





## Diagrama Civilizations

Este diagrama muestra el funcionamiento del juego, contando con las clases de Civilization, Battle, AttackUnit (hijos: Cannon, Crossbow, Spearman, Swordsman), DefenseUnit (hijos: RocketLauncherTower, Catapult, ArrowTower), SpecialUnit (hijos: Priest, Magician) y con las Interfaces de Variables y MilitaryUnit.

Nuestro juego cuenta con más clases, pero para entender el funcionamiento del juego hemos seleccionado las necesarias para su comprensión. También hemos agrupado ciertas variables y funciones similares ya que había demasiadas y de esta forma es más comprensible.

## Clase Civilization

Para abreviar en esta clase se muestra un atributo que agrupa varios y que explico a continuación:

- **technology**

1. int technologyDefense
2. int technologyAttack

- **resources**

1. int wood
2. int iron
3. int food
4. int mana

- **buildings**

1. int magicTower
2. int church
3. int farm
4. int smithy
5. int carpentry

- **battles**

1. int battles
2. ArrayList<MilitaryUnit> army (Lista de 9 listas)

- **newBuilding()**

1. void newChurch()
2. void newMagicTower()
3. void newFarm()
4. void newCarpentry()
5. void new Smithy()

- **upgradeTechnology()**

1. void upgradeTechnologyDefense()
2. void upgradeTechnologyAttack()

- **newUnit()**

1. void newSwordsman(int n)
2. void newSpearman(int n)
3. void newCrossbow(int n)
4. void newCannon(int n)
5. void newArrowTower(int n)
6. void newCatapult(int n)
7. void newRocketLauncher(int n)
8. void newMagician(int n)
9. void newPriest(int n)

- **printStats()**

1. Sin cambios

## Interfaz Variables

Esta interfaz contiene demasiadas variables para ser mostradas en un diagrama, por lo cual abreviamos muchas de ellas y las agrupamos en términos más generales.

### **BASE\_ENEMY\_ARMY**

```
public final int IRON_BASE_ENEMY_ARMY
public final int WOOD_BASE_ENEMY_ARMY
public final int FOOD_BASE_ENEMY_ARMY
public final int ENEMY_FLEET_INCREASE
```

### **CIVILIZATION\_FOOD\_GENERATED**

```
public final int CIVILIZATION_IRON_GENERATED
public final int CIVILIZATION_WOOD_GENERATED
public final int CIVILIZATION_FOOD_GENERATED
public final int CIVILIZATION_IRON_GENERATED_PER_SMITHY
public final int CIVILIZATION_WOOD_GENERATED_PER_CARPENTRY
public final int CIVILIZATION_FOOD_GENERATED_PER_FARM
public final int CIVILIZATION_MANA_GENERATED_PER_MAGIC_TOWER
```

### **UPGRADE\_TECHNOLOGY\_COST**

```
public final int UPGRADE_BASE_DEFENSE_TECHNOLOGY_IRON_COST
public final int UPGRADE_BASE_ATTACK_TECHNOLOGY_IRON_COST
public final int UPGRADE_PLUS_DEFENSE_TECHNOLOGY_IRON_COST
public final int UPGRADE_PLUS_ATTACK_TECHNOLOGY_IRON_COST
public final int UPGRADE_BASE_DEFENSE_TECHNOLOGY_WOOD_COST
public final int UPGRADE_BASE_ATTACK_TECHNOLOGY_WOOD_COST
public final int UPGRADE_PLUS_DEFENSE_TECHNOLOGY_WOOD_COST
public final int UPGRADE_PLUS_ATTACK_TECHNOLOGY_WOOD_COST
```

### **UNIT\_COST**

```
public final int FOOD_COST_SWORDSMAN
public final int FOOD_COST_SPEARMAN
public final int FOOD_COST_CROSSBOW
public final int FOOD_COST_CANNON
public final int WOOD_COST_SWORDSMAN
```

```
public final int WOOD_COST_SPEARMAN  
public final int WOOD_COST_CROSSBOW  
public final int WOOD_COST_CANNON  
public final int IRON_COST_SWORDSMAN  
public final int IRON_COST_SPEARMAN  
public final int IRON_COST_CROSSBOW  
public final int IRON_COST_CANNON  
public final int MANA_COST_SWORDSMAN  
public final int MANA_COST_SPEARMAN  
public final int MANA_COST_CROSSBOW  
public final int MANA_COST_CANNON
```

```
public final int IRON_COST_ARROWTOWER  
public final int IRON_COST_CATAPULT  
public final int IRON_COST_ROCKETLAUNCHERTOWER  
public final int WOOD_COST_ARROWTOWER  
public final int WOOD_COST_CATAPULT  
public final int WOOD_COST_ROCKETLAUNCHERTOWER  
public final int FOOD_COST_ARROWTOWER  
public final int FOOD_COST_CATAPULT  
public final int FOOD_COST_ROCKETLAUNCHERTOWER  
public final int MANA_COST_ARROWTOWER  
public final int MANA_COST_CATAPULT  
public final int MANA_COST_ROCKETLAUNCHERTOWER
```

```
public final int FOOD_COST_MAGICIAN  
public final int FOOD_COST_PRIEST  
public final int WOOD_COST_MAGICIAN  
public final int WOOD_COST_PRIEST  
public final int IRON_COST_MAGICIAN  
public final int IRON_COST_PRIEST  
public final int MANA_COST_MAGICIAN  
public final int MANA_COST_PRIEST
```

```
public final int WOOD_COST_UNITS  
public final int IRON_COST_UNITS  
public final int FOOD_COST_UNITS
```

## **BUILDING\_COST**

```
public final int FOOD_COST_FARM
public final int WOOD_COST_FARM
public final int IRON_COST_FARM
public final int FOOD_COST_CARPENTRY
public final int WOOD_COST_CARPENTRY
public final int IRON_COST_CARPENTRY
public final int FOOD_COST_SMITHY
public final int WOOD_COST_SMITHY
public final int IRON_COST_SMITHY
public final int FOOD_COST_CHURCH
public final int WOOD_COST_CHURCH
public final int IRON_COST_CHURCH
public final int FOOD_COST_MAGICTOWER
public final int WOOD_COST_MAGICTOWER
public final int IRON_COST_MAGICTOWER
```

## **BASE\_DAMAGE**

```
public final int BASE_DAMAGE_SWORDSMAN
public final int BASE_DAMAGE_SPEARMAN
public final int BASE_DAMAGE_CROSSBOW
public final int BASE_DAMAGE_CANNON

public final int BASE_DAMAGE_ARROWTOWER
public final int BASE_DAMAGE_CATAPULT
public final int BASE_DAMAGE_ROCKETLAUNCHERTOWER
public final int BASE_DAMAGE_MAGICIAN
```

## **UNIT\_ARMOR**

```
public final int ARMOR_SWORDSMAN
public final int ARMOR_SPEARMAN
public final int ARMOR_CROSSBOW
public final int ARMOR_CANNON

public final int ARMOR_ARROWTOWER
public final int ARMOR_CATAPULT
public final int ARMOR_ROCKETLAUNCHERTOWER
```

## **ARMOR\_INCREASE**

```
public final int PLUS_ARMOR_SWORDSMAN_BY_TECHNOLOGY
public final int PLUS_ARMOR_SPEARMAN_BY_TECHNOLOGY
public final int PLUS_ARMOR_CROSSBOW_BY_TECHNOLOGY
public final int PLUS_ARMOR_CANNON_BY_TECHNOLOGY

public final int PLUS_ARMOR_ARROWTOWER_BY_TECHNOLOGY
public final int PLUS_ARMOR_CATAPULT_BY_TECHNOLOGY
public final int
PLUS_ARMOR_ROCKETLAUNCHERTOWER_BY_TECHNOLOGY
```

## **DAMAGE\_INCREASE**

```
public final int PLUS_ATTACK_SWORDSMAN_BY_TECHNOLOGY
public final int PLUS_ATTACK_SPEARMAN_BY_TECHNOLOGY
public final int PLUS_ATTACK_CROSSBOW_BY_TECHNOLOGY
public final int PLUS_ATTACK_CANNON_BY_TECHNOLOGY

public final int PLUS_ATTACK_ARROWTOWER_BY_TECHNOLOGY
public final int PLUS_ATTACK_CATAPULT_BY_TECHNOLOGY
public final int
PLUS_ATTACK_ROCKETLAUNCHERTOWER_BY_TECHNOLOGY
public final int PLUS_ATTACK_MAGICIAN_BY_TECHNOLOGY
public final int PLUS_ARMOR_UNIT_PER_EXPERIENCE_POINT
public final int PLUS_ATTACK_UNIT_PER_EXPERIENCE_POINT
```

## **SANCTIFIED\_INCREASE**

```
public final int PLUS_ARMOR_UNIT_SANCTIFIED
public final int PLUS_ATTACK_UNIT_SANCTIFIED
public final int CHANCE_MAGICIAN_RESSURECT
```

## **WASTE\_CHANCE**

```
public final int CHANCE_GENERATNG_WASTE_SWORDSMAN
public final int CHANCE_GENERATNG_WASTE_SPEARMAN
public final int CHANCE_GENERATNG_WASTE_CROSSBOW
public final int CHANCE_GENERATNG_WASTE_CANNON
```



```
public final int CHANCE_GENERATNG_WASTE_ARROWTOWER
public final int CHANCE_GENERATNG_WASTE_CATAPULT
public final int
CHANCE_GENERATNG_WASTE_ROCKETLAUNCHERTOWER
```

```
public final int CHANCE_GENERATNG_WASTE_PRIEST
public final int CHANCE_GENERATNG_WASTE_MAGICIAN
```

## **ATTACK\_AGAIN**

```
public final int CHANCE_ATTACK_AGAIN_SWORDSMAN
public final int CHANCE_ATTACK_AGAIN_SPEARMAN
public final int CHANCE_ATTACK_AGAIN_CROSSBOW
public final int CHANCE_ATTACK_AGAIN_CANNON
```

```
public final int CHANCE_ATTACK_AGAIN_ARROWTOWER
public final int CHANCE_ATTACK_AGAIN_CATAPULT
public final int CHANCE_ATTACK_AGAIN_ROCKETLAUNCHERTOWER
```

```
public final int CHANCE_ATTACK_AGAIN_MAGICIAN
public final int CHANCE_ATTACK_AGAIN_PRIEST
```

## **CHANCE\_ATTACK**

```
public final int CHANCE_ATTACK_CIVILIZATION_UNITS
public final int CHANCE_ATTACK_ENEMY_UNITS
public final int PERCENTATGE_WASTE
```

## Clase Battle

Esta clase es bastante compleja y extensa, por lo cual habrá ciertas variables que se agruparan para representarlo de forma más resumida en el diagrama UML.

### **ArrayList armies**

- ArrayList<MilitaryUnit> civilizationArmy
- ArrayList<MilitaryUnit> enemyArmy
- ArrayList armies

### **StringBuilder battleDevelopment**

#### **int initialNumbers**

- int initialCostFleet
- int initialNumberUnitsCivilization
- int initialNumberUnitsEnemy
- int initialArmies

#### **int drops**

- int wasteWoodIron
- int enemyDrops
- int civilizationDrops
- int resourcesLooses

#### **int actualNumberUnits**

- int actualNumberUnitsCivilization
- int actualNumberUnitsEnemy

#### **getBattleInfo()**

- String getBattleReport()
- String getBattleDevelopment()

#### **generateBattleInfo()**

- void initInitialArmies()
- void updateResourcesLooses()
- fleetResourceCost()
- initialFleetNumber()
- int reminderPercentageFleet()

## **getUtilities()**

int getGroupDefender()

int getCivilizationGroupAttacker()

int getEnemyGroupAttacker()

void resetArmyArmor()

## **Restricciones textuales:**

- AttackUnit, DefenseUnit y SpecialUnit implementan las interfaces "Variables" y "MilitaryUnit".
- La clase Civilization implementa la interfaz Variables.
- Todas las clases pueden interactuar con la interfaz MilitaryUnit.
- Las funciones o variables que no se especifica si son públicas o privadas, se deben a que en el código no se especifican expresamente o son agrupaciones anteriormente mencionadas.
- Las clases hijas de los tipos de unidades como por ej. AttackUnit, no muestran en el diagrama ninguna funcion ni variable, ya que implementan las funciones de MilitaryUnit y las variables (utilizando constructores) de su respectiva clase padre.
- Los métodos que utilizan las clases de tipos de unidades como por ej. AttackUnit, no se muestran ya que las implementan de la interfaz MilitaryUnit.