



INSPIRING REVOLUTIONARY EDUCATIONAL CREDENTIALS

Module 1





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UNIVERSITÀ
DEGLI STUDI
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ABOUT THE PROJECT

OBEC (2020-1-SE01-KA204-077803) is a KA2 Strategic Partnership co-funded by the Erasmus+ of the European Union. Led by Swideas in Sweden, the project gathers partners in Croatia (Regional Development Agency of Sisak-Moslavina County - SIMORA), Italy (LAI-MOMO Società Cooperativa Sociale & Università degli studi di Urbino Carlo Bo), Belgium (EURADA - Association Européenne Des Agences Développement).

OBEC is an innovative project that aims to explore the potentials of Blockchain technology to promote competency development and recognition of skills and qualifications by creating an innovative system to issue and validate learning credentials on a trial basis. Through this effort, the project's goal is to encourage the professional and academic integration of migrants, exchange students, and individuals with informal and non-formal learning backgrounds.

By contributing to the educational and economic integration of these targeted groups, OBEC envisions to benefit individuals with migrant background, students, teachers, education institutions, and employers. Focusing on the key issue of lack of uniformity and transparency in systems of validation of credentials, it is expected that this effort will result in positive effects in the working context, promoting employability, empowerment, and accessibility to the labour market.



OBEC Module 1

– Unity –

Topic:

Unity

Description:

This module introduce Unity, the tool used by many developers for creating and training their creations, which is powerful, yet easy to use, and can help them to build a game and successfully compete on the market.

This module also include the concept, motivation and methodology of the course so wider public, and especially target audience, can easily understand the program and its importance for current and future game developers.

Target Audience:

- Beginners in game development
- Unemployed people
- Pupils/students

Milestones:

- Introduction to the Unity program
- Reasons and motivation behind the course
- Description of the course methodology

Final Badge:

Advanced user in Unity



Type of Exercise:	Presentation and Reflection
Time:	1 hour
Contents/Activities:	<ul style="list-style-type: none">• What is Unity program and who is it for?• Importance of Unity program in video game development• Structure of Unity program• Reflection• Quiz
Objectives:	Upon completion of all milestones, the participants will: <ul style="list-style-type: none">• Have an information about Unity program, what is it, who is it for, and how it is implemented in video game development• Learn about importance and benefits of Unity program• Understand how the program is structured, what kind of knowledges and skills it brings to developers, and what is going to be learned
Assessment format:	Quiz
Material:	TBC



Project Partners



MODUL: UNITY



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GAME DEVELOPMENT – UNITY PROGRAM



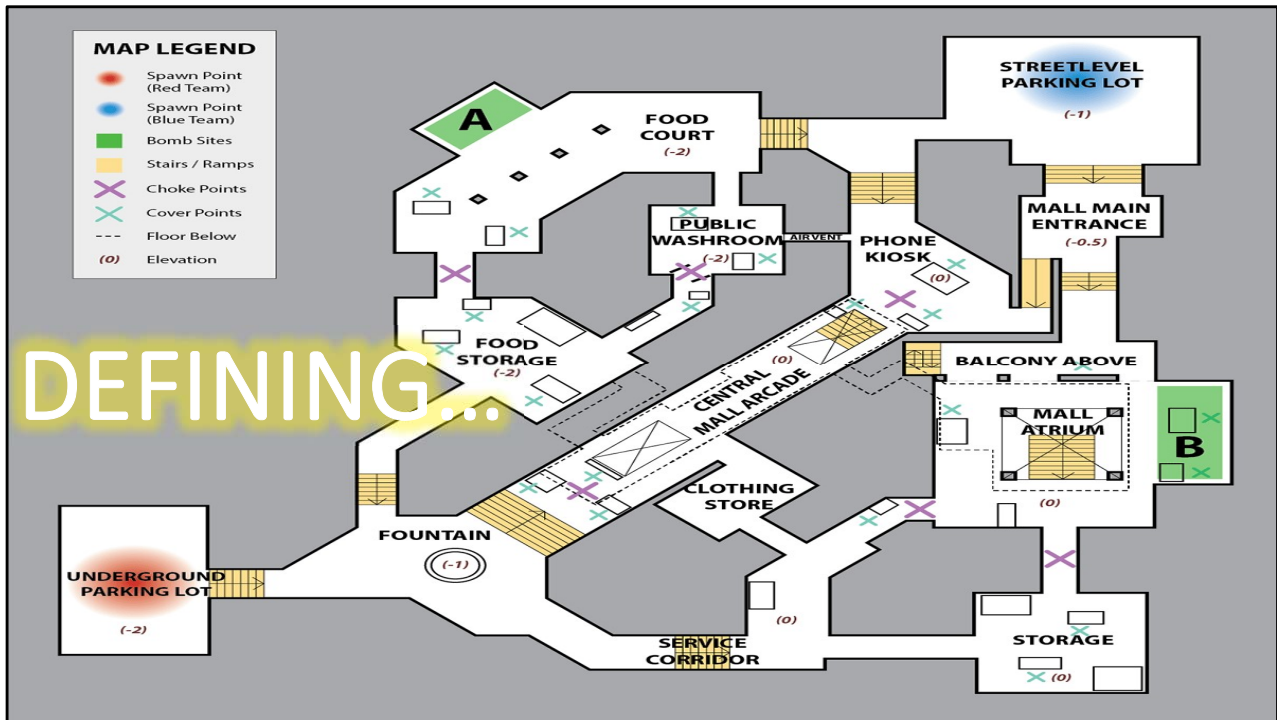
HOW IT ALL STARTED?



Games are most often made and developed by teams that usually consist of a smaller group of people. Everyone on the team has some role to play in the development of the game.



For example, designers create goals, rules, appearance, and role of the game. They are also responsible for all aspects of the development of the game from its beginning till the very end. Designers create visual elements of the game such as characters, landscapes, objects, vehicles, clothing, etc. So, it can be said that they create the very concept of the game. All codes and scripts required in the game are in charge of the developers. Different platforms have different programming requirements, and within the game itself, requirements such as physics, artificial intelligence, 3D interface development, control system, etc. must be met.



Level designers in the game are the people in charge of the game architecture. They use the game and change its appearance and complexity of the game, define the objects and characters involved in the game, their behavior when playing, challenges such as obstacles, places to hide, skill tests and other elements to interact.

Also, quite important is the audio designer who creates music, sound effects, voice character, noise, vehicles, etc.

WHY UNITY PROGRAM?



The Unity program attracts many programmers because it offers quality scripting languages. In terms of input and output formats, Unity supports most programs among them. Through that program, the participants of this education receive all the necessary knowledge and skills so that they can independently create their own video game. Unity is a tool used by many developers to create and ultimately train their creations. Unity software is very powerful, and at the same time very easy to use. Unity is not only software for building a game, it is a professional tool used by some of the biggest names in the entire videogame industry.

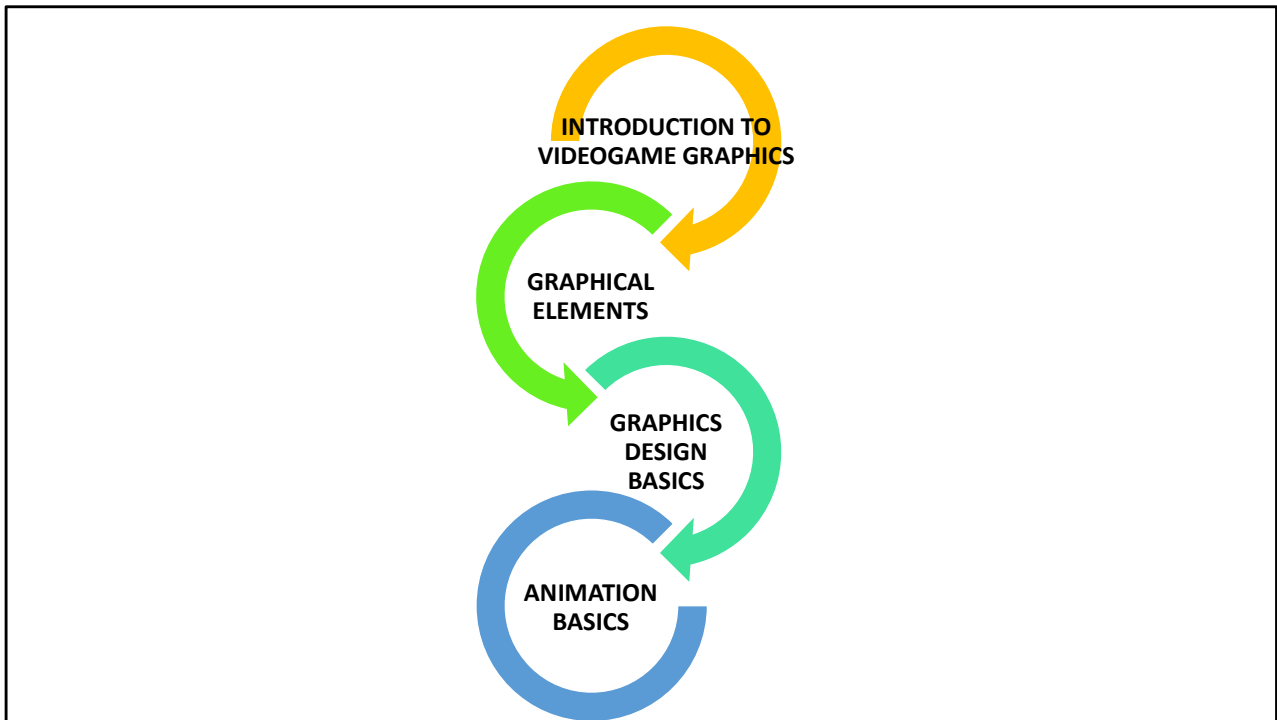
The image features three Super Mario Bros. figurines standing on a paved path. From left to right: Luigi in his green hat and blue overalls, Yoshi the green dinosaur, and Mario in his red hat and blue overalls. The background is a blurred green landscape. The text 'WHO IS IT FOR?' is overlaid in white, bold, sans-serif font across the middle of the image.

WHO IS IT FOR?

- beginners in game development
- unemployed people
- pupils/students

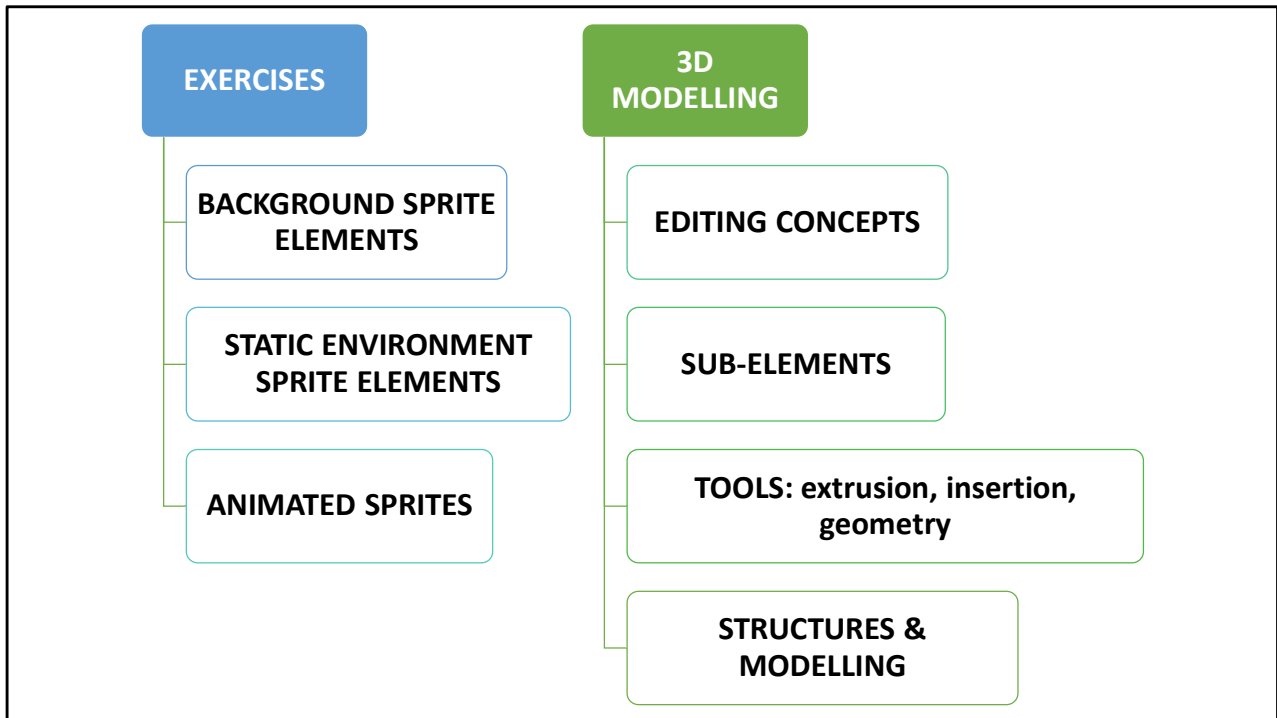


The Unity program consists of 9 themes, which are included into a 6-month program, and are going to be explained.

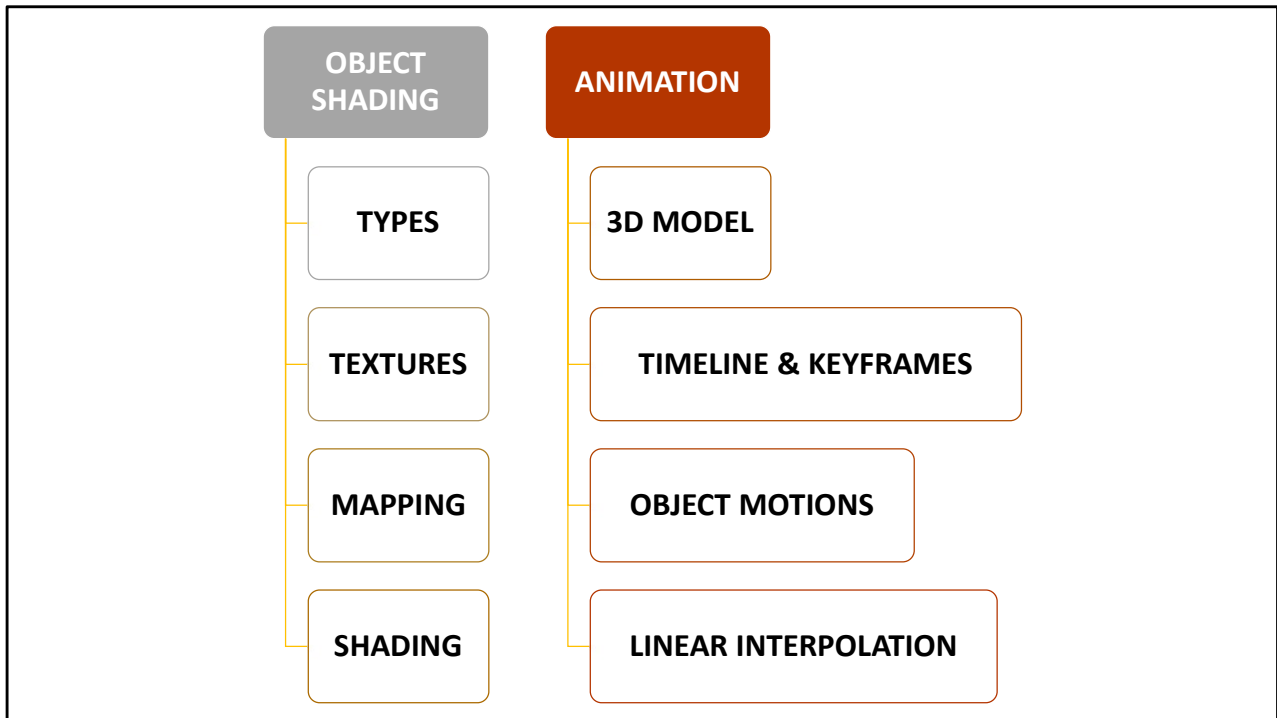


First and second months consists of:

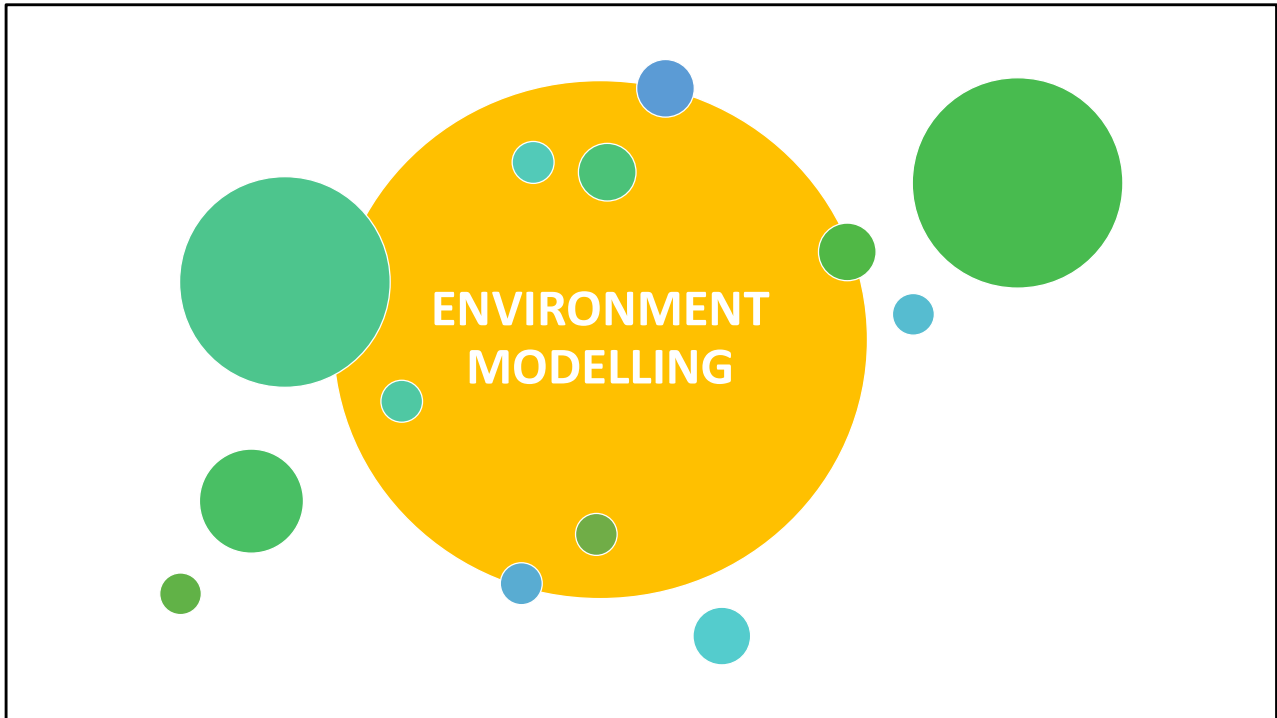
- Introduction to video game graphics – where participants will learn some graphics basics, shapes, colors, etc.
- Graphical elements – where participants will learn creating different sheets importance of palettes, pictures, dimensions, etc.
- Graphics design basics based on different technologies, methods, materials, etc.
- Animation basics



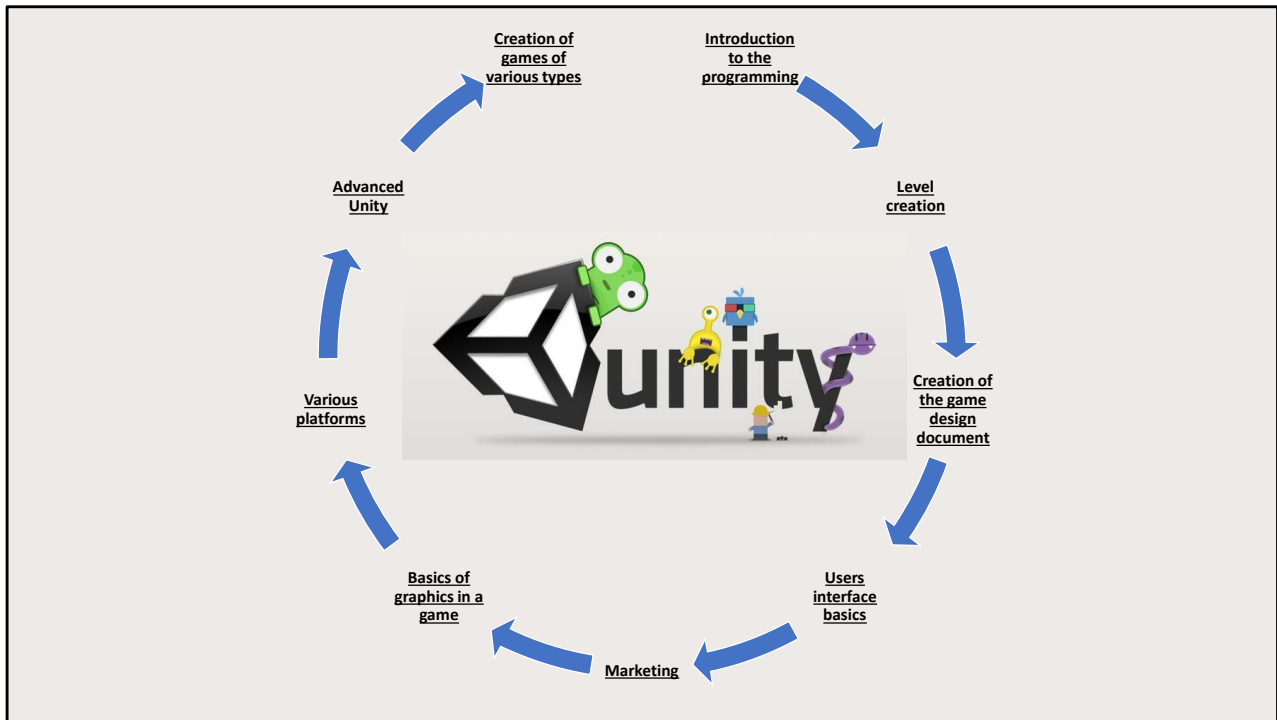
Third and fourth month consists of exercises and 3D modelling. Participants will learn different sprites elements, as well as different modelling and editing concepts. They will use different tools, hierarchy structure, mirroring, scale, dimensions, measurements, and so on.



Fifth month consists of Object shading and Animation where participants will learn many shading methods, procedural textures, shading types, timeline settings, keyframes, motions of the object according to the physical properties.



Sixth, final month consists of environment modelling in which is learned how to model objects using polygonal extrusion technique.



So, the whole program is organized like...

**INTRODUCTION
TO THE
PROGRAMMING**

**PROGRAMMING
BASICS**

PSEUDO LANGUAGE

**STUDY OF
PROGRAMMING
LOGICS**

**BASICS METHODS, FUNCTIONS AND
VARIABLES IN PROGRAMMING
USING UNITY AND VISUAL STUDIO**

**LEVEL
CREATION**

**SETTING A LEVEL
GRAPHICALLY**

**CREATION OF THE
GROUND**

**STUDY AND ADJUSTMENT OF THE
LEVEL FOR USER EXPERIENCE**

**CREATION OF THE SIMPLE
GAME FOR COLLECTING
COINS**

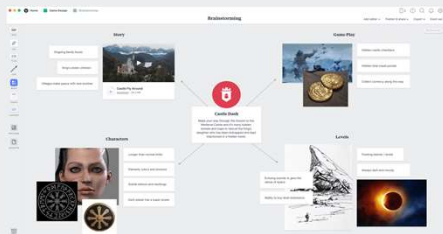


GAME DESIGN DOCUMENT

CREATION OF THE GAME CONCEPT

STORY WRITING AND DEVELOPMENT

CREATION OF THE DOCUMENTS FOR THE GAME WITH MENTORS HELP



USERS INTERFACE BASICS

GETTING ACQUAINTED WITH COMPONENTS

USERS INTERFACE DESIGN

USERS INTERFACE FUNCTIONS

CREATION OF THE MAIN MENU

CREATION OF MAIN MENU AND PAUSE MENU

MARKETING

SETTING A MARKETING PLAN

IDENTIFYING TARGET GROUPS

SELLING A GAME, CALCULATING PROFIT



GRAPHICS IN A GAME

CREATING A SCENE USING POST-PROCESSING TECHNOLOGY

RECOGNIZING REAL GRAPHIC ELEMENTS FOR GAME STYLE

SETTING A SCENE

GRAPHIC CREATION FOR 2D AND 3D GAME

LIGHT IN GAMES

VARIOUS PLATFORMS

GAME CREATION AND OPTIMIZATION FOR WINDOWS PCS

GAME CREATION AND OPTIMIZATION FOR CONSOLES

GAME CREATION AND OPTIMIZATION FOR SMART PHONES



ADVANCED UNITY

TURNING REAL WORLD PHYSICS IN GAME PHYSICS

USE OF LIGHT AND SHADOWS AND ENHANCED REFLECTION

CREATION OF PARTICLE ELEMENTS

USE OF AI IN GAMES

MULTIPLAYER



CREATION OF GAMES OF VARIOUS TYPES

CREATION OF 2D GAME TIC-TAC-TOE

CREATION OF 2D GAME – QUIZ

CREATION OF 3D GAME - FIRST PERSON SHOOTER

CREATION OF 3D GAME – PLATFORMER

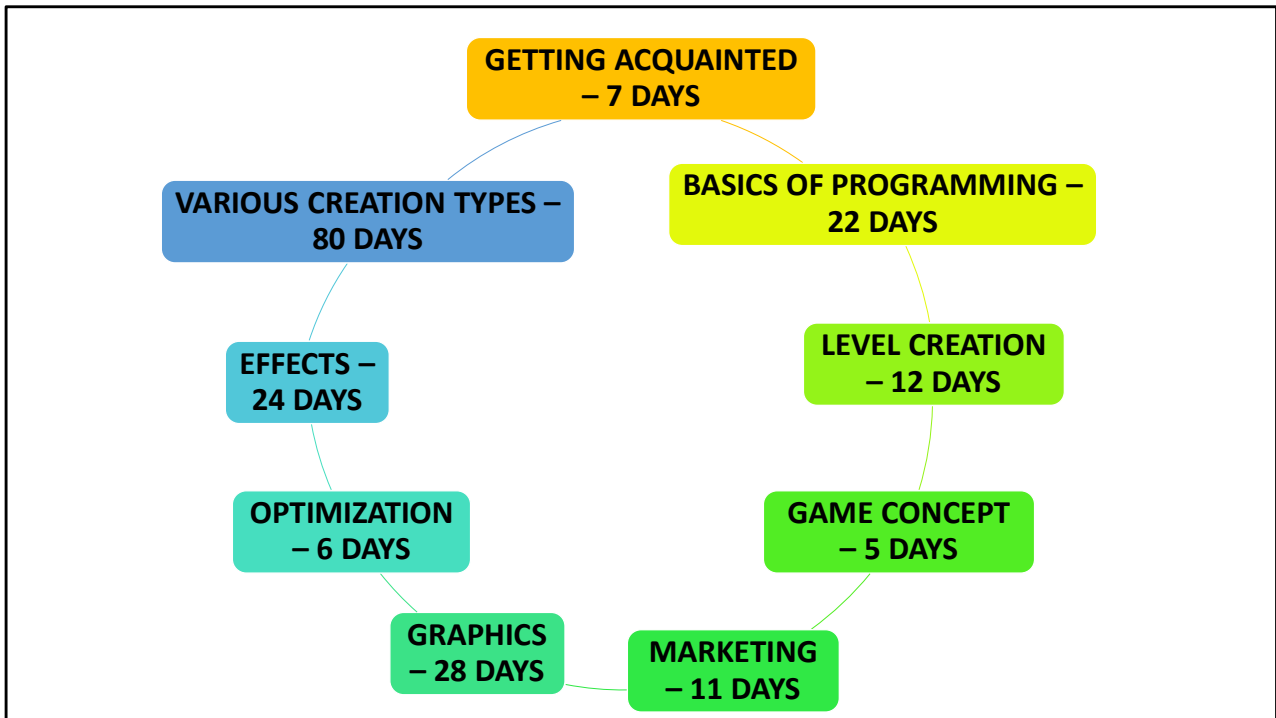
CREATION OF 3D GAME - REAL TIME STRATEGY

INDEPENDENT GAME CREATION AS FINAL EXAM

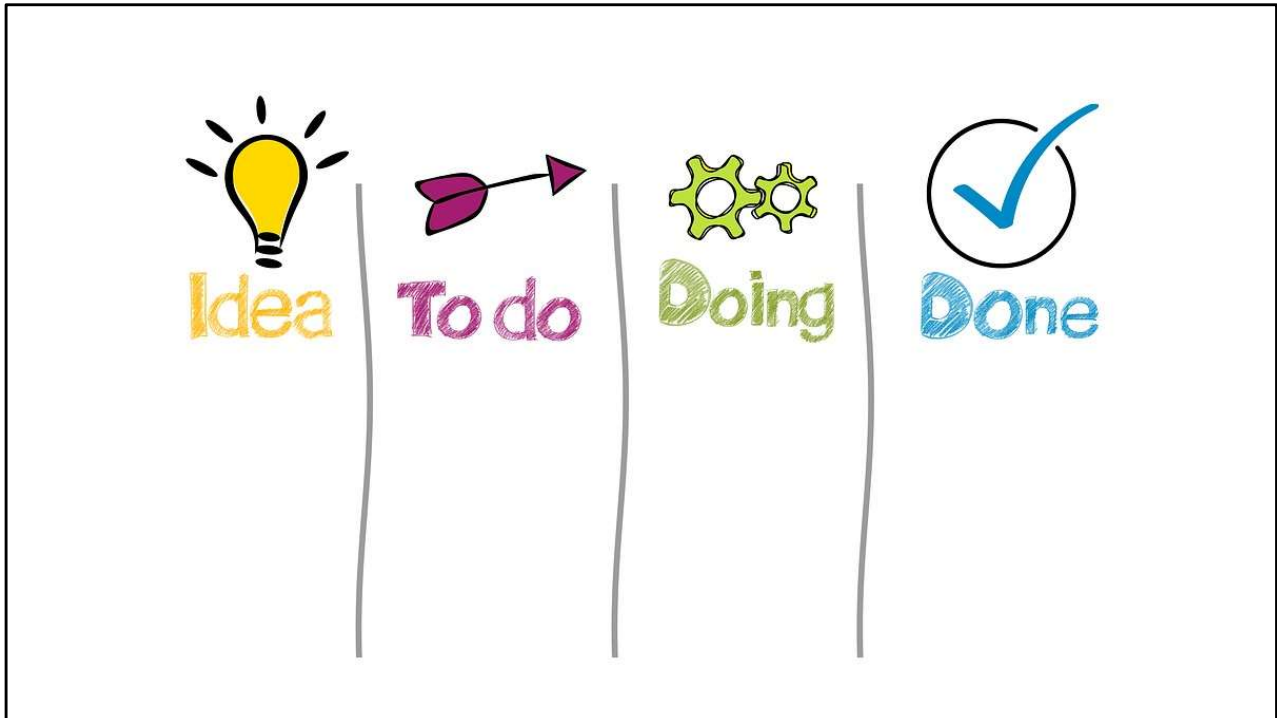
HOW LONG
IT LASTS?



So, how long it all lasts?



As seen in the circle, in 195 days, participants will be educated in 9 fields which were explained before. It will all start with Getting acquainted with an educational institution, as the first theme, and finish with Creation of games of various types, which will last for 80 days and, as that, is the biggest field of Unity program.



From begginig till the end, Unity program brings wide range of knowledge which is need for everyone who wants to join the world of video games.

ADVANCED
USER
IN UNITY



After completing the Unity program, participants will be advanced users in Unity.

IMPLEMENTERS



The implementers of the Unity program are Regional Development Agency SIMORA and its Business Incubator PISMO.



GAME OVER

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