**Codename: Shifter**

**Overview**

The game is a platformer, kind of like Mario, in a 3D space. Your goal is to move around the platforms, normal platforms and one platform that is slippery which will cause the player to slide in the wrong direction or in a direction which you began, and you try to use force to go the opposite direction of the desired way. You can utilize double jumping with a hover to take advantage of certain situations with AI or with hard-to-reach platforms. Avoid AI who patrol certain platforms and will chase after you, try to avoid the patrolling the AI who have pre-determined way points or go head on with the AI and kill them by jumping on them. The goal is to reach the end and touch the flag to win and finish the game.

**Production timeline:**

Week 1:

Task 1: Double jump / Hovering  
 Implement code for double jumping and hovering mechanics

Time Estimate: 1 hours

Task 2: AI patrolling  
 Implement code for AI to patrol around certain nodes or paths laid out

Time Estimate: 2 hours

Week 2:

Task 1: Create slippery platform which will cause the player to continue to slide in the direction them walk in for a short while before changing.

Time Estimate: 1 hour

Task 2: Create a state machine, with 2 states for the AI, Patrol, and chase states.

Using a patrolling algorithm with pre-determined locations for the AI to move to.

Time Estimate: 1 hours

Task 3: AI chasing and damaging the player on contact, losing health with some UI

Time Estimate: 1 hour

Week 3:

Task 1: Create a checkpoint system where if the player falls, he will spawn back to a checkpoint and not at the start of the level.

Time Estimate: 2 Hours

Task 2: Create an Algorithm for another set of AI using A\*

Time Estimate: 3 hours

Task 3: Create the flag, or object to touch to win the level, once touching the object, go to new scene saying you win and end the game.

Time Estimate: 30 mins

**Gameplay Mechanics**

AI

1. AI Patrolling algorithm and state Machines – Varant Titizian
2. AI – A\* Algorithm and implementation – Varant Titizian
3. AI – Exploding and chasing states

Physics

1. Slippery Platform – Varant Titizian
2. Double jumping & hovering – Varant Titizian

**AI Behaviors**

The AI behaviors that will be implemented will be using the Ai patrolling algorithm that have pre-determined locations. This is the path the AI will follow, each different each AI on the platforms and style of the platform. They will begin to chase the player once within range, using a state machine and deal damage when they come into contact with the player model.

The A \* implementation will be the same with the patrolling AI, in terms of pathing. They will have different states, and Idle, Chase, and explode state. Exploding state will immediate take away 1 life and reset the play to a checkpoint. There will be a timer of 3-4 seconds before the enemy explodes, flashing to indicate its going to blow, then do damage in a radius.

**Physics**

For Physics ill be using different type of platforms, mainly the slippery one, which will cause the player to slide across the platform, making the movement a lot harder to control and dealing with the AI at the same time. A second platform that you wont be able to jump through.

Secondly I want to implement a double jump and hover mechanics for platforms that are more out of reach, this and dealing with the AI that will try to explode, maybe create a buffer where the player can jump over the radius of damage if timed correctly.