



FALMOUTH
UNIVERSITY

COMP350: Algorithms & Optimisation

1: Module Intro & The Optimisation Process

Learning outcomes

By the end of today's session, you will be able to:

- ▶ **Recall** the key stages of the graphics pipeline
- ▶ **Explain** the differences between a CPU and a GPU
- ▶ **Write** basic programs using SDL and OpenGL

Module Introduction



Module Aims

- ▶ Gain in understanding of techniques used professionally in the management of computing resources.
- ▶ Acquire knowledge and experience of concepts used to predict and model resource use.
- ▶ Acquire the knowledge and experience to enable critical evaluation of trade-offs to generate optimisation and efficiency.

Assignment Details



Assignment Overview

- ▶ Optimisation Task - 50%
- ▶ Porting Task - 30%
- ▶ Research Journal - 20%

Assignment 1 - Optimisation Task

- ▶ Take an existing project and optimise
- ▶ You have to identify the tools required for optimising
- ▶ I am more interested in your **process** during the task
- ▶ First Submission - **Friday 9th of February at 5pm**
- ▶ https://github.com/Falmouth-Games-Academy/bsc-assignment-briefs/raw/2017-18/comp350/1/comp350_1.pdf

Assignment 2 - Porting

- ▶ Continue on with the project from Assignment 1
- ▶ Port your project to one of the following Platforms - PS4, Android, iOS
- ▶ You will have to fulfil some of the Technical Requirement for that platform
- ▶ https://github.com/Falmouth-Games-Academy/bsc-assignment-briefs/raw/2017-18/comp350/2/comp350_2.pdf

Assignment 3 - Research Journal

- ▶ Write a 1200 word research journal on optimisation & porting
- ▶ Contribute to a community Wiki
- ▶ https://github.com/Falmouth-Games-Academy/bsc-assignment-briefs/raw/2017-18/comp350/3/comp350_3.pdf

Optimisation



Optimiser Mantra

Optimiser Mantra

Benchmark

Optimiser Mantra

Benchmark
Measure

Optimiser Mantra

Benchmark

Measure

Detect

Optimiser Mantra

Benchmark

Measure

Detect

Solve

Optimiser Mantra

Benchmark

Measure

Detect

Solve

Check

Optimiser Mantra

Benchmark

Measure

Detect

Solve

Check

Repeat

Coffee Break



Housekeeping and Admin



Supporting Hardware



Debrief

- ▶ **Recall** the key stages of the graphics pipeline
- ▶ **Explain** the differences between a CPU and a GPU
- ▶ **Write** basic programs using SDL and OpenGL