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Norwegian school of information technology (NITH) versus traditional universities:

- Highly practical and skill oriented
- Aims to educate people that can step directly into the industry
- minimized theory

The (game) study programs are  
inspired by your brain!

Programmer

Designer



Two study programs,

- Game programming

- Game design

# Game programming,

- Making the game

- Technical

# Game design,

- Making content for the game

- For instance : Analyze the rules of the game and balance the game into some sort of equilibrium (important for economy in MMO games)

# Game programming

I teach two courses:

- Game engines

- Advanced graphic programming

# Game engine

-What?

-"The operating system of the game"

-When creating a game we do not care about the details (how graphics are drawn, how physics are handled etc)

-Some companies make most of their earnings from making game engines (such as ID software)



# Game engine

- A design course, meaning programming and designing (3:1)
- We use both the left and right part of the brain

# Game engine

For instance,

- Students learn to create models to be used in their game (creative)
- Students are given problems to understand how binary space partition works (technical)

# Game engine

For instance,

- Students learn to create character animations such as moving monsters (creative)
- Students are given problems in inverse kinematics (technical)

Quite unpopular assignment (the technical one)

-To motivate the students I got FunCom to demonstrate their motion capture lab (mocap)



We used a quite common (at least in education) game engine called "Torque"

- Quite old, but reasonable priced

- In contrast World of Warcraft engine cost 22 mill (\$)

The students were given a number of problems:

-For instance, they were to recreate a game from the eighties called "Ant Attack"



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HP: 100



-This problem caused me to be branded as being "too much retro" by the students ...

... which is quite accurate! I am a child of the eighties 😊

-In addition I teach the students various well-known algorithm in game programming, such as:

-Path finding (A\*)

-Lindenmayer systems

-This was quite theoretical so it was important to show the students practical use of these algorithms





We also looked at other concepts in Game engines, such as networking, visibility algorithms and physics

-For instance through making a simple multiplayer soccer game

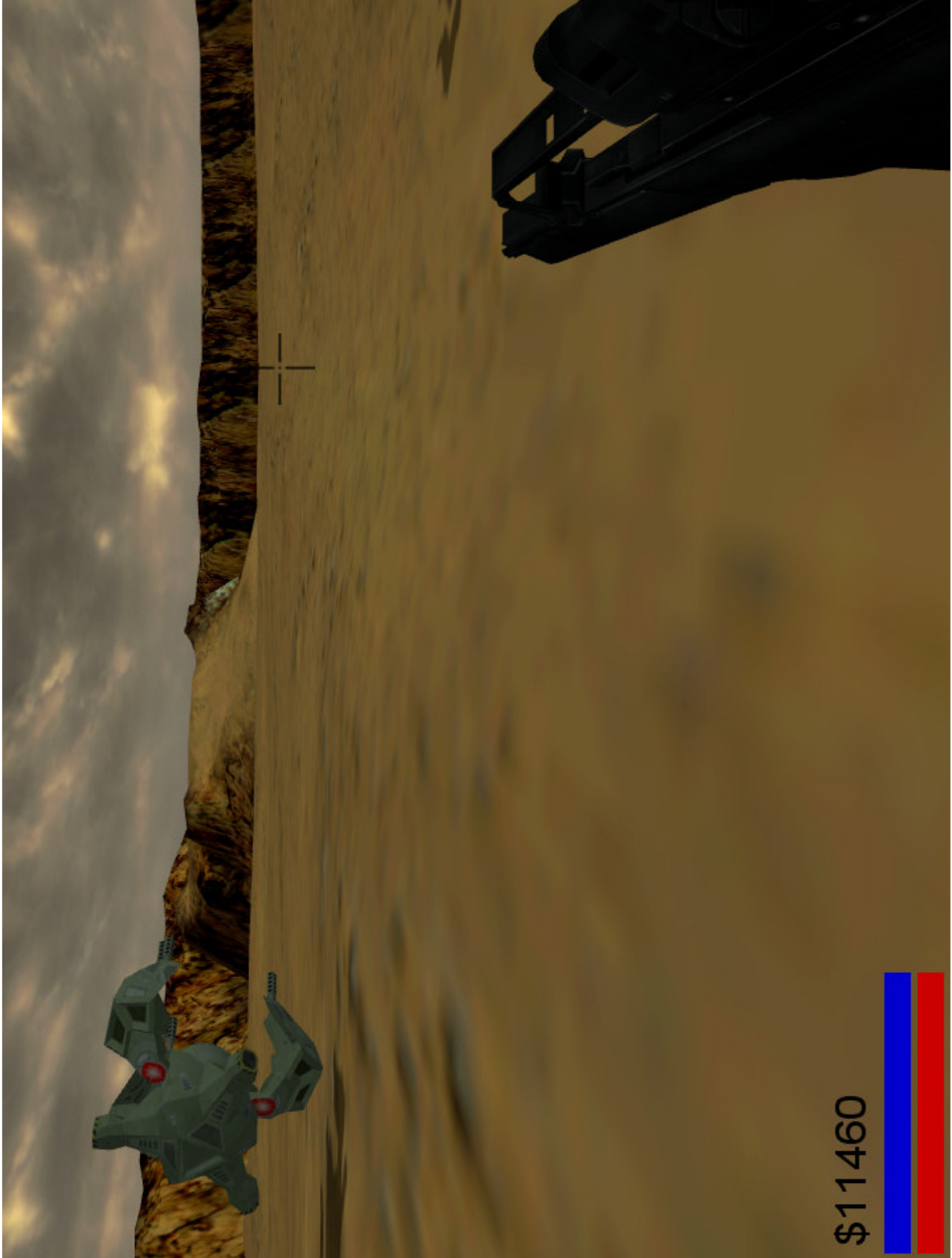




-In addition the students were to make their own game project, were the game they made where described in the course "game design" in the previous semester

-Some screenshots (being "retro" I didn't always understand all games)





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HP: 50 %



This semester I teach "advanced game programming"

- Previously the student learned how to use OpenGL

- This semester we focus on shaders together with DirectX

- In addition the students will gain knowledge by transferring their games to a console (Xbox)

-Some knowledge in splines

-But again highly practical and targeted toward the game industry