Grupo 4 | M01

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PROYECTO

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# Herramientas de Desarrollo

## Eclipse/IntelliJ

Estos dos programas son IDEs para el desarrollo de aplicaciones con Java, un lenguaje de programación orientado a objetos, con los que daremos forma a lo que se nos ha pedido en este proyecto en forma de programa ejecutable.

## SqlDeveloper

Con este programa crearemos y gestionaremos la base de datos del proyecto, que ira relacionada con el programa ya que este deberá coger los datos de la base de datos para su funcionamiento.

## GitHub Desktop

Finalmente, este programa será usado para llevar la gestión de los archivos del proyecto en si, ya que en nuestro repositorio del proyecto se irán subiendo los archivos que vayamos creando y finalizando para tener constancia de lo que llevamos del proyecto.

Una vez terminado el proyecto se subirá todos los archivos finales al GitHub donde se hará una “release” del programa final.

# M02

## Scripts

### DROP\_TABLE

### CREATE\_TABLE

### INSERT\_DATA

### INITIALIZE

### GET\_DEFENSE & GET\_SHIP

# M03

## Clases

### Planet

### MissileLauncher

### IonCannon

### PlasmaCannon

### BattleShip

|  |  |
| --- | --- |
| 1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30  31  32  33  34  35  36  37  38  39  40  41  42  43  44  45  46  47  48  49  50  51  52  53  54  55  56  57  58  59  60  61  62  63 | **public** **class** **BattleShip** **extends** Ship{    BattleShip(**int** armor, **int** baseDamage) {  **super**();  **this**.setArmor(armor);  **this**.setBaseDamage(baseDamage);  }    BattleShip(){  **super**();    //ESTABLECER EL VALOR DE ARMOR  **if** (**this**.getArmor() == **this**.ARMOR\_BATTLESHIP) {  **this**.getArmor() = **this**.ARMOR\_BATTLESHIP;  }**else** {  **this**.getArmor() = **this**.ARMOR\_BATTLESHIP + (Planet.getTechnologyDefense() \* **this**.PLUS\_ARMOR\_BATTLESHIP\_BY\_TECHNOLOGY) \* **10**  }    //ESTABLECER EL VALOR DE BASEDAMAGE  **if** (**this**.getBaseDamage() == **this**.BASE\_DAMAGE\_BATTLESHIP) {  **this**.getBaseDamage() = **this**.BASE\_DAMAGE\_BATTLESHIP;  }**else** {  **this**.getBaseDamage() = **this**.BASE\_DAMAGE\_BATTLESHIP + (Planet.getTechnologyAttack() \* **this**.PLUS\_ATTACK\_BATTLESHIP\_BY\_TECHNOLOGY) \* **10**  }  }      **public** **int** **attack**() {  **return** **this**.getBaseDamage();  }    **public** **void** **takeDamage**(**int** receivedDamage) {  **this**.setArmor(armor - receivedDamage);  }    **public** **int** **getActualArmor**() {  **return** **this**.getArmor();  }    **public** **int** **getMetalCost**() {  **return** **3000**;  }    **public** **int** **getDeuteriumCost**() {  **return** **50**;  }    **public** **int** **getChanceGeneratinWaste**() {  **return** **45**;  }    **public** **int** **getChanceAttackAgain**() {  **return** **3**;  }    **public** **void** **resetArmor**() {  armor = **this**.ARMOR\_BATTLESHIP;  }    **public** **void** **initialArmorReset**() {  initialArmor = armor;  }  } |

### HeavyHunter

|  |  |
| --- | --- |
| 1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30  31  32  33  34  35  36  37  38  39  40  41  42  43  44  45  46  47  48  49  50  51  52  53  54  55  56  57  58  59  60  61  62  63 | **public** **class** **HeavyHunter** **extends** Ship{    HeavyHunter(**int** armor, **int** baseDamage) {  **super**();  **this**.setArmor(armor);  **this**.setBaseDamage(baseDamage);  }    HeavyHunter(){  **super**();    //ESTABLECER EL VALOR DE ARMOR  **if** (**this**.getArmor() == **this**.ARMOR\_HEAVYHUNTER) {  **this**.getArmor() = **this**.ARMOR\_HEAVYHUNTER;  }**else** {  **this**.getArmor() = **this**.ARMOR\_HEAVYHUNTER + (Planet.getTechnologyDefense() \* **this**.PLUS\_ARMOR\_HEAVYHUNTER\_BY\_TECHNOLOGY) \* **10**  }    //ESTABLECER EL VALOR DE BASEDAMAGE  **if** (**this**.getBaseDamage() == **this**.BASE\_DAMAGE\_HEAVYHUNTER) {  **this**.getBaseDamage() = **this**.BASE\_DAMAGE\_HEAVYHUNTER;  }**else** {  **this**.getBaseDamage() = **this**.BASE\_DAMAGE\_HEAVYHUNTER + (Planet.getTechnologyAttack() \* **this**.PLUS\_ATTACK\_HEAVYHUNTER\_BY\_TECHNOLOGY) \* **10**  }  }      **public** **int** **attack**() {  **return** **this**.getBaseDamage();  }    **public** **void** **takeDamage**(**int** receivedDamage) {  **this**.setArmor(armor - receivedDamage);  }    **public** **int** **getActualArmor**() {  **return** **this**.getArmor();  }    **public** **int** **getMetalCost**() {  **return** **3000**;  }    **public** **int** **getDeuteriumCost**() {  **return** **50**;  }    **public** **int** **getChanceGeneratinWaste**() {  **return** **45**;  }    **public** **int** **getChanceAttackAgain**() {  **return** **3**;  }    **public** **void** **resetArmor**() {  armor = **this**.ARMOR\_HEAVYHUNTER;  }    **public** **void** **initialArmorReset**() {  initialArmor = armor;  }  } |

### LightHunter

|  |  |
| --- | --- |
| 1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30  31  32  33  34  35  36  37  38  39  40  41  42  43  44  45  46  47  48  49  50  51  52  53  54  55  56  57  58  59  60  61  62  63  64  65  66  67  68  69  70  71  72  73  74  75 | **import** **ProyectoJava.Ship**;  **public** **class** **LightHunter** **extends** Ship{    **private** **int** defenseTechnology;    LightHunter(**int** armor, **int** baseDamage, **int** defenseTechnology) {  **super**();  **this**.setArmor(armor);  **this**.setBaseDamage(baseDamage);  **this**.  }    LightHunter(){  **super**();    //ESTABLECER EL VALOR DE ARMOR  **if** (**this**.getArmor() == **this**.ARMOR\_LIGTHHUNTER) {  **this**.getArmor() = **this**.ARMOR\_LIGTHHUNTER;  }**else** {  **this**.getArmor() = **this**.ARMOR\_LIGTHHUNTER + (Planet.getTechnologyDefense() \* **this**.PLUS\_ARMOR\_LIGTHHUNTER\_BY\_TECHNOLOGY) \* **10**  }    //ESTABLECER EL VALOR DE BASEDAMAGE  **if** (**this**.getBaseDamage() == **this**.BASE\_DAMAGE\_LIGTHHUNTER) {  **this**.getBaseDamage() = **this**.BASE\_DAMAGE\_LIGTHHUNTER;  }**else** {  **this**.getBaseDamage() = **this**.BASE\_DAMAGE\_LIGTHHUNTER + (Planet.getTechnologyAttack() \* **this**.PLUS\_ARMOR\_LIGTHHUNTER\_BY\_TECHNOLOGY) \* **10**  }  }    **public** **void** **setDefenseTechnology**(**int** defenseTechnology) {  **this**.defenseTechnology = defenseTechnology;  }  **public** **int** **getDefenseTechnology**() {  **return** defenseTechnology;  }      **public** **int** **attack**() {  **return** **this**.getBaseDamage();  }    **public** **void** **takeDamage**(**int** receivedDamage) {  **this**.setArmor(armor - receivedDamage);  }    **public** **int** **getActualArmor**() {  **return** **this**.getArmor();  }    **public** **int** **getMetalCost**() {  **return** **3000**;  }    **public** **int** **getDeuteriumCost**() {  **return** **50**;  }    **public** **int** **getChanceGeneratinWaste**() {  **return** **45**;  }    **public** **int** **getChanceAttackAgain**() {  **return** **3**;  }    **public** **void** **resetArmor**() {  armor = **this**.ARMOR\_LIGHTHUNTER;  }    **public** **void** **initialArmorReset**() {  initialArmor = armor;  }  } |

### ArmoredShip

### ResourceException

### Ship

|  |  |
| --- | --- |
| 1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30  31  32  33  34  35  36  37  38  39  40  41  42 | **public** **abstract** **class** **Ship** **implements** MilitaryUnit, Variables{    **int** armor;  **int** initialArmor;  **int** baseDamage;      Ship(){    }  **public** **Ship**(**int** armor, **int** initialArmor, **int** baseDamage) {  **super**();  **this**.armor = armor;  **this**.initialArmor = initialArmor;  **this**.baseDamage = baseDamage;  }  **public** **int** **getArmor**() {  **return** armor;  }  **public** **void** **setArmor**(**int** armor) {  **this**.armor = armor;  }  **public** **int** **getInitialArmor**() {  **return** initialArmor;  }  **public** **void** **setInitialArmor**(**int** initialArmor) {  **this**.initialArmor = initialArmor;  }  **public** **int** **getBaseDamage**() {  **return** baseDamage;  }  **public** **void** **setBaseDamage**(**int** baseDamage) {  **this**.baseDamage = baseDamage;  }  } |

### Defense

### Battle

## Interfaces

### MilitaryUnit

|  |  |
| --- | --- |
| 1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16  17  18 | **public** **interface** **MilitaryUnit** {  **abstract** **int** **attack**();    **abstract** **void** **takeDamage**(**int** receivedDamage);    **abstract** **int** **getActualArmor**();    **abstract** **int** **getMetalCost**();    **abstract** **int** **getDeuteriumCost**();    **abstract** **int** **getChanceGeneratinWaste**();    **abstract** **int** **getChanceAttackAgain**();    **abstract** **void** **resetArmor**();  } |

### Variables

|  |  |
| --- | --- |
| 1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  7  28  29  30  31  32  33  34  35  36  37  38  39  40  41  42  43  44  45  46  47  48  49  50  51  52  53  54  55  56  57  58  59  60  61  62  63  64  65  66  67  68  69  70  71  72  73  74  75  76  77  78  79  80  81  82  83  84  85  86  87  88  89  90  91  92  93  94  95  96  97  98  99  100  101  102  103  104  105  106  107  108  109  110  111  112  113  114  115  116  117  118  119  120  121  122  123  124 | **public** **interface** **Variables** {  // resources available to create the first enemy fleet  **public** **final** **int** DEUTERIUM\_BASE\_ENEMY\_ARMY = **26000**;  **public** **final** **int** METAL\_BASE\_ENEMY\_ARMY = **180000**;    // percentage increase of resources available to create enemy fleet  **public** **final** **int** ENEMY\_FLEET\_INCREASE = **6**;    // resources increment every minute  **public** **final** **int** PLANET\_DEUTERIUM\_GENERATED = **1500**;  **public** **final** **int** PLANET\_METAL\_GENERATED = **5000**;    // TECHNOLOGY COST  **public** **final** **int** UPGRADE\_BASE\_DEFENSE\_TECHNOLOGY\_DEUTERIUM\_COST = **2000**;  **public** **final** **int** UPGRADE\_BASE\_ATTACK\_TECHNOLOGY\_DEUTERIUM\_COST = **2000**;  **public** **final** **int** UPGRADE\_PLUS\_DEFENSE\_TECHNOLOGY\_DEUTERIUM\_COST = **60**;  **public** **final** **int** UPGRADE\_PLUS\_ATTACK\_TECHNOLOGY\_DEUTERIUM\_COST = **60**;    // COST SHIPS  **public** **final** **int** METAL\_COST\_LIGTHHUNTER = **3000**;  **public** **final** **int** METAL\_COST\_HEAVYHUNTER = **6500**;  **public** **final** **int** METAL\_COST\_BATTLESHIP = **45000**;  **public** **final** **int** METAL\_COST\_ARMOREDSHIP = **30000**;  **public** **final** **int** DEUTERIUM\_COST\_LIGTHHUNTER = **50**;  **public** **final** **int** DEUTERIUM\_COST\_HEAVYHUNTER = **50**;  **public** **final** **int** DEUTERIUM\_COST\_BATTLESHIP = **7000**;  **public** **final** **int** DEUTERIUM\_COST\_ARMOREDSHIP = **15000**;    // COST DEFENSES    **public** **final** **int** DEUTERIUM\_COST\_MISSILELAUNCHER = **0**;  **public** **final** **int** DEUTERIUM\_COST\_IONCANNON = **500**;  **public** **final** **int** DEUTERIUM\_COST\_PLASMACANNON = **5000**;  **public** **final** **int** METAL\_COST\_MISSILELAUNCHER = **2000**;  **public** **final** **int** METAL\_COST\_IONCANNON = **4000**;  **public** **final** **int** METAL\_COST\_PLASMACANNON = **50000**;    // array units costs  **public** **final** **int**[] METAL\_COST\_UNITS = {METAL\_COST\_LIGTHHUNTER,METAL\_COST\_HEAVYHUNTER,METAL\_COST\_BATTLESHIP,METAL\_COST\_ARMOREDSHIP,METAL\_COST\_MISSILELAUNCHER,METAL\_COST\_IONCANNON,METAL\_COST\_PLASMACANNON};  **public** **final** **int**[] DEUTERIUM\_COST\_UNITS = {DEUTERIUM\_COST\_LIGTHHUNTER,DEUTERIUM\_COST\_HEAVYHUNTER,DEUTERIUM\_COST\_BATTLESHIP,DEUTERIUM\_COST\_ARMOREDSHIP,DEUTERIUM\_COST\_MISSILELAUNCHER,DEUTERIUM\_COST\_IONCANNON,DEUTERIUM\_COST\_PLASMACANNON};    // BASE DAMAGE SHIPS  **public** **final** **int** BASE\_DAMAGE\_LIGTHHUNTER = **80**;  **public** **final** **int** BASE\_DAMAGE\_HEAVYHUNTER = **150**;  **public** **final** **int** BASE\_DAMAGE\_BATTLESHIP = **1000**;  **public** **final** **int** BASE\_DAMAGE\_ARMOREDSHIP = **700**;    // BASE DAMAGE DEFENSES    **public** **final** **int** BASE\_DAMAGE\_MISSILELAUNCHER = **80**;  **public** **final** **int** BASE\_DAMAGE\_IONCANNON = **250**;  **public** **final** **int** BASE\_DAMAGE\_PLASMACANNON = **2000**;    // REDUCTION\_DEFENSE  **public** **final** **int** REDUCTION\_DEFENSE\_IONCANNON = **100**;    // ARMOR SHIPS  **public** **final** **int** ARMOR\_LIGTHHUNTER = **400**;  **public** **final** **int** ARMOR\_HEAVYHUNTER = **1000**;  **public** **final** **int** ARMOR\_BATTLESHIP = **6000**;  **public** **final** **int** ARMOR\_ARMOREDSHIP = **8000**;    // ARMOR DEFENSES  **public** **final** **int** ARMOR\_MISSILELAUNCHER = **200**;  **public** **final** **int** ARMOR\_IONCANNON = **1200**;  **public** **final** **int** ARMOR\_PLASMACANNON = **7000**;    //fleet armor increase percentage per tech level  **public** **final** **int** PLUS\_ARMOR\_LIGTHHUNTER\_BY\_TECHNOLOGY = **5**;  **public** **final** **int** PLUS\_ARMOR\_HEAVYHUNTER\_BY\_TECHNOLOGY = **5**;  **public** **final** **int** PLUS\_ARMOR\_BATTLESHIP\_BY\_TECHNOLOGY = **5**;  **public** **final** **int** PLUS\_ARMOR\_ARMOREDSHIP\_BY\_TECHNOLOGY = **5**;      // defense armor increase percentage per tech level  **public** **final** **int** PLUS\_ARMOR\_MISSILELAUNCHER\_BY\_TECHNOLOGY = **5**;  **public** **final** **int** PLUS\_ARMOR\_IONCANNON\_BY\_TECHNOLOGY = **5**;  **public** **final** **int** PLUS\_ARMOR\_PLASMACANNON\_BY\_TECHNOLOGY = **5**;      // fleet attack power increase percentage per tech level  **public** **final** **int** PLUS\_ATTACK\_LIGTHHUNTER\_BY\_TECHNOLOGY = **5**;  **public** **final** **int** PLUS\_ATTACK\_HEAVYHUNTER\_BY\_TECHNOLOGY = **5**;  **public** **final** **int** PLUS\_ATTACK\_BATTLESHIP\_BY\_TECHNOLOGY = **5**;  **public** **final** **int** PLUS\_ATTACK\_ARMOREDSHIP\_BY\_TECHNOLOGY = **5**;      // Defense attack power increase percentage per tech level  **public** **final** **int** PLUS\_ATTACK\_MISSILELAUNCHER\_BY\_TECHNOLOGY = **5**;  **public** **final** **int** PLUS\_ATTACK\_IONCANNON\_BY\_TECHNOLOGY = **5**;  **public** **final** **int** PLUS\_ATTACK\_PLASMACANNON\_BY\_TECHNOLOGY = **5**;      // fleet probability of generating waste  **public** **final** **int** CHANCE\_GENERATNG\_WASTE\_LIGTHHUNTER = **55**;  **public** **final** **int** CHANCE\_GENERATNG\_WASTE\_HEAVYHUNTER = **65**;  **public** **final** **int** CHANCE\_GENERATNG\_WASTE\_BATTLESHIP = **80**;  **public** **final** **int** CHANCE\_GENERATNG\_WASTE\_ARMOREDSHIP = **90**;    // Defense probability of generating waste  **public** **final** **int** CHANCE\_GENERATNG\_WASTE\_MISSILELAUNCHER = **55**;  **public** **final** **int** CHANCE\_GENERATNG\_WASTE\_IONCANNON = **65**;  **public** **final** **int** CHANCE\_GENERATNG\_WASTE\_PLASMACANNON = **75**;    // fleet chance to attack again  **public** **final** **int** CHANCE\_ATTACK\_AGAIN\_LIGTHHUNTER = **3**;  **public** **final** **int** CHANCE\_ATTACK\_AGAIN\_HEAVYHUNTER = **7**;  **public** **final** **int** CHANCE\_ATTACK\_AGAIN\_BATTLESHIP = **45**;  **public** **final** **int** CHANCE\_ATTACK\_AGAIN\_ARMOREDSHIP = **70**;    //Defense chance to attack again  **public** **final** **int** CHANCE\_ATTACK\_AGAIN\_MISSILELAUNCHER = **5**;  **public** **final** **int** CHANCE\_ATTACK\_AGAIN\_IONCANNON = **12**;  **public** **final** **int** CHANCE\_ATTACK\_AGAIN\_PLASMACANNON = **30**;    // CHANCE ATTACK EVERY UNIT  // LIGTHHUNTER, HEAVYHUNTER, BATTLESHIP, ARMOREDSHIP, MISSILELAUNCHER,  IONCANNON, PLASMACANNON  **public** **final** **int**[] CHANCE\_ATTACK\_PLANET\_UNITS = {**5**,**10**,**15**,**40**,**5**,**10**,**15**};  // LIGTHHUNTER, HEAVYHUNTER, BATTLESHIP, ARMOREDSHIP  **public** **final** **int**[] CHANCE\_ATTACK\_ENEMY\_UNITS = {**10**,**20**,**30**,**40**};    // percentage of waste that will be generated with respect to the cost of the units  **public** **final** **int** PERCENTATGE\_WASTE = **70**;  } |
|  |  |

# M05

# Error Log

## M02

DROP\_TABLE error: No encontraba las tablas que se especificaban en el script.

Este problema lo hemos solucionado formateando correctamente el script y escribiendo exactamente los nombres de las tablas.

CREATE\_TABLE error: El nombre de una columna excede el máximo de caracteres.

Este error lo hemos solucionado cambiando el nombre de las columnas que comenzaban así: “technology\_X” a tech\_X ya que de la primera manera.

SQL error: Error marcado en la creación de la tabla “ships”.

Este error se debió a que en el momento de la creación también había una alteración de la tabla y a la hora de ejecutar la alteración de la tabla faltaba “alter” delante de “table”.

Cambios en la base de datos: Se han necesitado cambios importantes que afectaban a la estructura de la base de datos.

Debido a que lo que se pedía inicialmente en el proyecto no era viable en relación con las otras materias se han hecho un total de 5 cambios importantes que afectan a la base de datos y su estructura. (A día 11/05/2022).