Developer Diary

GitHub: <https://github.com/Uzzy97/Top-Gun/>

**Game:** Top Gun

**Purpose:** A plane (player) is on the left-hand side of the screen moving through the game with enemy planes (enemy) and obstacles (walls). The aim of the game is to avoid any obstacles while shooting any enemy planes that come into screen. Enemy planes can shoot so enemy fire will have to be avoided. The player does start off with three lives.

Unity2D shooter game where Player plane is controlled by the user and enemy plane is controlled by the computer with a brain of its own.

* Bullet Points – Indicating the problems which I have encountered during the development.
* References for solutions provided on last page of the developer’s diary.

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| One Hit | Date | Events |
| Assets | Oct 21, 2019 | Players and Enemies assets were created by the game designer. I as the developer implemented them into the game and provided functionality by writing scripts. |
| Repository Created | Oct 22, 2019 | GitHub Created – First Commit of Players and Enemies. GitHub repository allows us to keep track of work and knowledge of commits and the developer worked on. |
| C# Scripts | Oct 23 – Nov 10  2019 | During this time frame, I was creating various scripts for player, enemy, bullets, game boundary. |
| * Damian’s mobile application labs really helped starting off this game including creating sprites, scripts, prefabs, scenes. * Going to weekly labs helped me integrate lab work into my projects such as sounds, spawns, enemies, shooting bullets and movement. | | |
| Game Menu | Nov 11, 2019 | Game menu created.   1. User can click on play – level 1 2. User can click on difficulties and choose their own level from level 1 – level 3. 3. User can click on sound and adjust the volume. 4. Back button created for each sub menu which allow user to come back to main menu. |
| Sound | Nov 11, 2019 | Damian’s labs helped me input background sound to the game. I made my own sound, so there are no copyright issues relating to the sound. Below is the link that I used to create my own music:  <https://beepbox.co/> |
| Kill Function - Enemy | Nov 12, 2019 | Enemy can now kill player. As a test, we put the player live to three. Enemy shoots three times at player. Player dies and death effect is created within the game. |
| * With the enemy I encountered a few problems * Firstly, the enemy was shooting itself – bullet was hitting of the box collider and hitting itself and then dying. I solved this problem by changing gravity and changing the Body Type to Kinematic in the Rigidbody2D. * Secondly, in level 2 – there are several enemies. All the enemies were shooting at the same time, the bullets were hitting each other and destroying each other’s bullets before it even hit the player. I learned that I just had to adjust the speed and time of each enemy, so they all shoot at timely space. | | |
| Kill Function - Player | Nov 13, 2019 | Player is now enabled to kill enemy. For testing purposes, we equal enemy’s live to five. Player shoots five times in order to eliminate the enemy. Enemy is eliminated and death effect is formed. |
| * During this time, I had difficulties in shooting the enemy. Player was shooting but it was always going through the enemy. After days, I learned that I need some sort of a collider like a 2D Box Collider. | | |
| Level 1 Complete | Nov 24, 2019 | Check Point – Level 1 Completed. In level 1 player and enemy can shoot each other. Player can move only move up and down to dodge bullets from enemy, but enemy has no movement. |
| Level 2 Started | Nov 25, 2019 | In Level 2 – There are multiple enemies in different locations shooting at the player, player can dodge the bullets with movement. Enemies can’t move. |
| Enemy Movement | Nov 27, 2019 | Enemy shoots in the same direction of the player. If player decides to move, enemy shoots in that direction. |
| * Encountered problems when trying to direct bullets in same direction of player movement. * Enemies kept duplicating bullets and storing them * Speed was set too high of player | | |
| Level 2 Complete | Dec 02, 2019 | Check Point – Level 2 Completed. In level 2, player has movement. Player and enemy can shoot each other. Enemy bullets move in the same direction with the player, which makes it harder for the player and more intense. There are multiple enemies in level two. |
| Level 3 Started | Dec 03, 2019 | In Level 3, I plan to have 2 enemies against 1 player, both the player and enemies will be enabled for movement. The two enemies are set up with a three-way point movement, when playing the game you will understand of that I mean. |
| Multiple Enemies | Dec 04, 2019 | Since we have prefabs created, it is easy to duplicate them like enemies. In level 3 we have two enemies shooting one player. |
| Enemy Movement | Dec 05, 2019 | Correction of movement of enemy, created 3-way points, where enemy goes from point A to point B to point C and back to point A. |
| * I had problems with enemies in level three. Getting the movement and speed right was hard. Also, the time between shot had to be times accurately. * Bullet were always a problem in every level, kept duplicating and storing but not actually shooting at the player. But with the help of YouTube tutorials and Damian’s labs, I got to solve the issues. References are provided below. | | |
| Score Board | Dec 10, 2019 | For each enemy killed, player will gain 10 points. In level one player can get max of ten points, level 2 – max of 40 points and in level 3, a max of 20 points.  To help me integrate the scoreboard into the game, the following link helped me:  <https://www.youtube.com/watch?v=SOmBhbVz5yQ> |
| Death Effect | Dec 10, 2019 | In all the levels, once player or enemies are killed – there are sparkles to show they are killed |
| Pause Menu | Dec 10, 2019 | At any time of the game, user can press the esc button on the laptop to pause the game and esc button again to resume. When player presses “esc” button on the pc or laptop, within the pause menu the player can:   * Mute the volume and continue playing mute or unmute to play with sound. * Resume back the game. * Can click menu to go back to the menu. |
| Top Gun Completed | Dec 12, 2019 | User can now fully play the game from entering the game menu by pressing play or choosing their own level from clicking difficulty. |
| Test Cases Designed for Top Gun | Dec 12, 2019 | Test cases can be viewed in the excel sheet provided alongside this developer’s diary. Within the test cases, I have provided all the necessary tests that were carried out. |
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## Agendas

Meeting 1:

During our first meeting, we discussed what assets to develop and how to implement it in the game. Mark made three assets which included one player, one enemy, and wall. I could replicate them and use them assets as many times as required. Mark was very flexible, and we came to agreement on similar outcomes.

Meeting 2:

Our second meeting took place in Damian’s lecture when we had to show our prototype of the game. For my prototype I had level one completed with sound and both player and enemy shooting working. Mark suggested me a few changes which I took on board and which I will implement in the game for our next meeting.

Meeting 3:

I re-structured level one and implemented the changes that both designer and developer agreed on. I integrated a score board within the game and death effects. It made a huge change with simple changes. For this meeting, I also had level 2 ready to present to mark. In level 2 we had decided to create multiple enemies within no movement but just shooting.

Meeting 4:

For the final level of top-gun we decided to create two enemies with way points. The two enemies are enabled to move to various positions which makes the player harder to shoot. Also, during our meeting, we decided to not put walls in level two and level three because it was interfering with our scripts and scenes.

## Player Controls:

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| Space / Mouse Click | Shoot |
| Arrows – Up & Down | Movement |
| Esc Button | Pause |

# References:

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| Shooting | <https://www.youtube.com/watch?v=wkKsl1Mfp5M&t=191s> |
| Solving Menu Issue | <https://www.youtube.com/watch?v=zc8ac_qUXQY&t=306s> |
| Enemy Movement | <https://www.youtube.com/watch?v=3hdx_uNwY2A> |
| General Unity | <https://docs.unity3d.com/Manual/Unity2D.html> |
| Adjusting Volume in Slider | <https://www.youtube.com/watch?v=QZDw8ycoLRw> |
| Mute/Unmute | <https://www.youtube.com/watch?v=TYMkftZGBGc> |
| Brackeys YouTube Channel | <https://www.youtube.com/channel/UCYbK_tjZ2OrIZFBvU6CCMiA> |