

Welcome to your midterm, pilot! In which you will have to take down all enemies facing you in order to get at least a C. Press 1 to start the game. You will be asked if you want to attend a "review session(tutorial)" and if you answer "1" you will go through the tutorial, in which you will be taught how to use your active items: press space to activate, press x to change from one active item to another and press z to check your active item ammo, and the different enemies you will encounter. If you answer anything else, you will choose your difficulty and go into your "midterm".

You will encounter 4 "problems" (not the 10-15 I promised, but I did a lot more to make the enemies "smart"), in which the first three will feature increasing amount of enemy planes, from 1 to 3. Your job is to dodge their attacks and take them down before they do the same to you. You will see health bars to indicate how much health you/your enemy have left. After each take down, you will receive an active item or a heal for reward—that is, if you are fast enough to catch it.

Your last "problem" will be the boss, who has much more health and shoots bullets much more frequently than previous enemies. He will periodically become arrogant and drop an item as a "treat", but he will also call out other enemies to fight you.

My main variables:

Difficulty: this is arguably the most important variable of all, since it affects a large part of the game. For example, as the difficulty gets higher, the enemies will be aiming their bullets more accurately at you. Their bullets will also deal more damage, have bigger size and travel faster. More importantly, the enemies become "smarter", responding to your moves more efficiently.

The stats: your stats, your original stat, enemy stats, enemy original stat, boss health. These include of the health, attack speed, move speed, attack damage, accuracy, upgrades, power ups and bullet size of you or your enemy. The original stat blocks are used for cases when I need the changed stats (such as from disarm, slow and upgrades) or when I draw health bar. Unfortunately I did not have time to make a stats block for the boss.

Are you shielded/Is enemy shielded. Boolean variables that determine if you or your enemy are shielded and will modify your/your enemy's damage accordingly (at least in most cases as you will see later).

Important local variables:

a, b: these appear a bunch inside my self-made blocks, because I set them to the global lists (your stats, enemy stats etc.) in order to change them inside the blocks.

My 2 features:

1. Power ups and upgrades: These can be combined to one since both are

mostly modifying the plane's stats. You have 4 types of power ups: shield, power attack, nuke and heal.

Shield as the name indicates will make you "shielded" and mitigate the damage dealt to you (UNLESS...find out later).

Power attack will empower your bullets, making them larger in size and hurt even more.

Nuke will briefly disable your actual attack and charge up a massive missile: press C to launch the missile and ELIMINATE your enemy.

Heal is the simplest (both algorithm wise and understanding wise), as you recover health.

However, not only nuke, but also every power up requires a charge up time of 8 seconds, a perfect amount of time for the enemy to strategize against them.

As for the upgrades, it's much simpler. You get greatly increased stats in one of your chosen areas: attack, speed or health (referred to as durability in game). During the game, you can press A, S, D to switch between upgrades: A for attack, S for speed and D for durability. Nice and simple, isn't it! Be wary though, if you switch from one upgrade to another, you will lose the previous upgrade. Also, you cannot switch your upgrade if you are disarmed or slowed.

2. Smart enemies: As you might already be able to imply, there is something special about your enemies. In many other shooting games, when you use your power ups or upgrades, the enemy can do nothing but sit and wait for his doom. Not YOUR enemies. For every key you press, the enemy packs something as response (which makes the game a bit slow by the way). No matter where you go, the enemy bullet will be hitting close to home, and even closer as difficulty gets higher. What's more, when you use your power up or your upgrade, oh you better expect the enemy to be ready for it (not in easy mode though, because it's EASY mode.). For every power up you choose, the enemy packs a way to mitigate or even nullify the benefits: if you try and put a shield on yourself, the enemy will pull out his artillery troops to launch missiles that penetrate the shield; if you start power attacking, the enemy will just put on his own shield, simple and easy; what about nuke, that thing will one-shot an enemy...unless he maximizes his chance to dodge it by becoming smaller in size and faster in speed; as for your heal, beware of the vampire who loves stealing fresh health from his victims.

The enemy also has a specialized weapon to go against all the upgrades you have. The weapon, although much slower than the bullets, will lower your attack (disarm) or speed (slow) when you choose these upgrades, and will deal damage according to your maximum health if you choose durability.

Thankfully, your enemies are arrogant enough to release his strategy beforehand, so you could have some time to prepare for it (only

mentally though). But just like you, the enemy needs time to strategize against you, although the time becomes shorter and shorter as difficulty goes up. Similarly, as I mentioned, the specialized weapon has a recharge time that will go down according to difficulty.

How to start your "midterm"/"review session" as a pilot:

Press 1 to start, as my (ugly) screen indicates. Answer 1 for tutorial and anything else for the game. Then you should choose your upgrade by answering 1 for durability, 2 for attack and 3 for speed. During the game, use arrow keys to control your plane, ASD to switch between upgrades and V to confirm the switch, Z to check your ammo of power ups, X to switch between power ups/cancel upgrade switch, C to fire your nuke when you have it, and Space to use your power ups. Dodge the enemy bullets (which will become faster, more deadly and larger according to difficulty) and take them down before they do the same to you!

What I could have done better:

I overestimated my ability to work, making me not able to have time to do anything about the boss. As you might see, the boss' movement blocks and bullet blocks are disappointingly simple compared to his actual "troops". The only up side about him are the conversations he has with "you", which is just made to increase the humor level.

Also, due to the large amount of things happening at the same time, my game is incredibly slow at times. This means that especially for your upgrades, you might have to press V twice to make the enemy and you react to the change.