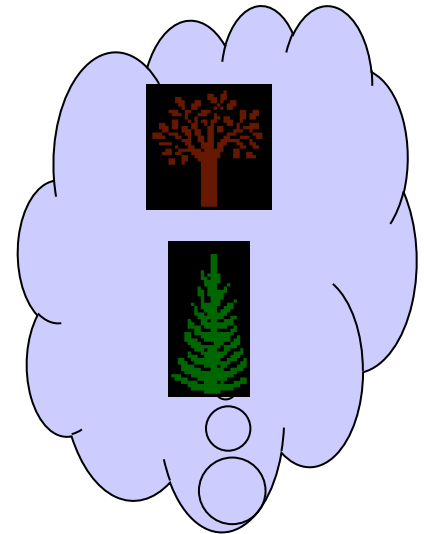
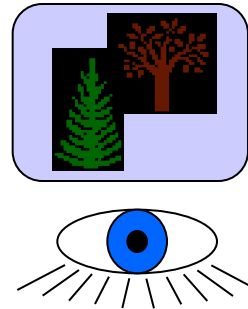
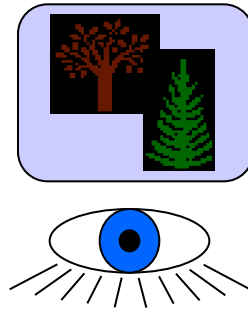
- not static 3D images
- not movies
- moving within the world
- manipulating objects in the world

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

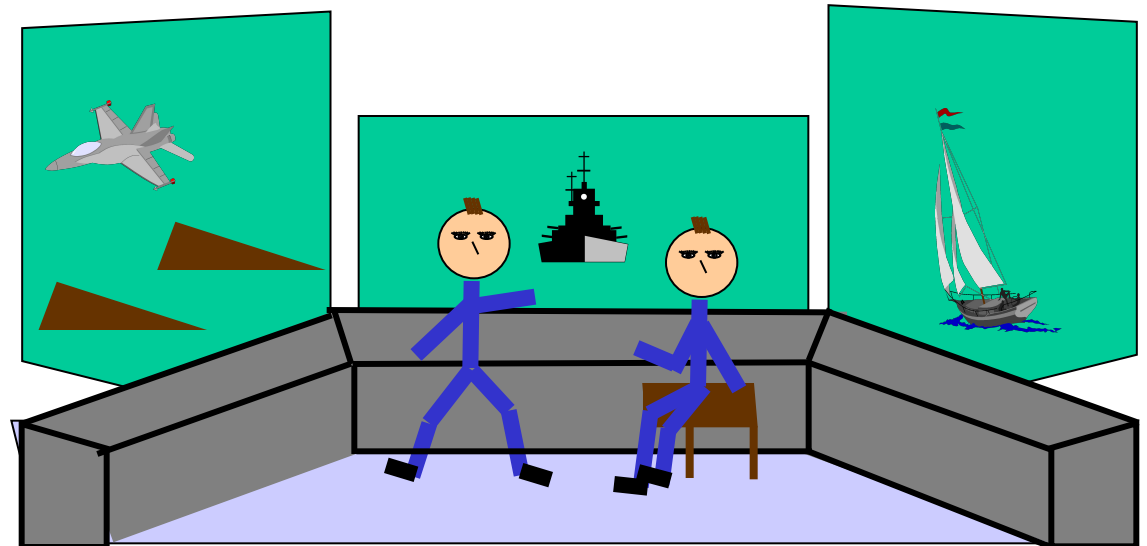
VR headsets

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