Home Assignment, HA1

General description of the result

You should create 3D platform game (https://mmo13.ru/games/feature/3d-platformer, https://ru.wikipedia.org/wiki/Платформер) with third person view and procedure level generation. Besides, you should write README which will contains description of the main features of control and gameplay.

Reference: Fall Guys.

Tasks

1. The level must contains disparate platforms on which the character moves.
2. The character controlled by the player can run on platforms and jump from platform to platform.
3. The movement of the character left-right should be uniform (as *Fall Guys game*).
4. Levels are generated procedurally (the entire level is generated immediately before the start of its passage)
5. The difficulty of the game increases from level to level
6. Mandatory obstacles:
   a. Gap, "chasm", between platforms
   b. Walls on platforms that you can jump over
   c. Moving objects on platforms, collision with which is fatal
   d. Spinning platforms that rotate and prevent the player from running straight ahead
   e. Objects knocking off the platform

   For reference, you can take the Fall Guys game and study how it is implemented in it.

7. There are bonuses that need to be collected
8. Boots are present:
   a. Passing through walls
   b. Deceleration of all moving objects by N seconds, the value of N is derived empirically during testing
9. The balance is set up (there should be no permanent bonuses, the difficulty increases, but at the same time the user should not have experience in such games so that he can pass it)
10. The control is intuitive for the user (it should be justified by convenience, unlike other possible control methods)

The addition of additional bonuses and other features is also welcome, provided that the 8th and 9th points are fulfilled.

Form of presentation of the result

The following is provided for verification:

- Text file *README*, which contains design documentation of your gama;
- Link to the repository (*Git*).
  - *Git* repos should contains correct **.gitignore** file (https://github.com/github/gitignore/blob/master/UnrealEngine.gitignore)
  - There should be no folders and files in the repository that should be ignored by the correct**.gitignore**

Rules for evaluating work

Projects that are not being assembled, compiled, or launched are rated unsatisfactory - **1 point**.

Incorrect use of principles *Gameplay Framework* (*GPF*): the implementation does not match to *Best Practice Unreal Engine* 4 (https://docs.unrealengine.com/en-US/Gameplay/Framework/index.html) - **2 points**.

The game has not been tested for playability, that is, impassable (unbalanced) levels appear with a high probability - **3 points**.

The score above 4 points for the work is calculated according to the criteria:

- Playability (including the adjusted balance of paragraph 9)
- Procedural level generation works correctly (paragraphs 4, 5)
- Character management works correctly (paragraphs 2, 3, 10)
- *Level Design* corresponds to the task (paragraphs 1, 6, 7, 8)
- Documentation of the code (meaningful comments where they are needed esign corresponds to the task https://docs.unrealengine.com/en-US/Engine/Blueprints/UserGuide/Comments/index.html)
- Adhering to the principles of *Assets Naming Convention* (https://ue4community.wiki/legacy/assets-naming-convention-qqp2b5m1)
- The order in the project, that is:
    - Assets that are not in use should not be present
    - There must be an order in the hierarchical structure of the location of assets
- Informed choice of use *Event*, *Function* и *Macros*
- The design document contains:
    - All sections from the disdock template for GP1
    - Description of the generation of levels and increasing their complexity
    - Description of bonuses
    - Description of all moving obstacles
    - Additional items for added copyright features
    - For all mechanics taken from existing games, it is necessary to describe which you used and why it is taken, how this mechanic reveals the gameplay
    - Gameplay schemes (in Miro)
    - Links to sources of assets, sounds, ideas, etc.