Computer Games Laboratory - Kick-off

Lehrstuhl für Grafik und Visualisierung
TUM School of Computation, Information and Technology
Technische Universität München

Instructors

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Adopted from: ETH GPL

https://graphics.ethz.ch/teaching/gamelab14/home.php

Acknowledgements:

M. Gross, B. Sumner, S. Heinzle, …

Course Goals

1. Learn central elements of modern computer game design and programming

2. Design & implement your own game project

3. Reinforce CS and graphics knowledge

4. Practice "soft skills" and project management

Course Goals

Capstone course: cumulative knowledge transferred to task of creating video game

Games Lab

GE Master

GE Bachelor

Prerequisites

Strong interest in computer graphics and game tech

Basic courses from Bachelor: Games Engineering

Ideally, intro/advanced courses in computer graphics

Ability and interest to work in teams

Some artistic skills can help

Time & motivation

Course Elements

Lectures: background & basics, structure

Milestones: delivery deadlines, documentation

Presentations: get feedback, track progress

Grading

We will track your performance

Project plays most important role
* Each of you: private summary of own contributions

Criteria:
* Technical complexity of project
* Project plan and milestones met
* Assignments and Deliverables
* Presentations
* Teamwork
* Creativity

Resources

Main Website:
- https://www.cs.cit.tum.de/cg/teaching/ -> Semester -> Computer Games Lab
- Schedule
- Project structure / assignments
- Lecture slides

Wiki
- https://collab.dvb.bayern/display/TUMgameslab2425winter/Home
- Edit access after forming groups
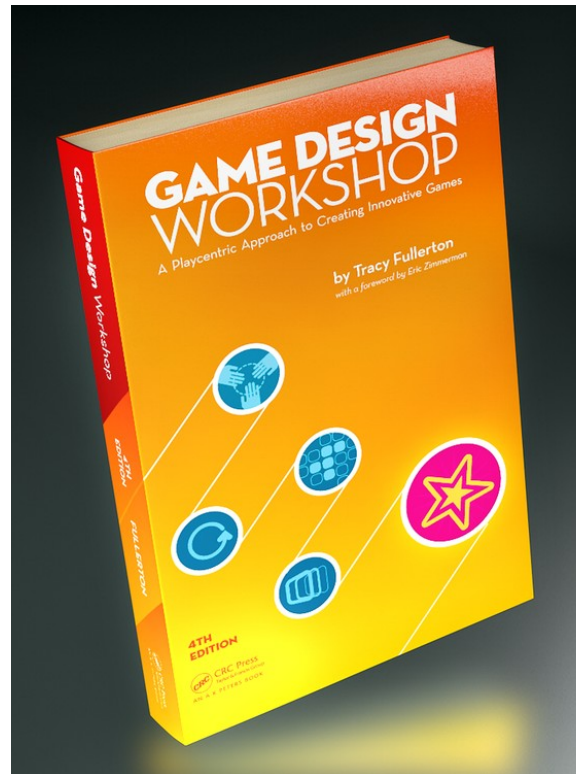
Book

Game Design Workshop

by Tracy Fullerton

http://www.gamedesignworkshop.com/

Available as e-book from the university library

Questions?

Project Structure

Teams

3-4 Students per team

Every member should contribute equally

Considerations
- Interests
- Skills
- Working hours
- Meeting locations

Formation of groups later today...

"Design & implement your game"

But … that's very challenging!

Detailed project management
- Software engineering principles
- Written project document
  - Actual idea/game documentation
  - Progress & timeline
- Presentations / demos
- Critiques, mutual feedback

Organization

Project structure document (written by us)
- Found on the course website
- Contains details about your assignments and deliverables

Detailed project notebook (written by you)
- Updated for each milestone
- Upload to course Wiki by Tuesday 23:59 before the milestone meeting

Presentations in class
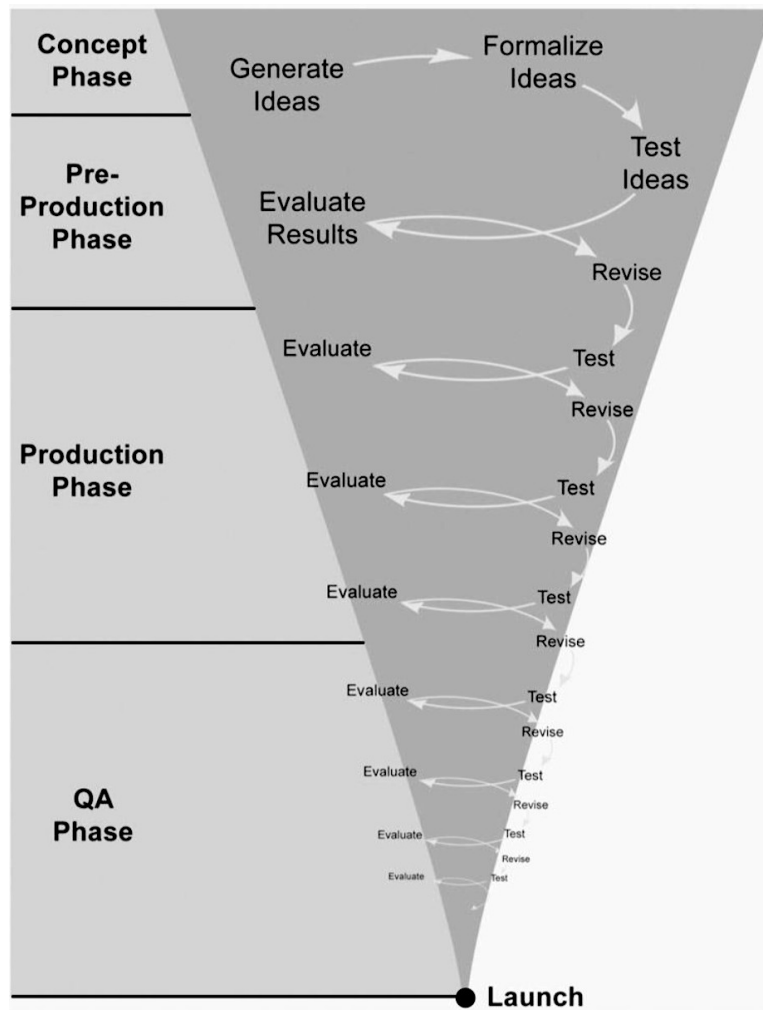- Upload slides to course Wiki by Tuesday 23:59 before the milestone meeting

Computer Games Laboratory

Iterative Design

Keep game on track

Improve upon initial concept

Incorporate feedback

Refine until release

Milestones

0. Brainstorming

1. Game idea pitch and formal proposal

2. Physical prototype

3. Interim demo

4. Alpha release

5. Playtesting

6. Final presentation!

Milestone #0

Brainstorm to come up with an initial idea

Refine and formalize idea in Milestones #1 and #2

Considerations:

- Think Small & Do One Thing Well

- Novelty & Technical Achievment

- Game Theme

Informal game idea pitch (aim for ~5 min), discussion after each presentation

Mutual Project Critiques

Every student gives individual feedback for every idea on the group's Wiki page

Answer at least these questions:

- What is your favourite aspect of the proposed game? Why?

- What is your least favourite aspect? Why?

- Which single change or addition would you suggest to most improve the game?

Consider the feedback when refining the game idea in Milestone #1

Due 2 days after meeting for Milestone #0

Milestones

0. Brainstorming
1. **Game idea pitch and formal proposal**
2. Physical prototype
3. Interim demo
4. Alpha release
5. Playtesting
6. Final presentation!

Milestone #1

Game description
- about 1500 words (~3 pages)
- 3 pages sketches / mock-ups / visuals
- Highlight and justify design choices

Development schedule
- Layered task breakdown
- Timeline & milestones

Assessment
- Strengths, appeal, criteria for success…

Layered Task Breakdown

Functional Minimum
- Just enough to call it a game…

Your Low Target
- The least possible to feel "ok"

Your Desired Target
- This is what you're aiming for

Your High Target
- If things go extremely well

Your Extras
- Things you know won't fit, maybe for later…

Development Schedule

Task	Description	Who	Hrs	Actual
1	Brainstorm design	All	4	8
2	Character modeling	Stan	12	26
3	Camera control	Kyle	6	
4	Prepare presentation	All	6	
5	Explosion effect	Kenny	12	

Development Schedule

Task	Wk1	Wk2	Wk3	Wk4	Part 3 Due	Wk5	Wk6	Wk7	...
1	A								
2		L	L						
3			T						
...									

Advice

Think Small!

Do one thing well

Make game stand out!

Better than doing lots of stuff half-way

Keep the scope of the course in mind

Example

www.linerider.org
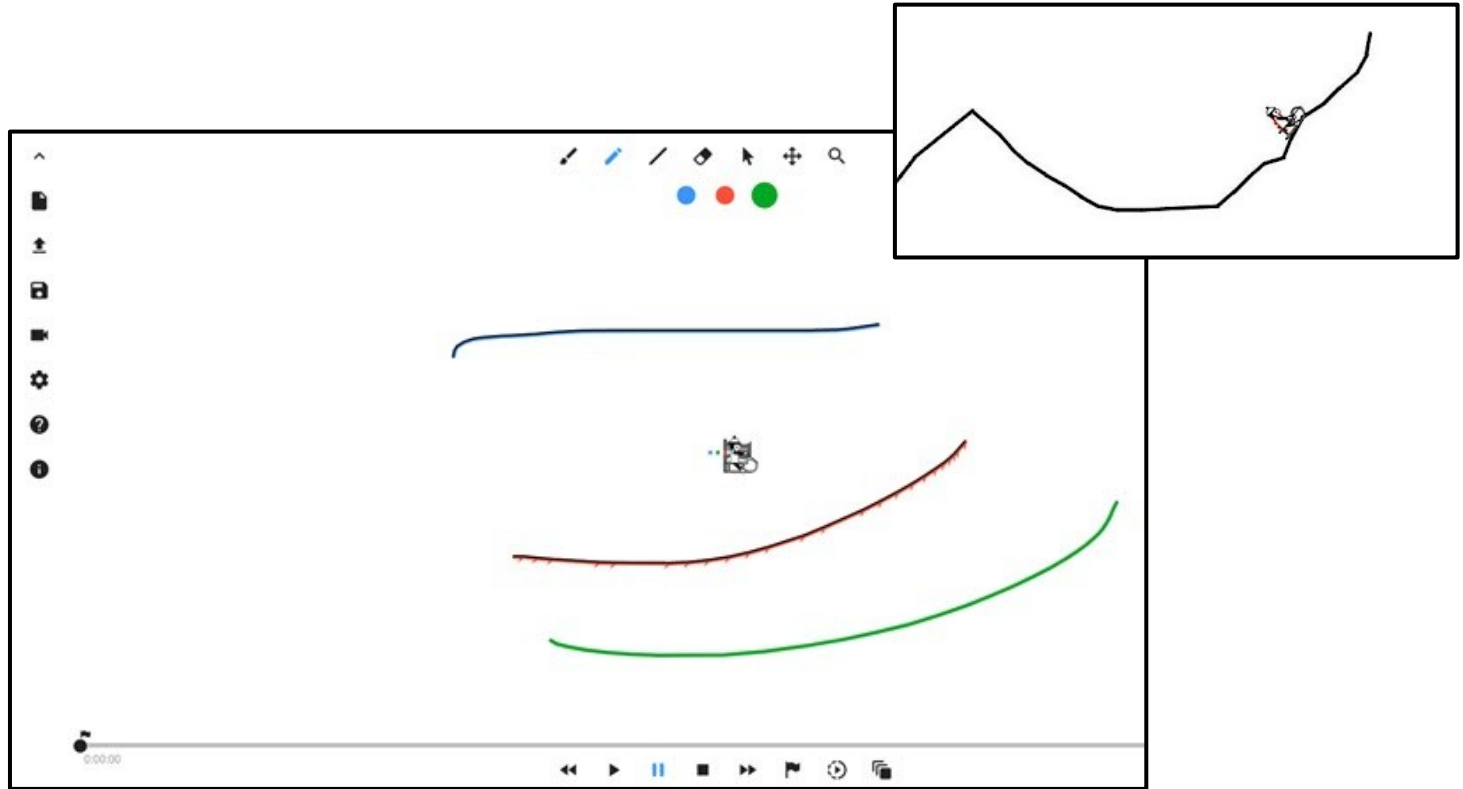
Big Idea Sheet

Keeps project focused,
common ground
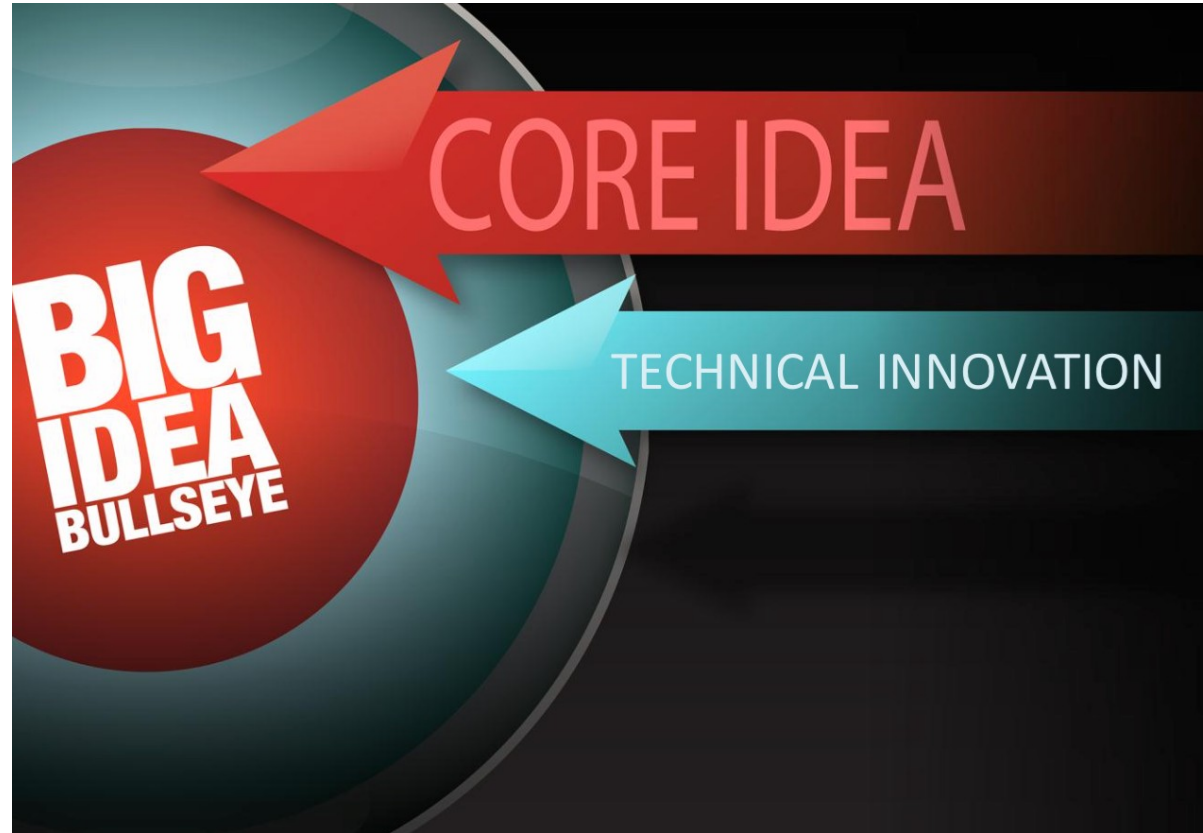
Big Idea Sheet

Example

Further Inspiration

Previous course instances

https://www.etc.cmu.edu/projects/experimentalgameplay/games.php

https://store.steampowered.com/

https://itch.io/

Milestones

0. Brainstorming

1. Game idea pitch and formal proposal

2. **Physical prototype**

3. Interim demo

4. Alpha release

5. Playtesting

6. Final presentation!

Physical Prototype

Test core gameplay

Iterate and improve concept

Finish design chapter

Milestones

0. Brainstorming

1. Game idea pitch and formal proposal

2. Physical prototype

3. **Interim demo**

4. **Alpha release**

5. Playtesting

6. Final presentation!

Interim & Alpha

Interim report
- Finished layer 2, well into layer 3
- Functional minimum completed!
- Report & demo

Alpha release
- Principle design long complete
- Coding almost complete
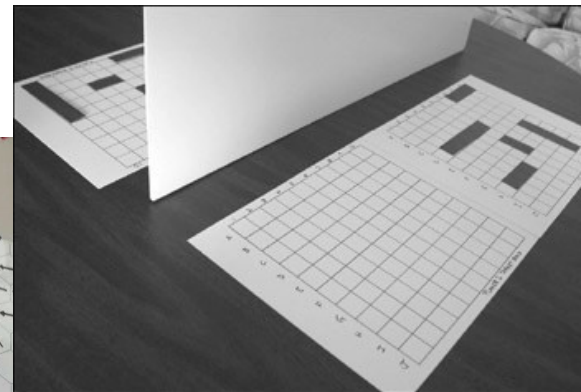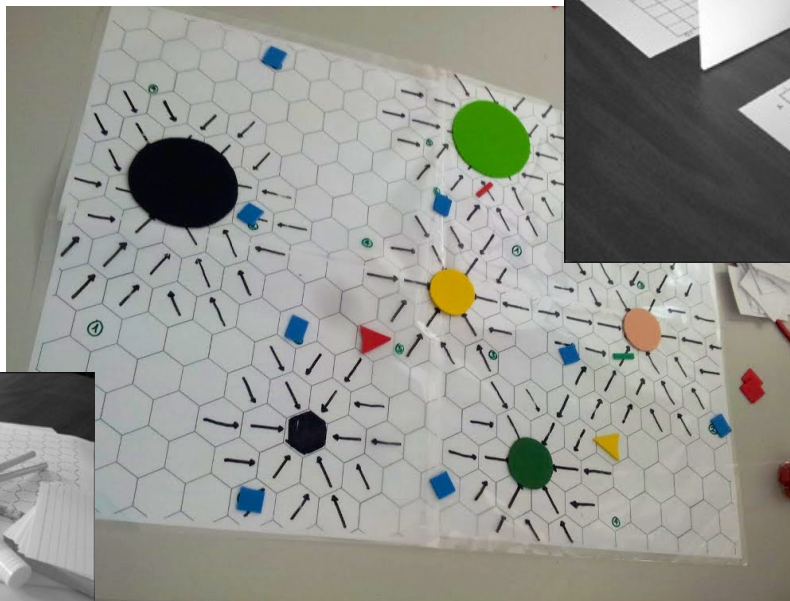- "Freeze" version for play testing

Milestones

0. Brainstorming

1. Game idea pitch and formal proposal

2. Physical prototype

3. Interim demo

4. Alpha release

5. **Playtesting**

6. **Final presentation!**

Final Stages

Playtesting
- Give your game to friends & relatives
- Take notes & make interviews
- Another chapter…

Final presentation
- Present your journey & results
- Conclusion chapter, and video

DemoDay
- Present your game to the public

Milestone Dates (also on website)

Brainstorming (Oct. 23)

Game idea pitch & formal proposal (Nov. 6)

Prototype (Nov. 13)

Interim demo (Dec. 4)

Alpha release (Jan. 8)

Playtesting (Jan. 22)

Final release & presentation (Feb. 5)

Demo Day (tbd, probably Feb. 4)

Platform

No restrictions on development platform!

But - technical contribution has to be clear

If unsure, talk to us…

Forming Groups

Please stay behind after this presentation, until everyone found a group!

Quick introduction round

If you already have a group – great, maybe somebody else wants to join

If not – chat with the other students to find one

Email us your group by tomorrow

- Include name, email and matriculation number of every student

Game Theme

9 out of 10 designers agree:

"Narrowing focus and imposing limits expands creativity immensely."

Starting point for visual design, game mechanics, or idea generation

Justify your design decisions against theme

Previous Themes

Large vs. Small

the Seasons

Together

Artificial Intelligence

High Contrast

Reflection

Rollercoaster

Duplicate

Up & Down

The Wall

Chain Reaction

Questions?

Softskills

Re-cap: Project Structure Document

Make sure to read and follow instructions

Detailed deliverables for the wiki and presentations in class

Especially important for Milestones 1 & 2

Re-cap: Milestone #0

Register teams by tomorrow 23:59 via email to us

Carefully (!) read project structure document

Brainstorming presentations next Wednesday (~5 minutes)

Discussions and feedback

Critiques from everyone! (due 2 days later)

- Get feedback from "outsiders"

- Refine your initial idea

- Be constructive…

Re-cap: Milestone #1

Read project structure document - really!

Formalize game idea, incorporate feedback, iterate

Detailed game proposal chapter

Game pitch presentations (aim for 10 minutes)

Introduction Round & Group Formation

Name and current semester

Preferred platform (Unity, Godot, Unreal, own engine, other)

Focus area for this course (if you have one):

- Interest, specialization, or previous experience

- Learning a new aspect of game development

- E.g. procedural modelling, rigging, animation, shaders, networking code, etc.

Group (already have one or not yet)