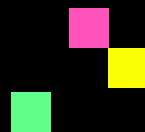
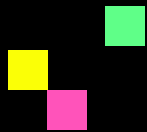


# Computer Games Development

START



Rui Rodrigues, Daniel Mendes

Previously, on DJCO...

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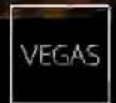


Info

Advanced: 100% completion  
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100% Completion



# Premise

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## Aim

Convey **knowledge** about the **process** of computer **games design** and **development**

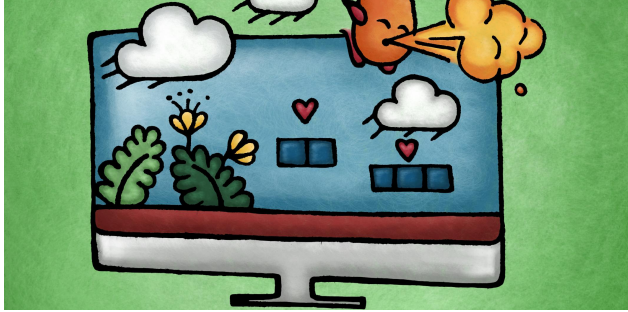
## Focus

- Game Design
- Game Programming
- Multidisciplinary Work



# Objectives, Skills and Learning Outcomes (1/2)

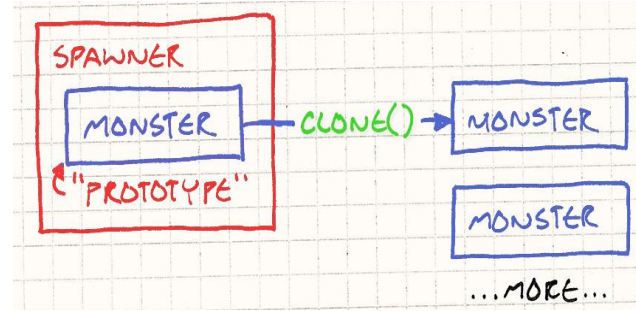
The process of computer game design and development



## Tasks and Skills

Identify **methodologies**, **tasks** and **skills** involved in a computer game project

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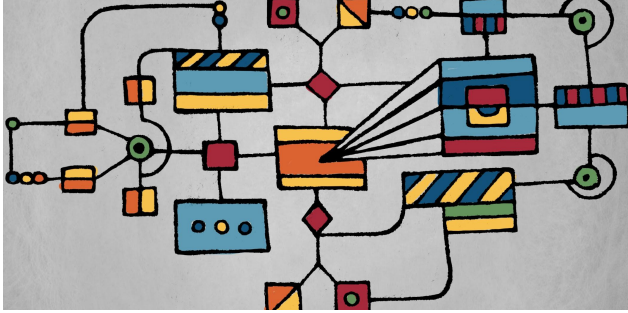
## Game Programming Patterns

Select and apply the **algorithms**, **design patterns** and **programming techniques** that are best **suited** to the design of a computer game

---

# Objectives, Skills and Learning Outcomes (2/2)

The process of computer games development



## Game Engine Components

**Use, develop or extend** the distinct **modules** that compose a **game engine** according to the specific needs

---



## Multidisciplinary Work

Develop computer game projects **integrated** in a **multidisciplinary team**, with 3D modellers and sound designers

---

# Program

---

## Based on "IGDA Curriculum Framework"

1. Computer Games
2. Computer Games Design
3. Computer Games Programming
4. Visual and Audio Design
5. The Industry of Computer Games



# Main Bibliography

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**Jesse Schell;**

"The art of game design"

**Robert Nystrom;**

"Game Programming Patterns"

**Jeannie Novak;**

"Game Development Essentials"

**Steve Rabin;**

"Introduction to game development"



# Lectures?

Well, a dozen classes is very little, so...



From bird's eye lectures...

Provide **key concepts and patterns**, to build **strong basis for further exploration**

---



...to breaking down problems

Discuss more **in-depth techniques** and solutions on a **case-by-case** basis

---



# Master Plan

To conquer the world, we must face some quests...

## Tutorial Level

- Game Design Lectures
- Game Programming
- Preliminary Project (PP) development

## (Near) Easter Egg

- PP submission and presentation
- 

## Main Quest

- Final Project (FP) development

## Cut Scene

- FP intermediate presentation

## Boss encounters

- FP status report
  - FP presentation and delivery
-

# Preliminary Project

Be aware of common challenges and pitfalls...

## Tasks

- **Select game genre** from a **limited set**
  - **Analyse mechanics** and theme
- **Identify challenges** in implementing
- Implement a demo level

## Groups

- Groups of 3 (three) elements



# Deliverables

Game and Source

Video and snapshots

Presentation

Short manual

# Final Project (1/2)

Get on the rollercoaster with designers and musicians

## Tasks

- **Propose** game **genre/type** and **tools/engine**
- **Develop** game **mechanics** and **theme**
- Identify challenges in implementing
- Implement prototype level(s)

## Groups

- Groups of 6 (six) elements

## Who's in the Mix

**Development:** DDJD/M.EIC

**3D Modelling and animation students**

**Sound design/audio students**

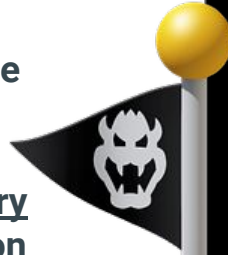


# Final Project (2/2)

Be aware of common challenges and pitfalls...

## Focus

- Going through the **main stages of game design and development**
- Face the challenges of multidisciplinary teamwork, planning and documentation



## Deliverables

Game Concept Document

Game Design Document

Game and Source

Video and snapshots

Presentation

Short manual

# Assessment

Looking for a High Score?

Here's the recipe:

$$FM = PP * 35\% + FP * 50\% +$$
$$MT * 10\% + EC * 5\%$$

(Peer evaluation on FP)

# Main Questline

**FM:** Final Mark

**PP:** Preliminary Project - 35%

**FP:** Final Project - 50%

**MT:** Mini-Test - 10%

**EC:** Evaluation from classes /  
Attendance - 5%

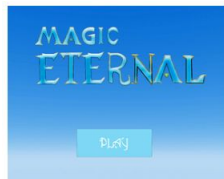


# DJCO

## 20/21



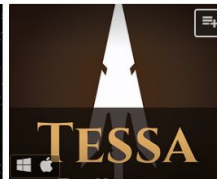
<https://itch.io/jam/djco-feup-projects-2021>



[A] Magic  
Eternal



[B] Alien's  
Journey: Escape



[C] Tessa: The  
Huntress



[D] Tales of  
Dragonfall



[E] Runner's  
High



[F] Lost Forest



[G] Death  
Upon Us



[H] Damian's  
Delusion



[I] Hellish



[J] Figmentum



[K] ChronoBlood



[L] Ivy's Journey

# Computer Games Development

