**Feature Number:** 3

**Feature Name:** Map Creator

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**Tester:** Brandon Louis

**Constraints:** Size of map must be smaller than the resolution of the screen, as the game window needs to be resized to map size for proper displaying.

- **LevelClass** - Used for managing all loaded level data. Inherits from the IScene Interface. Maps will be created using the Tiled Program. Tilesets made in tiled must be made of separate sprites, and layers must be in CSV format. Each map will have layers for sprites and a layer for collision objects. Map data will be read in using XML Linq. The class will contain a struct for tile data, an array of tiles for the tileset, a grid structure consisting of a 2D array representing the map, an array of grids for the layers of the map, and an array of BoxColliders for objects.
    - LoadSceneData() - Loads the level data. Checks that each tile in the tileset is a .png. Populates the tileset array in order, with tile id corresponding to position in the array. Checks that the layers are encoded as CSV. Goes through each layer of the map and populates the grid with the tile. Goes through the object layers and creates BoxCollider objects from the position and dimension and adds them to the object array. Creates the physics world, sets the unit conversion and spawns the player.
    - UnloadSceneData() - Unloads all of the assets in the level from memory.
    - UpdateSceneData(GameTime _gameTime) - Updates any level data. Takes in the gameTime value. Calls the OnUpdate method of player and collider objects. Steps world physics using gameTime.
    - OnDraw(SpriteBatch _spriteBatch) - Uses the grid to draw each sprite on the screen using the level's tile size. Draws the player and any collider sprites to the screen.