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|--------------|--|---|
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| Implemented  | Feature  | Location of Implementation (wrt solution Directory)   |
| yes          | Game loop  | main.cpp  |
|              | <b>Debug Drawing:</b>  |   |
| yes          | Basic Debug Drawing  | main.cpp  |
|              | <b>Object Architecture:</b>                                      |   |
| yes          | Object architecture (Component based)                            | Components  |
| yes          | Garbage Collection (object management)                           | main/close()  |
|              | <b>Communication:</b>  |   |
| yes          | BasicEvents  | PhysicsManager.cpp (Collide Event)  |
| yes          | Subscription Model   | EventManager.cpp  |
| yes          | Events & Messaging System  | EventManager.cpp  |
|              | <b>Data Driven Design:</b>                                       |   |
| yes          | Basic Text Serialization   | ObjectFactory.cpp   |
| yes          | ObjectFactory (Creation of Objects from data files)              | ObjectFactory.cpp   |
| yes          | Level Files  | level.txt   |
| yes          | Archetypes   | main  |
| yes          | advanced serialization/ multiple formats                         | serializing gameObjects using json in ( GameObject/ObjectFactory.cpp ) and text-based serialization of shader files in ( Graphics/Shaders.cpp ) |
|              | <b>Frame rate Controller:</b>                                    |   |
| yes          | frame rate can be manually controlled                            | FrameRateController.cpp   |
|              | <b>Input</b>   |   |
| yes          | Input Manager providing keyboard and mouse key                   | InputManager.cpp  |
| yes          | and button "IsPressed", "IsTriggered" and "IsReleased" detection |   |
|              | <b>Graphics:</b>   |   |
| yes          | Hardware accelerated sprite rendering using shaders              | Sprite.cpp  |
| yes          | (textured quads/meshes in OpenGL or DirectX)                     |   |
| yes          | Shaders  | Main-> Graphics/Shaders/ (location of fragment and vertex shaders)  |
| yes          | Texture  | sprite/resourceManager[rscmgr]  |
| yes          | Basic Sprite Transformation                                      | sprite[]  |
|              | <b>Physics:</b>  |   |
| yes          | Basic collision detection between circles                        | CollisionManager.cpp  |
| yes          | Basic Collision response   | PhysicsManager.cpp  |
| yes          | Collision between different bodies type                          | CollisionManager.cpp  |
|              | <b>Game Requirements:</b>  |   |
| yes          | Human player control of a ship, avatar, or character             |   |
| yes          | Game runs at 30 fps most of the time                             | frc[frameratecontroller]  |
| yes          | Collision between projectiles, player, and enemies               | physics manager   |
| no[1 type]   | At least 2 different types of enemies with different behaviors   | components[updown/enemy]  |
| no[1 type]   | Player has 2 different types of weapons or power ups             | Control Manager[when key pressed]   |
| no[lose]     | Game must have a win / lose condition                            | based on Bool value if player loses four lives then he dies   |