

# Unreal Engine by Epic Games

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# Chapter 1

## Introduction

### 1.1 Presentation of the group

We are two 3rd year students - *Guillaume HUBERT* and *Rudy BARBERIS* - from the ESME Sudria in France, and we have chosen to do our Erasmus IT project about the Unreal Engine.

Even if we have never done such a project before, we wanted to explore some new aspects of programming. This Unreal Engine project allows us indeed to work and discover what is the Augmented Reality precisely and how it works. This is also an opportunity to discover the Unreal Development Kit which is a complete interactive tool to develop games and applications, such as Fortnite.

## 1.2 Presentation of the project

Our project is based on the using of Unreal Engine a game engine software. In this software, many interfaces permit to create your own universe by using only your imagination and a lot of tutorials. Because Unreal engine is so complete than it is a hard software to manage.

An other point that make the program accessible for all is that codes are written in C++ and because it is available very easily, this software is used by most of game developers around the world.

Today, the fourth version of the Unreal Engine is released and is now designed for Microsoft Windows, macOS, Linux, SteamOS, HTML5, iOS, Android, Nintendo Switch, PlayStation 4, Xbox One, and virtual reality.

For our project, we have to, with Unreal Engine, put some particles on objects we placed earlier on a plan.



Figure 1.1: example of use

## Chapter 2

# Unreal Engine

### 2.1 What is the Unreal Engine



Figure 2.1: image arcove

The Unreal Engine is a game engine software which permit to create a new world. The one we use is the fourth one, released on 2012 but became free on 2015, after 9 years of development and is used

in most of video games, including VR ones, or design platforms. One of the best improvement is a technique use to eliminate some lightning : voxel cone tracing. Moreover, UE4 became the first version of the game engine which allows to modify using C++ while engine is running.

## 2.2 How it works

In our case, we are using Unreal Engine in order to add particles to object placed on a plan before. The interface we use includes many parameters we can change to make anything we want. That's why we try to make fire and smoke. Thank to tutorials, it was easier for us to find the way we had to change data.

The software's complexity is a reason why Unreal Engine is so used by many developers, even if it's hard to use it.

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