**VGP230 - 2D GAMES PROGRAMMING**

**Final Project Assignment**

**Title:** Final Game Project

**Date Assigned:** Week 8

**Due Date:** Week 11 in class

Requirements:

|  |  |
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| Basic **Required** Requirements for your game: | * 10 |
| * Game Menu (New Game / Exit Game … ) * Activation / Deactivation of Debug draw * Interactive Keyboard / Mouse / Controller Input * Level Switching when finishing level – or Endless Mode * Read me file for player controls or In Game Controls Screen * Victory / Defeat Screen or scoring metric (For endless play) | * /1 * /2 * /2   /2   * /1 * /2 |

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| --- | --- |
| Code Quality / Submission | * 25 |
| * Efficient and well-structured C++ code * Effective use of object oriented / encapsulation / and or other programming principles * Code modularity and organization * File relevance (all files have a purpose in submission) + No missing files | * /10 * /5 * /5 * /5 |

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| Game Mechanics, Interactivity, and Performance | * 25 |
| * Interactivity with user input, responsive controls, intuitiveness * Accurate collision detection during gameplay experience * Efficient memory management, including proper allocation and deallocation of resources, and when pre-allocating when able * Smooth and consistent frame rates during gameplay * Gameplay stability – (crashes, bugs) | * /5 * /5 * /5   /5  /5 |

Top 2 sections above are graded by instructor. With basic requirement, you will have a max initial grade of 60/100. Complete optional sections for more points. Note, grading per section may be subject to change depending upon submission

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| Game Assets |  |
| * Self/Team Made Sprites (Requires all source files used) * Self/Team Made Sprite Animations (Requires all source files used) * Self/Team Made Tilesets for tilemaps (Can use online images) * Tilemaps * Self/Team Backgrounds | * /1 per max 4 /1 per max 4 /1 per max 4 /2 per max 4 /1 per max 4 |

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| Game Design |  |
| * Multiple Levels + Level switching upon completion * Game Puzzles * “Fun” – Visual, Challenging, but Doable * Collectibles / Powerups * Timer / Timed Based Challenges * Player to Environment interactivity (aka jumping to destroy a block) * Player vs Environment mode * Player vs Player mode * Player + Player Co-op mode * Endless Runner mode * Turn based mode * Point / Click adventure | /4 /4 /4 /4 /4 /4 /4 /4 /4 /4 /4 /4 |

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| Movement |  |
| * Player Movement * External Controller support (Xbox Controller, touchpad…) * Enemy waves * Enemy dealing contact damage to the player * Enemies with AI * Bosses with AI * Path Finding * Collisions and Physics | /2 /4 /2 /1 /1 /5 /2 /2 |

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| --- | --- |
| Visual Effects |  |
| * Particle Effects * Parallax Effects * Sprite Switching * Sprite Animation * Tiled Environments * Blur effects * Camera changing / player tracking | /3 per max 9 /3 /1 per max 4 /1 per max 4 /1 /3 per max 9 /3 |

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| --- | --- |
| HUD |  |
| * Player lives * Health bar for player and enemies * Player Score * High Score tracking / screen | /4 /2 /1 /1 |

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| Audio Effects |  |
| * Music * Music Transitions for different phases / levels * Sound Effects for player interaction, (jumping, pickups, victory, death…) * Sound Effects for enemy | /1 /2 /2 /2 |

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| Advanced Menus |  |
| * In Game Controls Screen * Game mode selection * Saving / Loading (Serialization + Deserialization of data) * Audio Controls (On / Off… volume… etc) * Tutorial or Onboarding (First Time User Experience) * Non-windows Platform Support (aka mobile) | /2 /2 /3 /1 /5 /10 |

Questions about the grading rubric above and other in-game features that are not covered above can be asked about

Please hand in your project on Omnivox. Steps before handing it in:

* **Test your project!**
* Group all classes + headers + assets used in same folder
* **Add all features implemented in the grading rubric you implemented, -- can simply just bold or star each category you want to be graded on**
* Zip all together and hand in on Omnivox.
* **No late submissions will be accepted. Final day of class, game demos must be shown**