GAME PROGRAMMING 2

COMPUTER GAMES IN 2D

Administration

- Contact
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  - Slack: #5sd811-2020
- Course Syllabus
  - https://www.uu.se/en/admissions/exchange/courses/list/syllabus/?kpid=37525&lasar=19%2F20&typ=1

POSSIBLE GRADES

- Pass with Distinction
- Pass
- Fail

GOALS

Understand and use collaboration tools for code and programming

Develop prototypes of game systems and game mechanics from game design specifications

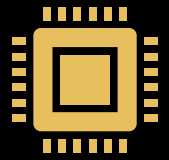
Demonstrate knowledge of and be able to apply common game programming patterns

Being able to calculate and apply 2D-vector mathematics for game programming

GOALS

Collaboration: Use GIT for version control

Math: Vectors, Matrices and Collision Detection



Programming: Make a 2D Game using C++ & SDL

EXAMINATION 3 LABS

Lab 1 – Collision Detection

- GIT
- Math (Vectors & Collision Detection)

Lab 2 – Animation

- GIT
- SDL, C++, Game Programming Patterns
- Matrices (Pass With Distinction)

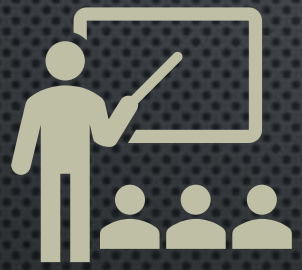
Lab 3 – Game Project

- GIT
- SDL, C++, Game Programming Patterns
- Math

READING TIPS

- Game Programming
  - Game Programming Patterns
    - https://gameprogrammingpatterns.com/contents.html
- MATH
  - Mathematics and Physics for Programmers by Danny Kodicek
    - https://epdf.pub/queue/mathematics-and-physics-for-programmers-game-development-series.html
- GIT
  - git - the simple guide
    - https://rogerdudler.github.io/git-guide/
  - Reference
    - https://git-scm.com/
- SDL
  - https://www.libsdl.org/download-2.0.php
  - https://lazyfoo.net/tutorials/SDL/index.php

LABS - REQUIREMENTS



Checkout & Hand-in using GitHub Classroom

Everybody needs to Create a GitHub Account

https://git-scm.com/

https://github.com/

Windows + Visual Studio Community 2019

https://visualstudio.microsoft.com/vs/

Lab 1 – Collision Detection

Pass

- Point
- Circle
- Axis aligned bounding box
- Line segment

Pass With Distinction

- Object oriented bounding box

Lab 2 – Animation

Pass

- Key frame animation
- Three types
  - Once
  - Looping
  - Ping pong
- Read animation data from file

Pass With Distinction

- Skeletal animation using bones
- 8 bones minimum

Lab 3 – Game Project

Pass

- Parallax scrolling
- Animations
- Screen/camera shake
- Collision
- Menu easing
- Configuration file

Pass With Distinction

- Particle Effects
- Serialization
  - Replay recording and playback
  - Save Replays to File