# Name of the game

Academy Challenge

# Goal of the game

The goal of the game is for the player to successfully graduate through the football academy. To do this, they must score at least 4/5 goals on every level they play. The game has 9 levels, and a practice range.

# Features that have been implemented

Every single feature that has was listed in the spec has been implemented.

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| --- | --- |
| **Feature listed in spec** | **Implemented** |
| Collision detection | Yes |
| 3D primitives | Yes |
| 2D GUI | Yes |
| GUIText components | Yes |
| GUITexture components | Yes |
| Scripting (JavaScript or C#) | Yes |
| FPS view | Yes |
| Textures | Yes |
| Ambient sound | Yes |
| 3D objects | Yes |
| Detection of key inputs | Yes |
| Rigid Bodies | Yes |
| Application of forces | Yes |
| Explosions | Yes |
| Animation using Unity3D built-in animation | Yes |
| Physics material | Yes |
| Simulate friction when the ball rolls on the ground | Yes |
| Simulate wind force when the ball is in the air | Yes |
| Trail and/or particles | Yes |
| Colliders/Triggers | Yes |
| Multiple cameras | Yes |
| Following objects from different camera angles | Yes |
| Automatic switch to camera based on events (e.g., shooting) | Yes |
| Animation Events | Yes |
| Play animations from a script | Yes |
| Character Animation with Mecanim | Yes |
| Joints | Yes |
| Interactive Cloth (and cloth renderer) | Yes |
| Character Joints (e.g., ragdoll) | Yes |

# Gameplay

Every feature listed in the gameplay section of the spec was also included. Instead of having 4 levels to get through, players have 9 levels to get through.

# Gameobjects and Attached Scripts

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| --- | --- |
| **GameObject** | **Script Attached** |
| Ball | ApplyForce |
| Launcher | Launcher, Switch\_Camera |
| Defender | DefenderScript |
| GoalKeeper | GoalKeeper\_Script, GoalKeeper\_SideToSide\_Movement, PlaySaveSound, GoalKeeperJump, GoalKeeperJump\_Down |
| Fan | FanScript |
| TimerGUI | Timer |
| WindZone | ApplyWindForce |
| Crossbar, GoalpostLeft, GoalPostRight | CreateExplosion |
| GoalTrigger (Child of GoalPrefab) | UpdateScore, FansCelebrate |
| Ball (These scripts is only on the ball at the main menu) | MainMenuBallScript, RotateBall |
| Defender(This script is only on the defenders on the main menu screen) | MainMenuDefender |
| Defender(This script is only on the defenders kicking the ball on the main menu) | MainMenuBallKick |
| This script is on the menu options | MenuSystem |
| Camera (on the main menu) | RotateCamera |
| MissLeft, MissRight, MissOverTheBar | ShotMissed |
| StopBallMomentum (Empty gameobject that is a child of the goal) | StopBall |
| Camera1, Camera2, Camera3 | SwitchCameras |
| WindDirection (Child of the First Person Controller) | WindDirectionScript |

# Sources for Assets

|  |  |
| --- | --- |
| Assets Used | Source |
| Lowpolyblocks (Surrounding buildings) | <http://u3d.as/content/b-mstr-m/low-poly-city-block/2vJ> |
| Players & Animations | <https://www.assetstore.unity3d.com/en/#!/content/3346> |
| Stadium | <https://www.assetstore.unity3d.com/en/#!/content/3346> |
| Goal | <https://www.assetstore.unity3d.com/en/#!/content/3346> |
| Ball Texture | <https://lh3.ggpht.com/L91KFu2zFHSM-CUjD_VbjXGiU1IeJpANvMkkmysrQ6sZONqe1QFBg-SC-UNMNFOA292vZuI=s170> |
| Ball – GUI Texture | <https://lh4.ggpht.com/LXbulEXQfNLGCJ6qpXkCCOOUE5BTMpp2vrVPj5UmOaQu9TNz1F8FOj1VdBvvzEgOFPxhaw=s85> |
| Clock – GUI Texture | <https://lh5.ggpht.com/kfNUDL032GPDz6dvYmOW51TLyFfdiYJXkkqdTKhunCOw0tXGIAgE3FZCcWfBNm3YdBaoTD0=s85> |
| Corner flag texture | <https://lh6.ggpht.com/fYIWol1NgduI2EvzMUsmPuzztIUJ1GZDak5Dt9_iDwWuBcemi1Po4enCrzAEnZoGyaYbxg=s85> |
| Ad Logo | <https://lh4.ggpht.com/QInL6d_VwgywJNvxx3GEd0JJcDtBXZqijUy1ASk6JlyfCh04aN5skIbqEZPSpevS3mA=s85> |
| Target Texture | <https://lh3.ggpht.com/JAMeosruJAXSXvPHo7qGgS2loI2AJB3U0s0g_oEb7xt-xDFzw5O7XcOUqHSQGYNqApe_SQ=s85> |
| Wood | <https://lh6.ggpht.com/Tgv2gNV1MXs48OwGuT5AF9_ZFv9ZeXhoKzdl74-8MFMzhfgw8f2IcwWJfT1MGxDl_mce=s136> |

# Extra Notes

I had an issue where the interactive cloth kept crashing my game. The only way I could stop this happening was to lower a lot of the settings attached to the interactive cloth. As a result, the ball often goes through the net. I know that to stop this, I need to increase the stiffness of the cloth, and to increase the force it applies to objects colliding with it, however when I do, it crashes. I could have just put a normal collider around the goal, but I thought it was better to just have the interactive cloth in the scene.

## For 70% or more : students have demonstrated independent learning by adding some functionalities that have not been covered during the classes.

I really didn’t know what to do for extra functionality as the spec listed a lot of things o I tried to polish the game as much as possible in little ways.

* Didn’t use any scripts given in class or in class tutorials
* Instead of using GUI textures for the power bar, I used a slider, as gui textures were covered in class
* Created a menu system that reacts to the mouse position and input
* Added Random Level functionality
* If the player has a camera selected, the camera follows the players position, but when they shoot, the camera will follow the ball. When the ball stops or is reset, the camera will follow the player again. This way the player can run around the pitch and enjoy the scenery.
* I added the official Match Of the Day audio as the main menu music
* The best feature is the goalkeeper. It’s a fully functioning keeper that properly dives and saves the ball and then returns to his starting position
* Created a state machine for fans so they celebrate when you score
* Added surrounding buildings to make the stadium look like it was in a city
* Added a target practice range
* Added 5 extra levels