**Contribution Matrix**

**Key**

MN = Mark Nicholson

AM = Ayrton Magras

LT = Lee Taylor

AA = Adomas Anskaitis

JC = Jack Collins

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| **Name** | **Date** | **Task (Feature/function/method implemented)** | **Brief explanation** |
| MN | 08/12/2020 | 3d model for weapon | Used by the player to shoot enemies within the game |
| LT | 14/12/2020 | Test Level | Developed a small test level with cubes and rectangles |
| LT | 14/12/2020 | Created MouseInput class (early version – turret placing functionality) | Coded an alpha version for the player to place turrets in a test level |
| LT | 15/12/2020 | Patched MouseInput class | Tested and patched bugs for turret placing mode |
| LT | 16/12/2020 | Modelled the first version of the first level | Modelled the first level in a 3D modelling program SketchUpPro |
| LT | 17/12/2020 | Finished modelling first level | Continued modelling the first level, used Adomas' feedback to expand it in areas |
| LT | 18/12/2020 | Imported my first level into Unity | Imported my level mesh, tested it with 'turret placing mode' |
| LT | 18/12/2020 | Patched First Level visual bugs | Remodelled some small areas in level one (small visual bugs) |
| LT | 18/12/2020 | Patched and developed further MouseInput class | Fixed some minor bugs in turret placing mode |
| LT | 21/12/2020 | Patched MouseInput class | Small patches to turret placing mode and commited it |
| AA | 23/12/2020 | Waypoints system | A dynamic enemy pathing system (enemyMovement.cs, Waypoints) |
| MN | 26/12/2020 | PlayerAim.cs (Class/Script) | this controls all camera movement for the 3rd person perspective for the game including aiming and looking around |
| AA | 27/12/2020 | Enemy movement | Implemented enemy movement using waypoints system, following a path (enemyMovement.cs) |
| LT | 27/12/2020 | Polished first level model | Finished modelling the first level and committed it |
| AA | 29/12/2020 | Enemy attacking | When the player gets within the short distance and at the right angle to enemy, it starts attacking the player (enemyMovement.cs) |
| AA | 30/12/2020 | Enemy animations (walking, attacking) | Implemented animations for enemies (AI animController, enemyMovement.cs) |
| AA | 30/12/2020 | Character movement | Implemented character movement using Mark's (teammate) 3rd person controller as a reference (characterMovement.cs) |
| LT | 05/01/2021 | Edited enemy movement class | Added enemy hits player |
| LT | 05/01/2021 | Added enemy manager class | When all enemies in a single wave have been killed the camera switches to overhead |
| LT | 05/01/2021 | Updated enemy manager class | Implemented a wave mechanic, enemies attack the player in waves |
| LT | 06/01/2021 | Added Shoot class | Player may aim at enemy and shoot the enemy to decrease the enemy’s health |
| LT | 06/01/2021 | Updated game | Combined my turret placing mode from test level into actual level |
| LT | 06/01/2021 | Added enemy health class | Enemy’s have health, and their health amount is drawn above their head as a health bar |
| LT | 07/01/2021 | Updated MouseInput | Player may rotate the turret they place |
| LT | 07/01/2021 | Updated first level | Placed valid zones for the turrets in the first level |
| LT | 08/01/2021 | Updated MouseInput and added IntersectionPrevention class | When the player is placing a turret the turret cannot be placed or rotated by the player into the level |
| LT | 09/01/2021 | Updated player object | Added player HUD so that the player can see their money, health, and current wave |
| JC | 10/01/2021 | Main menu | Created main menu asset for later use |
| JC | 10/01/2021 | Options menu | Created options menu asset for later use |
| JC | 10/01/2021 | Created MainMenu script | This provides functionality for the Main Menu |
| LT | 10/01/2021 | Updated wave system | Enemy’s speed increase per wave and can manager more enemies |
| MN | 12/01/2021 | Player model | Controlled by the player to interact with the game |
| MN | 12/01/2021 | Enemy model | Model for the enemies within the game |
| JC | 12/01/2021 | Level select menu | Created level select menu asset for later use |
| LT | 12/01/2021 | Modelled Turret 1 | Created a 3D model of a turret in SketchUp that has 4 small barrels to later shoot from |
| LT | 13/01/2021 | Added Turret class | Added lookmode and combatmode functionality to the turret to kill enemies in a level |
| LT | 14/01/2021 | Added Bullet class | Bullets travel in a straight line and when they collide with an enemy they decrease the enemy’s health |
| JC | 15/01/2021 | Pause menu | When pressing ESC in game, the game pauses and a menu is brought up |
| JC | 15/01/2021 | Created PauseMenu script | This provides functionality for the PauseMenu |
| LT | 15/01/2021 | Modelled Turret 2 | Created a 3D model of a turret in SketchUp that has a long barrel to shoot a laser from |
| LT | 15/01/2021 | Created Turret Laser class | The laser turret inherits behaviour from the turret class but over writes the shooting functionality with a laser instead of bullets |
| MN | 17/01/2021 | 3d asset | The object which is attacked by enemies within the game |
| LT | 17/01/2021 | Added textures to the first level | The first level model had only white/grey faces I added metal textures to the first level |
| LT | 17/01/2021 | Updated Turret System | Money is now required to place turrets |
| LT | 17/01/2021 | Updated Level one | Designed and added lighting to the first level |
| LT | 18/01/2021 | Created level two | Designed, modelled, and texture a second 3D level in SketchUp |
| JC | 19/01/2021 | Edited Enemy Health | Added audio for when someone dies |
| JC | 19/01/2021 | Edited shoot class | Added audio for the gun |
| JC | 19/01/2021 | Edited Turret class | Added audio for the turret shooting |
| JC | 19/01/2021 | Edited Turret laser class | Added audio for the laser turret |
| LT | 19/01/2021 | Imported level two into the game | Ensured the level is compatible with our game, added zones for the turret, added enemy spawning to level two |
| AA | 20/01/2021 | Character animations (running, jumping) | Implemented character animations - running in all directions, jumping (PlayerAnimController, animationController.cs) |
| LT | 20/01/2021 | Updated enemy manager | Changed this class from being hardcoded to modular in terms of storing enemies |
| JC | 22/01/2021 | Edited player stats | Added audio for player damage and added function to end the game if health falls below 0 |
| JC | 22/01/2021 | Game over screen | Created game over screen and linked it to certain events |
| JC | 22/01/2021 | Created GameManager script | This provides functionality for the level select menu |
| JC | 22/01/2021 | Created AudioSettings script | This provides functionality for the Audio settings |
| AA | 23/01/2021 | Weapon rotation | Implemented weapon rotation on y axis depending on player's aiming position (part of Shoot.cs) |
| AA | 26/01/2021 | Shooting effects | Implemented weapon shooting effects using particle effects package (RaycastWeapon.cs, CrossHairTarget.cs) |
| LT | 26/01/2021 | Commented all classes | I commented and explained all of my classes and added author tags to all classes in the project |
| JC | 27/01/2021 | Edited mouse input | Added something to disable the not enough money popup on round start |
| JC | 27/01/2021 | Edited pointToDefend class | Added function to end the game if the point runs out of health |
| JC | 27/01/2021 | Edited SelectTurretUI class | Added a function to enable the not enough money popup |
| AA | 29/01/2021 | Character skill | Implemented a skill that allows player to be immortal for 4 seconds, the skill has 10 seconds cooldown |