

GAME DEVELOPMENT USING A GAME ENGINE

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Background. The IT sphere does not stand still — almost every person on earth has a smartphone or a computer. With their help, one can not only pursue education, but also have a good time. Therefore, more and more programmers want to work in the gaming field [1].

Aim. The aim of the study is to find an optimal way to develop a genuine computer game.

Methods. The combination of an available game development engine (*Unity, Unity Technologies, USA*) [2] and writing a novel code.

Many developers choose to develop a game using a Game Development Engine. Game Engines can make the process of creating a game much easier and enable developers to reuse lots of functionality. The engine community provides us with a large number of ready-made templates and resources (Fig. 1), among which we can choose the one we like. We can also find a ready-made item among the developers' products.

Another way to develop a game is to write the code from scratch. To create a similarity of 3D graphics, we need to use ray casting [3]. This is one of the rendering methods in computer graphics, in which the scene is built on the basis of measurements of the intersection of rays with the rendered surface (Fig. 2). Various associations with physics are already beginning to appear here. The application of various mathematical laws is observed.



Fig. 1. Creating a game landscape using a Game Development Engine

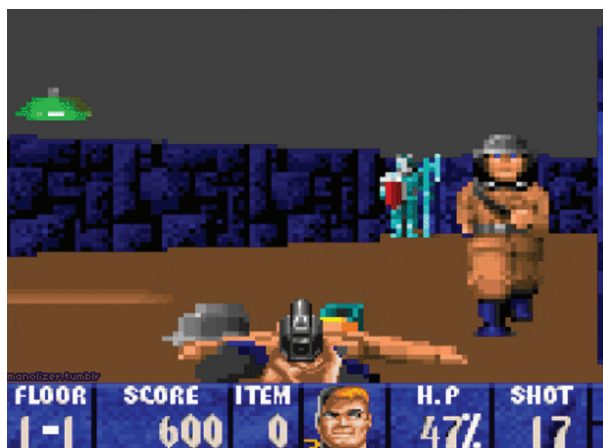


Fig. 2. Creating a game by writing a code from scratch



Fig. 3. Creating a game using the two methods

But what happens if we try to combine these two methods into one? Let us figure it out. The advantage is that we have a complete freedom of action. We do not depend on the community products (which are mostly expensive) and we can create whatever we want. Moreover, having the possibility of coding, we can adjust some points ourselves. By combining two methods in one, we have an almost unlimited range of possibilities (Fig. 3).

Results. Combining the methods of writing a code and using a game engine has allowed us to develop a game easily and in a unique way with an original design of locations and characters, with a genuine plot and soundtrack.

Conclusions. Game development is a rapidly developing area. Though it seems to be complicated in some ways, everyone can succeed in this industry if they have ideas and desire to learn something new.

Keywords: computer games; game development; game development engine; writing code; 3D game.

References

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