Overview

- Game Over!
  - ▶ A universally inaccessible computer game

- Background
  - ▶ Game accessibility
  - ▶ GA Guidelines
  - ▶ Learning good design through bad examples
  - ▶ Unplayable games by design

- Game Over!
  - ▶ Design
  - ▶ Universally Accessible Games

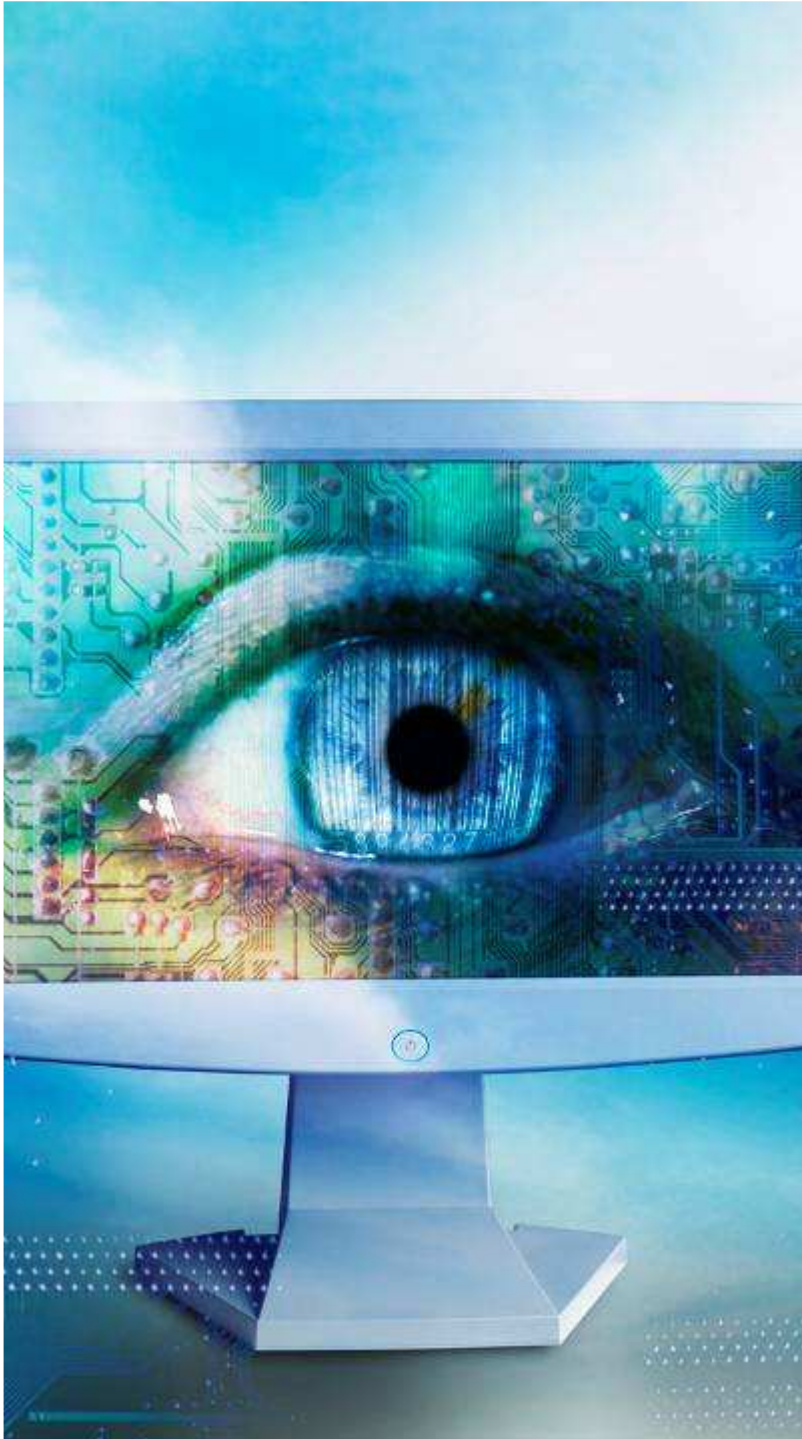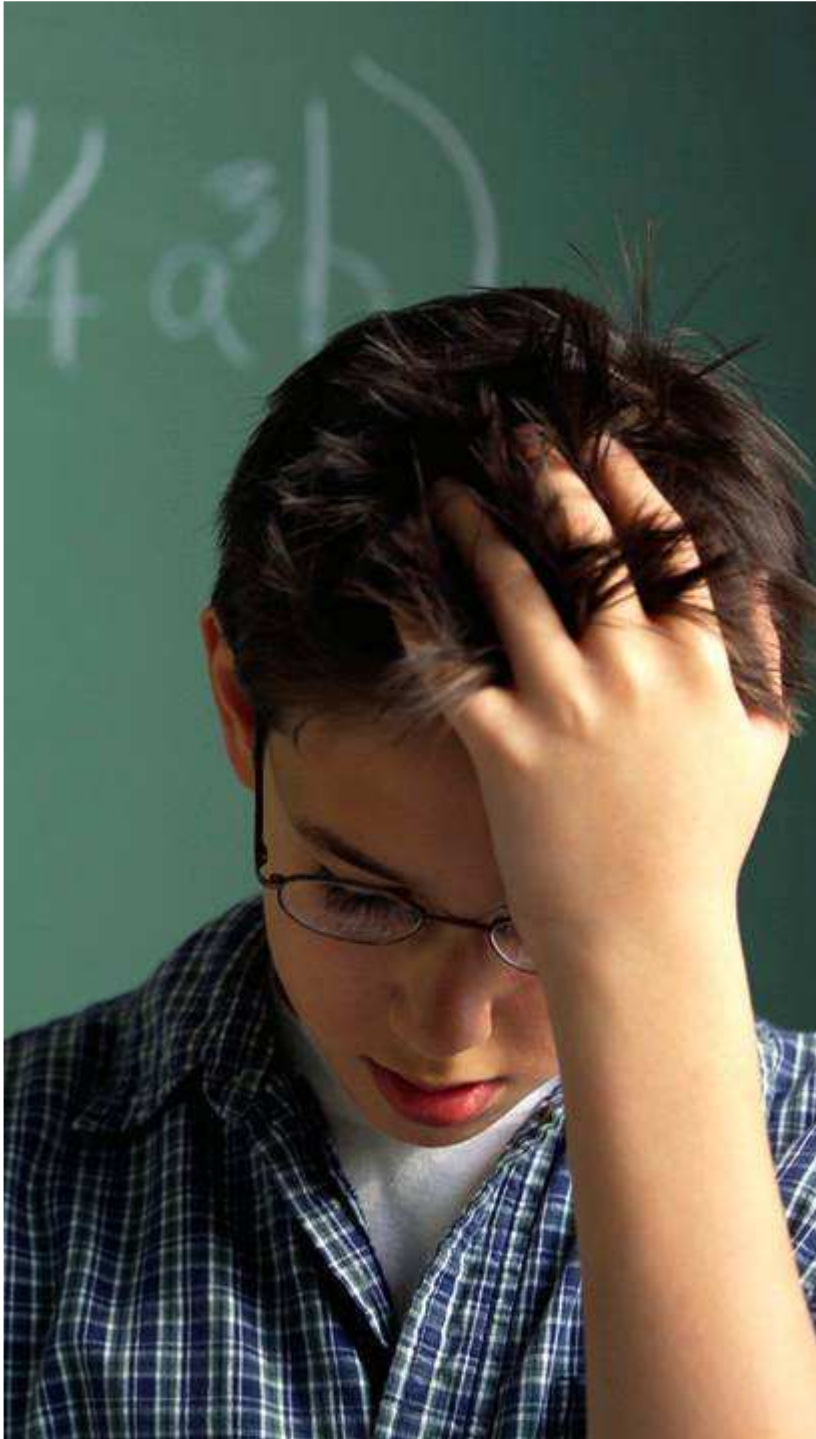# What?

Game Over!

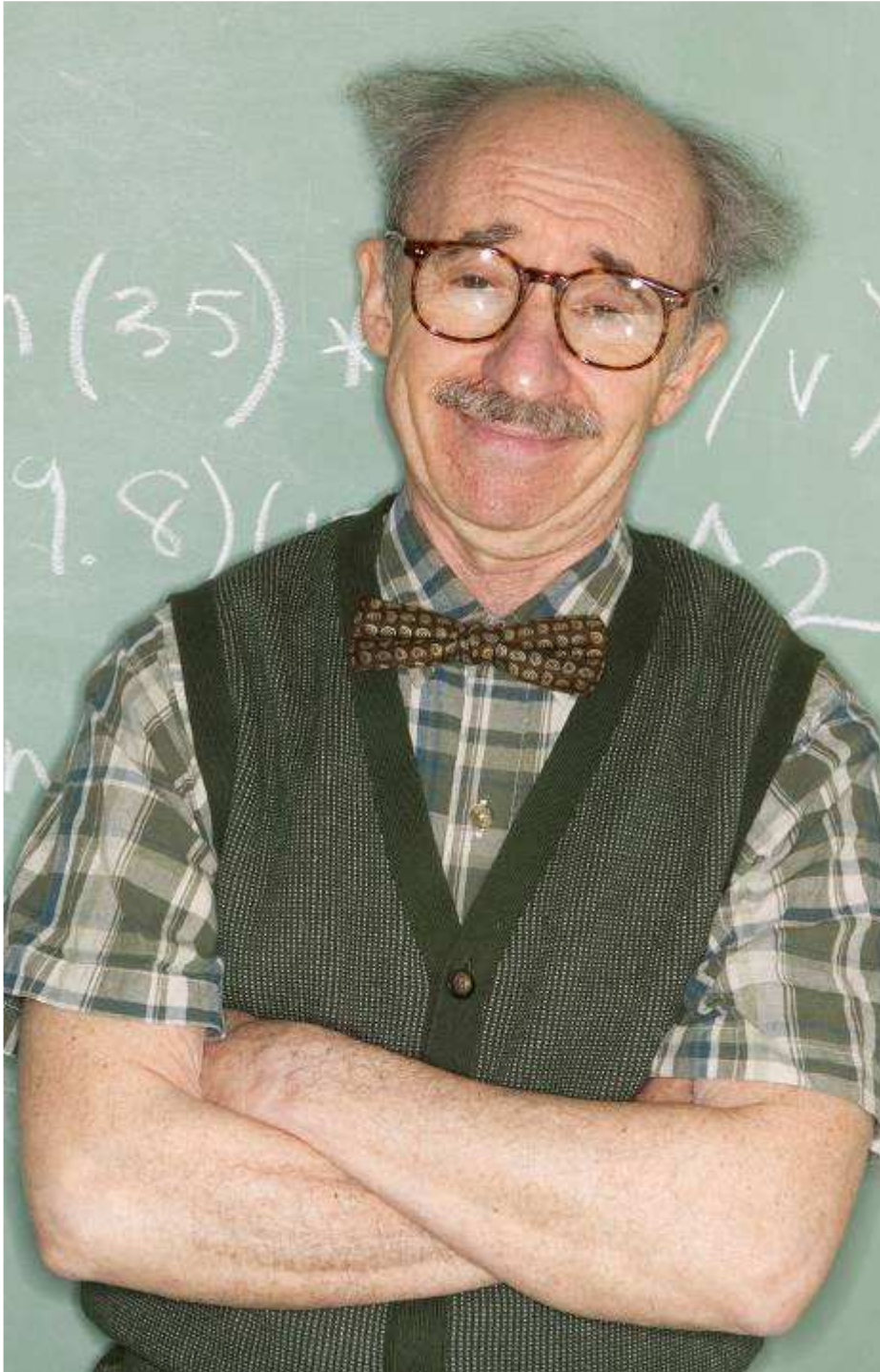(a) Computer game

(b) Universally <u>in</u>accessible

~> Meant not to be playable by anyone!

Why?

- Educate game developers
  - ▶ through a first-hand (frustrating) experience
- How it feels interacting with a game that is not accessible
  - ▶ due to the fact that important design rules were not considered or applied during its design

Background

- Game accessibility
- GA Guidelines
- Learning good design through bad examples
  ▶ Anti-patterns
- Unplayable games by design

Game Accessibility

- The ability to play a game even when functioning under <u>limiting conditions</u>

- limiting conditions:
  - ▶ functional limitations, or disabilities

   e.g., blindness, deafness, mobility limitations

Accessibility

- Not only people with physical, sensory or mental disabilities

- Gamers with "situational" disabilities, due to:
    - (a) the environment they operate in
    - (b) the hardware & software they use
    - (c) their gaming skills and preferences

GA Guidelines

- Key tool for designing and implementing accessible games

- 2 groups
  - Games Accessibility Special Interest Group (GA-SIG) of the International Game Developers Association
    - White paper
    - Top ten list
  - University of Linz & MediaLT
    - W3C/WAI-like guidelines
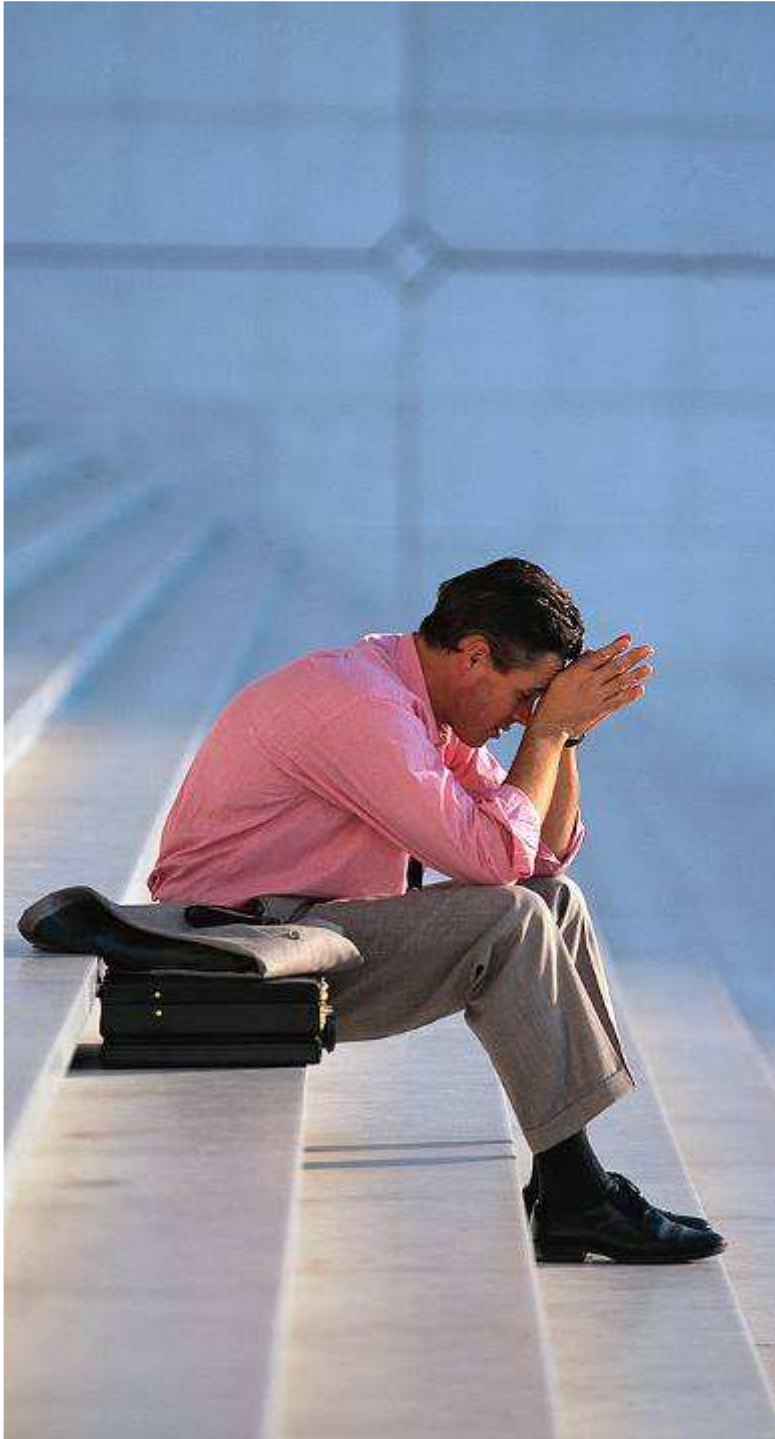
But...

+ Context-independent form
  ► Ambiguous or too abstract to be applied in a specific context
  ► Must be "translated"

+ Often conflicting

+ Might create new accessibility issues

+ Hands-on experience required

Low effectiveness & usability

Learning through bad examples

- The Psychology (Design) of Everyday Things
  - ▶ Donald Norman

- GUI Bloopers: Don'ts and Do's for Software Developers and Web Designers
  - ▶ Jeff Johnson

- Web sites
  - ▶ Bad Human Factors Designs
    www.baddesigns.com
  - ▶ Worst of the Web
    www.worstoftheweb.com
  - ▶ Interface Hall of Shame
    homepage.mac.com/bradster/iarchitect/shame.htm

Teapot for Masochists
from "The Psychology of Everyday Things"
by Donald Norman

Anti-patterns

- Specific piece of negative advice, example of bad practice, or solution that creates more problems than it addresses

- Used in Software Engineering for avoiding common design pitfalls
  - ▶ Not established in HCI

Learning through bad experiences

Unplayable games by design

- **"Takeshi no Chousenjou" (1986)** (Takeshi's Challenge)
  - ► Nintendo Famicom (NES)
  - ► by Takeshi Kitano
    - Japanese comedian, actor, presenter, author, poet, painter, and film director,
    - "a man who hates videogames"
      - stated in the game's title screen

- **Several outrageous tasks to complete**
  - ► holding a button down for 4 hours
  - ► singing karaoke for 1 hour
  - ► having to hit the final boss 20,000 times

- **One of Famicom's greatest hits**
  - ► never released outside Japan

Learning by Dying

Rick Dangerous by Core Design (the makers of Tomb Raider)

- The only way for a player to get over obstacles & challenges faced is pure luck or "trial and error"
  - ► error = getting killed

- Source of major player frustration

- Design flaw
  - ► bad or incomplete game design
  - ► lack of imagination

Game Over!
Design Goals

(a) Increase game developers' awareness about game accessibility

(b) Teach them some basic related principles while they are having fun

Observations & Facts

- Most game developers consider GA a hard, costly or "exotic" topic
  - ► but willing to invest when they learn more about it

- Average age of game developers: 31 (IGDA, 2005)

- Average number of years working in the computer games industry: 5.4 (IGDA, 2005)

- Game developers do like playing games

- Really bad games make long lasting impressions

Design Hypothesis

- A (bad) game
  - ▶ Appropriate medium for the target group
  - ▶ Motivation & engagement
  - ▶ Hands-on experience
  - ▶ Fun
  - ▶ Long lasting impression

Game Design Requirements

- Very easy to play
  - ▶ well-known goal and mechanics

- Demonstrate major, typical accessibility problems
  - ▶ Break game accessibility rules in a bold and straightforward way
  - ▶ Break one rule at a time
  - ▶ Provide advice for solving each problem

- Employ humor

- Frustrate players!!!!

Game Over!
(Terrestrial Invaders)

Welcome to Windows

Microsoft® Windows XP Professional

Copyright © 1985-2001
Microsoft Corporation

Microsoft

Press Ctrl-Alt-Delete to begin.

Requiring this key combination at startup helps keep your
computer secure. For more information, click Help.

Help

Because no one can save the Universe...

Press the following shortcut to start:
Ctrl + Shift + Enter + Page Up + F3 + F12 + Right Arrow
(Or press F1 to jump to a specific level)
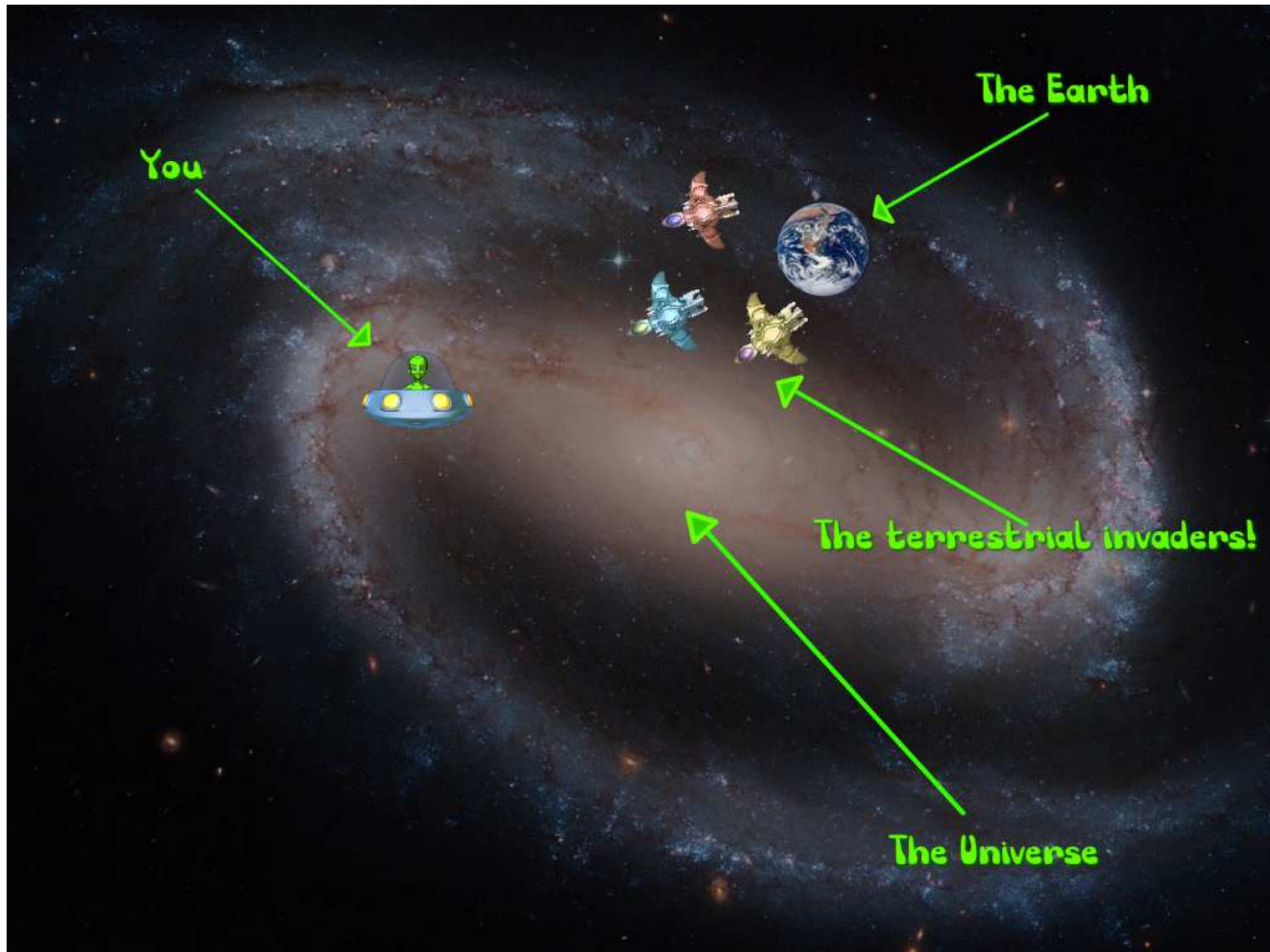
Warning!

Every time you Loose a Life, you Loose 100 points

When you Loose 3 Lives, you move to the next Level!

When desperate, press 'F1' to selfdestruct...

"We can never have wisdom
until we learn to die."

Socrates

Press F1 to continue

Game Levels

1. Learning to Die
2. Piano Man
3. Hunt and Peck
4. Look Ma, No Hands!
5. Spell Check
6. Out of Control
7. Die (not so) Hard
8. The Fast and the Furious
9. Chill Out!
10. Touchy
11. Hakuna Matata
12. Over the Rainbow
13. Low Budget
14. XXXL
15. The Bright Side of Life
16. Groovy
17. See No Evil, Hear No Evil
18. The Art of Noise
19. Chatterbox
20. Smooth Talker
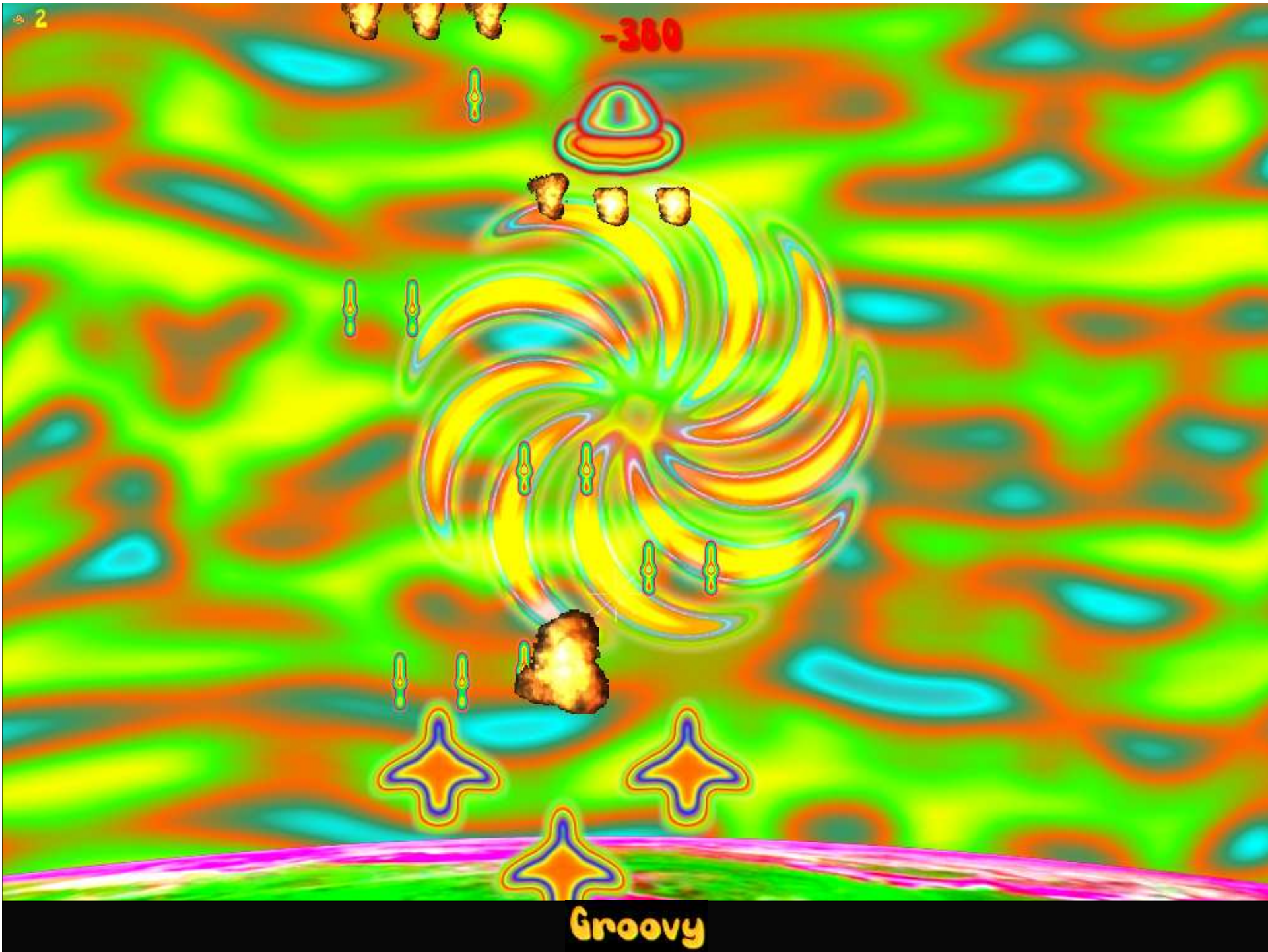21. Speechless

-100

Die (not so) Hard

-100

The Bright Side of Life
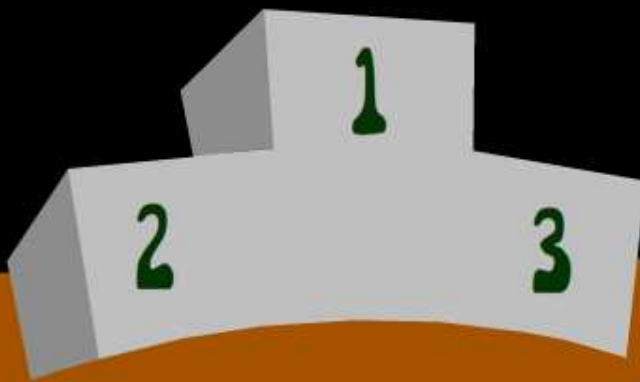
-380

Groovy

Low
~~High~~ Scores

Your score: -300

The Guidelines (1/3)

Level	Guideline
Start Screen	It should be possible to start playing the game using a single button.
Learning to Die	Provide a tutorial mode.
Piano Man	Avoid simultaneous button pressing.
Hunt and Peck	Allow redefining the controls.
Look Ma, No Hands!	Allow playing the game with a smaller number of controls, even with just a single switch (button).
Spell Check	Support alternative input techniques.
Out of Control	Support alternative controllers.
Die (not so) Hard	Allow adjusting difficulty level.

Level	Guideline
The Fast and the Furious	Provide control over game speed.
Chill Out!	Provide control over game speed.
Touchy	Allow adjusting control sensitivity.
Hakuna Matata	Use simple language and provide easy to understand instructions.
Over the Rainbow	Do not rely on color alone.
Low Budget	Allow magnifying the text and graphics.
XXXL	Make sure that the game is still playable when resized.

Level	Guideline
The Bright Side of Life	Allow adjusting contrast, brightness and colors.
Groovy	Allow adjusting visual detail.
See No Evil, Hear No Evil	Provide 3D audio cues.
The Art of Noise	Provide separate volume controls for music, speech and sound effects.
Chatterbox	Provide meaningful and timely spoken information.
Smooth Talker	Provide speech rate control.
Speechless	Provide closed captions for dialogue and sound effects.

Limitations

- Only part of the available guidelines was covered
  - ► limited number of examples provided

- Why
  - ► Exploratory nature of the game
  - ► Not possible to showcase every possible instantiation of any guideline through a single game

- Need to create a "Game Over!" for every alternative game genre

Development

- A UA-game developed first!
  - ▶ each level should violate a large variety of guidelines
    - ■ with diverse contents and goals
  - ▶ easily experiment with combinations of game parameters
    - ■ best reflect the effect of the violated guidelines
  - ▶ the game had to be extensible
    - ■ add more levels in the future

- Adobe Flash® Professional 9 Public Alpha
  - ▶ Actionscript 3.0 (preview version)

People's Choice Award

- Arcademy Games Awards
  - ▶ Montreal, Canada
  - ▶ sponsored by Festival Arcadia

- Submitted games were showcased in front of 22,000 visitors

Universally Accessible Games

- Follow the principles of Design for All
  - ► can adapt to different individual gamer characteristics

- Can be concurrently played among people with different abilities
  - ► ideally also while sharing the same computer

- May be played
  - ► on various hardware and software platforms
  - ► within alternative environments of use
  - ► utilizing the currently available device
 - ► while appropriately interoperating with assistive technology add-ons

Why UA-Games?

- The concept has been proposed to overcome the limitations of previous approaches to game accessibility

- Primarily emphasize game accessibility
  - ► but also put forward the objective of creating multiplayer games that are <u>concurrently accessible</u> to people with diverse abilities

What is a UA-Game?
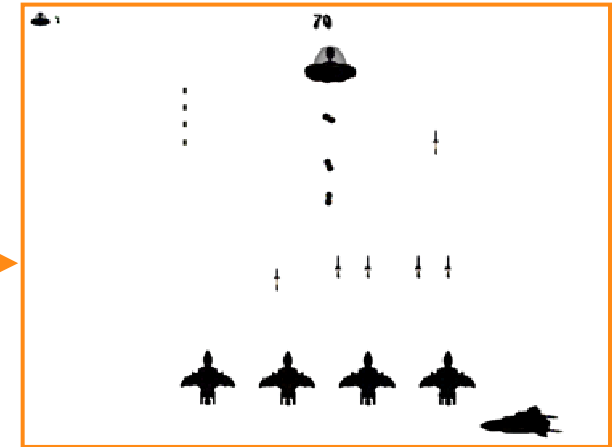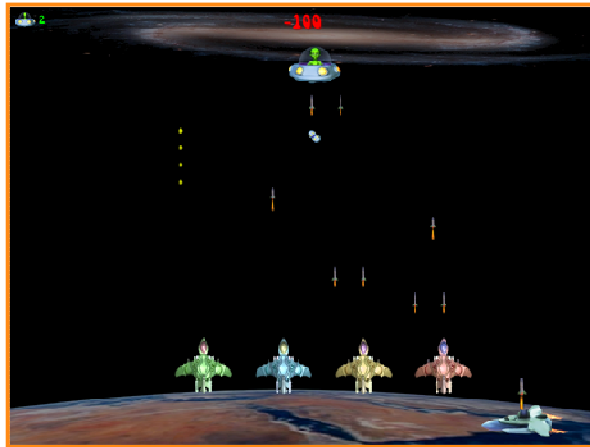
A game that can adapt its interface and content to best serve the requirements of a specific gamer under specific gaming conditions
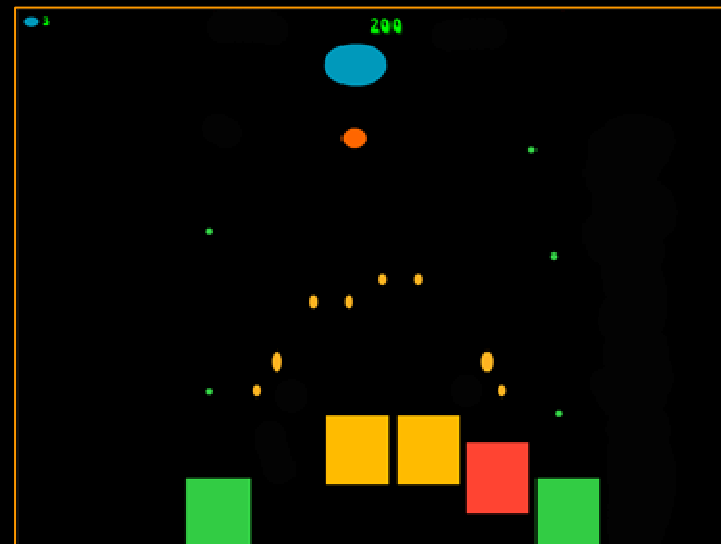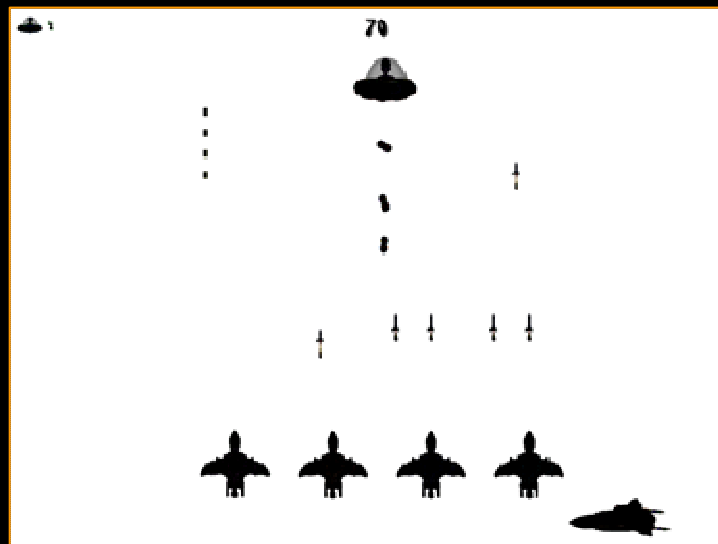
UA - Games
Universally Accessible Games

http://ua-games.gr

- **Free games**
  - ► UA-Chess, Access Invaders, Terrestrial Invaders, Game Over!

- **Articles**
  - ► Theory of Parallel Game Universes
  - ► Unified game design
  - ► Game Accessibility: Why bother?
  - ► ...