DL NGL

NEXT GENERATION LABS

DE LORENZO

DL NGL-VIRTUAL

Module for the study of virtual reality and augmented reality

Augmented Reality and Virtual Reality are generating new business models, impacting on the improvement of processes in various industrial sectors, favouring and enriching the user experience and facilitating the performance of one's activities.

Virtual Reality (VR) aims at active involvement, bringing the user of the material into an abstract, albeit very real, dimension.

Augmented Reality (AR) allows to amplify some perceptions of reality through the use of technological devices, giving the possibility to those who use it to live experiences and nuances of reality that otherwise it would not be possible to know.

The 'Virtual Reality and Augmented Reality' Module adds to the Basic Module the devices and tools for studying and learning all the topics related to these new technologies in the computer world, particularly interesting in their educational applications.

The Module allows the student to acquire the necessary level to develop applications in the industrial and social environment. It proposes exercises in which the student will be able to define strategies to model a process and create the appropriate solution for that process.

It consists of a set of hardware and software tools, for testing and developing AR and VR applications:

- Windows personal computer with high performance graphics card.
- Software for creating applications in virtual and augmented reality.
- VR headset kit used to run applications and enter virtual reality.
- Smartphone used for augmented reality applications.

DL NGL
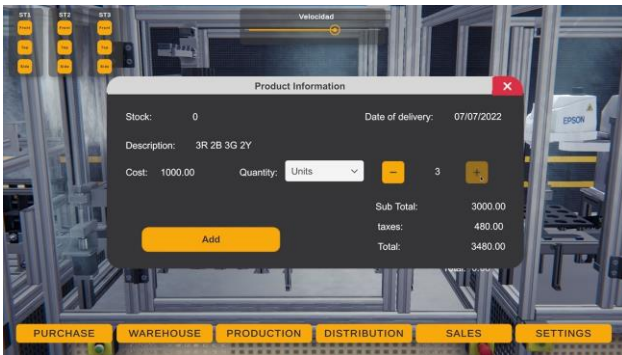
The student will be able to learn and understand the difference among Augmented Reality (AR), Virtual Reality (VR) and Extended Reality (XR), the industrial uses of AR and VR, the tools for its development, the installation of the platforms (Unity, Visual Studio, Vuforia), the AR and VR terminology and concepts, the user experience (UX), the basic management of the development environment (IDE), the building of AR/VR prototypes, etc.

Educational experience

Augmented reality:
- Generation of a GDD (Game Development Document).
- Identification of a marker.
- Identification of a marker and visualization of an associated image.
- Visualization of different types of images.
- Reading of a marker and graphical visualization with information about the process.
- Creating of a solution with compilation.

Virtual reality:
- Generation of a GDD (Game Development Document).
- Creation of a Virtual Reality environment.
- Performing actions in components of the 3D space.
- Design and implementation of a user interface.
- Use of virtual buttons and information elements.
- Creating of a solution with compilation.

NEXT GENERATION LABS

The DL NGL-VIRTUAL module can be integrated in the NEXT GENERATION LAB - DL NGL laboratory through the minimum purchase of the following modules:

- **Teacher Station - DL NGL-BASE**
  Necessary for the proper functioning of the laboratory. Quantity: 1.

- **Student Station - DL NGL-STUDENT**
  To be multiplied by the number of "student stations" to be created.