

SWEAT

OlympicRun  
On your marks. Ready. Set. Go



Mixed Reality Gaming

- ▶ **Mixed reality gaming**
 - ◆ Towards a more natural user interface
 - ◆ Integration of the physical and virtual world into one action space
- ▶ **Interaction possibilities**
 - ◆ The place is the point of interaction
 - ◆ Use of real objects for interaction
 - ◆ Bodily action translated into virtual movements
- ▶ **Research questions include**
 - ◆ How can the physical space integrated into games ?
 - ◆ Which effects are possible ?
 - ◆ How can games take advantage from mixed reality ?

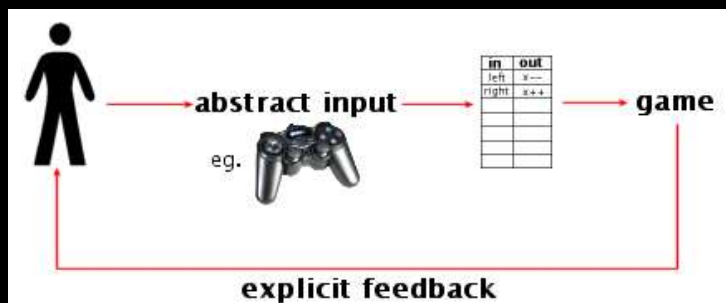
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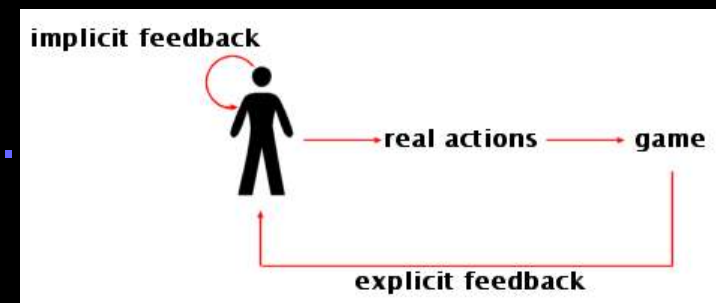
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▶ Interface, that

- ◆ translates real movements into virtual movements
- ◆ provides realistic feedback beyond vibration
- ◆ can be applied to different game genres



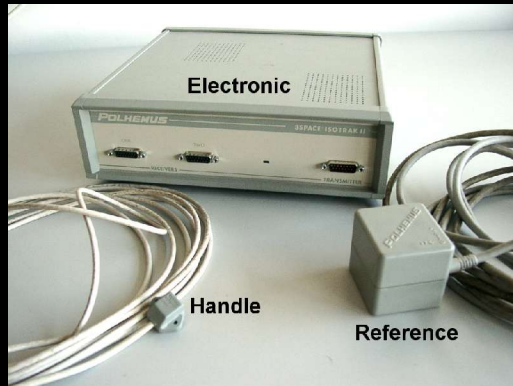
VS.



▶ Effects of this interface

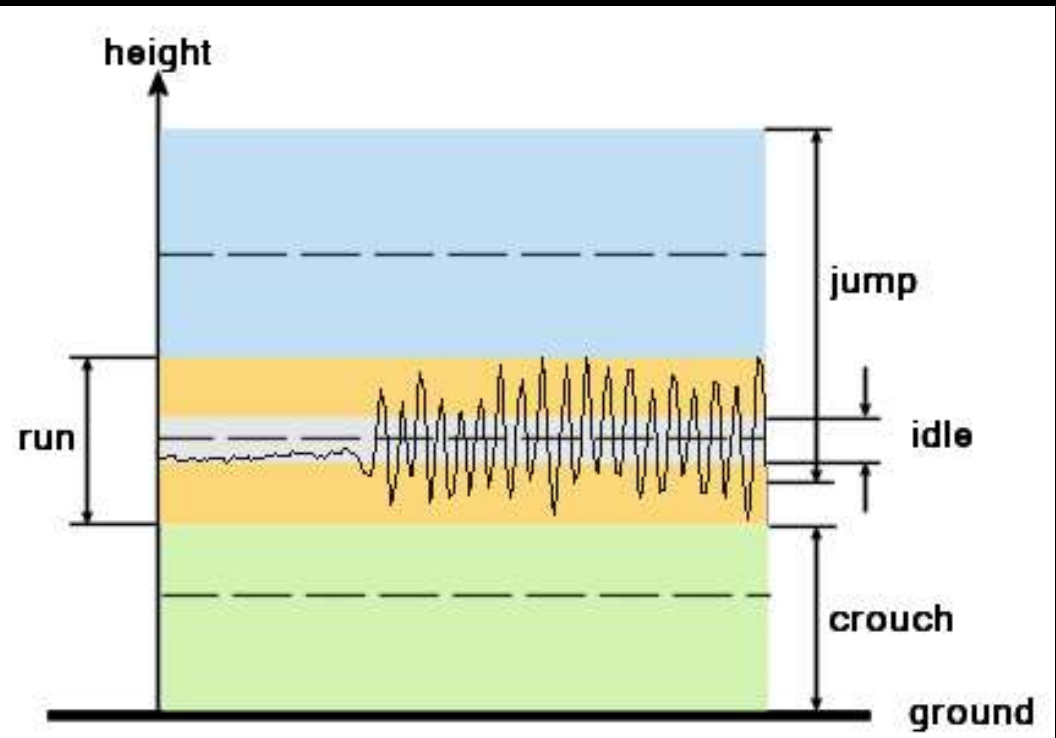
- ◆ Automatically provides strain feedback in games
- ◆ Support for physical health
- ◆ Makes fun

Technology



A 6 DOF Tracker is used as the input device

Height data from tracker is analysed and idle, run, jump and crouch patterns are extracted



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Examples of SWEAT

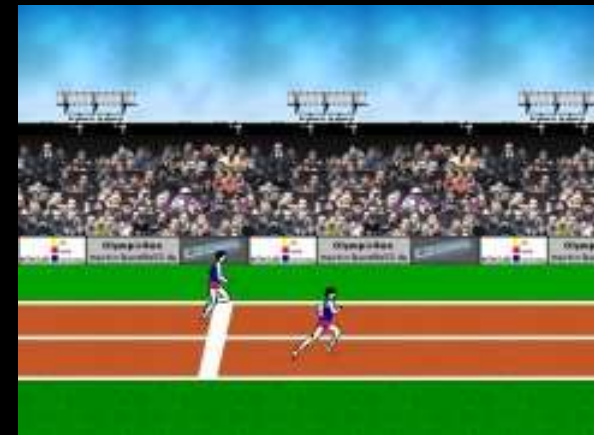
- ▶ **OlympicRun**
- ▶ **QuakeRunner**
- ▶ **WinFellow**
 - ◆ The Great Giana Sisters
 - ◆ Toki
- ▶ **Many more...**

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OlympicRun

- ▶ Based on Summer and Olympic game titles from *EPYX*
- ▶ Two runners are competing against each other
 - ◆ In front of one screen
- ▶ Disciplines: 100m run and hurdles
- ▶ Old style 2d parallax scroller



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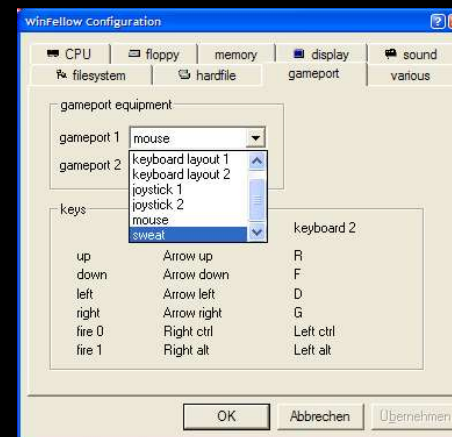
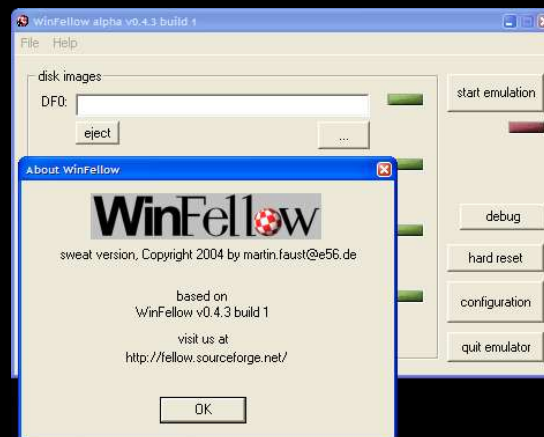
QuakeRunner

- ▶ **Based on Quake3Arena from idSoftware**
 - ◆ Standalone version as well as a Q3A MOD
- ▶ **Let the user jump and run through Quake Worlds**
 - ◆ Jumppads, doors and elevators are recognized
 - ◆ No *real* Quake play so far
- ▶ **Output**
 - ◆ Single Screen
 - ◆ Multiple Screens (e.g. CAVE)



WinFellow

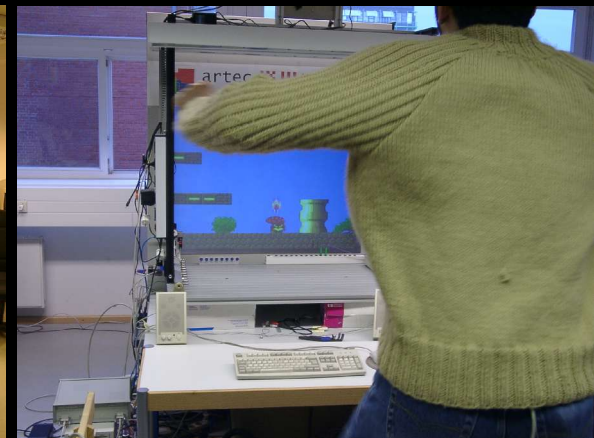
- ▶ **Integrated into WinFellow Amiga emulator**
 - ◆ Many “cool” games exists
 - ◆ Different genres
- ▶ **Available as a special gameport driver**
 - ◆ Maps real movements to joystick commands
- ▶ **Proof-of-concept**
 - ◆ Applicable to different game genres



The Great Giana Sisters

▶ Story

- ◆ Giana has to fight against monsters, huge spiders and lots of other creatures to find a magic diamond that makes it possible to return to her own world.
- ▶ **The higher a player jumps, the higher is the virtual jump.**



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Have you ever tried to run and jump like the heros in your favourite game ?

SWEAT - bodily action

