**Tank War basic Functions and Properties:**

1. **Main functions**

|  |  |
| --- | --- |
| **Function** | **Description** |
| Sign in | Sau khi user click vào sign in, system sẽ tự cân đối lượng player của 2 team để assign user sao cho cân bằng. User đầu tiên thì sẽ hiện connecting cho đến khi có thêm ng thứ 2 vào |
| Movement | Thân tank di chuyển = keyboard: tiến (W), lùi(S), rotate ngc chiều kim đồng hồ(A), rotate theo chiều kim đh(D) |
| Aim | Nòng di chuyển theo mouse. Vector của nòng = vector từ trục nòng đến vị trí của chuột  Tâm ngắm thay thế chuột |
| Shoot | - Click to shoot one projectile to the above Aim position  - Press mouse to shoot continuously  \* The projectile will move forward (even farther than the Aim position, the traveling distance is unchanged) unless it hits an Obstacle |
| Ăn bonus | Thêm skill/bonus cho player (tùy loại bonus). Bonus sẽ kéo dài trong 1 tgian giới hạn( ex: 20s) |
| Death | Each actor has a health status. The actor will die when health status = 0  Each time an actor is hit by another, health status -= 5%; |
| Damage | Storing damage value of the current Actor |
| Spawn Location | Randomly spawn this Actor within the current Map |
| Conquer an area | Change the area flag color when a team conquers it. A team wins when they conquer all the flags or all their enemies die at a certain time. |
| Respawn | An actor will respawn 5s after previous death. |
| Victory | Thêm animation kiểu bắn pháo hoa tung tóe, etc. |

1. **Properties Definition (used for all objects):**

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| --- | --- | --- |
| **Function** | **Data Type** | **Description** |
| Speed | int | Control the current speed of the Object |
| Range | int | The maximum distance the projectile can travel (which is also the maximum radius of a circle having the Player’s tank as the center) |
| Health | float | Control the current alive status of the Object, the Object is destroyed if this value is set to 0 |
| Damage | float | Storing damage value of the current Object |
| Spawn Location | ??? | Randomly spawn this Object within the current Map |
| Collision Size | int | Define the size of the Object |
| Living Duration | int | Define the duration that the Object can live within Map |
| Spawn Delay | int | Define the duration delay that the Object can spawn |
| Current Coordinate | [To be decided] | Store the current position (x,y) of the Object |
| Display Animation | Texture2d | The display animation of this Object |
| Skill Set | List<Skill> | Each time the Player “eat” the bonus crate, the bonus is automatically added to the Player’s skill set |
| Is Blocker | bool | - Define if the Object can have impact with others Objects  - Note that only 2 Objects with both having “IsBlocker” = true, can impact each other |
| Type of Tank | Enum | - Store enum of types  - For example: Heavy, Light, Medium |
| List of bonuses | List<Bonus> | - Store the current active bonus  - For example, a Player uses a skill that grants him bonus to speed. This list will then add the bonus, and control the duration of the bonus.  - The duration of the bonus can be controlled by using thread, start the thread and then stop it when the duration is over. After that, remove the bonus from the Player’s list of bonuses |

1. **Player:**
2. **Obstacle:**
3. **Skill Crate:**
4. **Projectile:**
5. **Aircraft:**
6. **Sub objects:**

**\*NOTE:**

* **GRANT\_BONUS:**  Initialize Bonus object
* **EQUIPMENT:** Initialize equipment object