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

|  |  |
| --- | --- |
| 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 | /\*01\_Drop\_Table\*/  **create** **or** **replace** **procedure** drop\_table  **as**  existe int := **0**;  **begin**  /\*ELIMINACIO BATTLES #######################################################\*/  **select** count(\*) **into** existe **from** user\_tables **where** table\_name = 'BATTLES';  **if** existe != **0** **then**  **execute** **immediate** 'drop table battles cascade constraints';  existe := **0**;  **end** **if**;  /\*ELIMINACIO PLANET\_DEFENSES ######################################################\*/  **select** count(\*) **into** existe **from** user\_tables **where** table\_name = 'PLANET\_DEFENSES';  **if** existe = **1** **then**  **execute** **immediate** 'drop table planet\_defenses cascade constraints';  existe := **0**;  **end** **if**;  /\*ELIMINACIO PLANET\_SHIPS ######################################################\*/  **select** count(\*) **into** existe **from** user\_tables **where** table\_name = 'PLANET\_SHIPS';  **if** existe = **1** **then**  **execute** **immediate** 'drop table planet\_ships cascade constraints';  existe := **0**;  **end** **if**;  /\*ELIMINACIO DEFENSES ######################################################\*/  **select** count(\*) **into** existe **from** user\_tables **where** table\_name = 'DEFENSES';  **if** existe = **1** **then**  **execute** **immediate** 'drop table defenses cascade constraints';  existe := **0**;  **end** **if**;  /\*ELIMINACIO SHIPS ########################################################\*/  **select** count(\*) **into** existe **from** user\_tables **where** table\_name = 'SHIPS';  **if** existe = **1** **then**  **execute** **immediate** 'drop table ships cascade constraints';  existe := **0**;  **end** **if**;  /\*ELIMINACIO PLANETS #######################################################\*/  **select** count(\*) **into** existe **from** user\_tables **where** table\_name = 'PLANETS';  **if** existe = **1** **then**  **execute** **immediate** 'drop table planets cascade constraints';  existe := **0**;  **end** **if**;  /\*ELIMINACIO USERS ########################################################\*/  **select** count(\*) **into** existe **from** user\_tables **where** table\_name = 'USERS';  **if** existe = **1** **then**  **execute** **immediate** 'drop table users cascade constraints';  existe := **0**;  **end** **if**;  **end**; |

### CREATE\_TABLE

|  |  |
| --- | --- |
| 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  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  125  126  127  128  129  130  131  132  133  134  135  136  137 | **create** **or** **replace** **procedure** create\_table  **as**  **begin**  /\*  INFORMACIO IMPORTANT  -Degut a la longitud maxima de caracters del nom de les columnes, els atributs  technology\_X han sigut renombrats a tech\_X.  -Degut a que 'name' i 'password' s�n paraules reservades, les columnes passen a  anomenar-se X\_name i X\_password, on X representa el tipus d'objecte al que  perany el nom o contrasenya (Ex: planet\_name).  -Username passa a anomenar-se 'user\_name' per paritat amb la nomenclatura  anterior.  -La longitud maxima de caracters dels valors de tipus varchar ha sigut  establerta en 50.  \*/  /\*GENERACIO DE TAULES ########################################################\*/  /\*TAULA BATTLES --------------------------------------------------------------\*/  **execute** **immediate** 'CREATE TABLE battles (  id\_battle NUMBER NOT NULL,  user\_start\_units VARCHAR(50) NOT NULL,  user\_end\_units VARCHAR(50) NOT NULL,  enemy\_start\_units VARCHAR(50) NOT NULL,  enemy\_end\_units VARCHAR(50) NOT NULL,  id\_user NUMBER NOT NULL  )';  **execute** **immediate** 'ALTER TABLE battles ADD CONSTRAINT battles\_pk PRIMARY KEY ( id\_battle )';  /\*TAULA DEFENSES -------------------------------------------------------------\*/  **execute** **immediate** 'CREATE TABLE defenses (  id\_defense NUMBER NOT NULL,  defense\_name VARCHAR2(50) NOT NULL,  metal\_cost NUMBER NOT NULL,  deuterium\_cost NUMBER NOT NULL,  crystal\_cost NUMBER NOT NULL,  initial\_armor NUMBER NOT NULL,  armor NUMBER NOT NULL,  base\_damage NUMBER NOT NULL,  speed NUMBER NOT NULL,  generate\_wastings NUMBER NOT NULL  )';  **execute** **immediate** 'ALTER TABLE defenses ADD CONSTRAINT defenses\_pk PRIMARY KEY ( id\_defense )';  /\*TAULA PLANET\_DEFENSES -------------------------------------------------------------\*/  **execute** **immediate** 'CREATE TABLE planet\_defenses (  id\_planet\_defense NUMBER NOT NULL,  defense\_name VARCHAR2(50) NOT NULL,  metal\_cost NUMBER NOT NULL,  deuterium\_cost NUMBER NOT NULL,  crystal\_cost NUMBER NOT NULL,  initial\_armor NUMBER NOT NULL,  armor NUMBER NOT NULL,  base\_damage NUMBER NOT NULL,  speed NUMBER NOT NULL,  generate\_wastings NUMBER NOT NULL,  id\_planet NUMBER NOT NULL  )';  **execute** **immediate** 'ALTER TABLE planet\_defenses ADD CONSTRAINT planet\_defenses\_pk PRIMARY KEY ( id\_planet\_defense )';  /\*TAULA PLANETS --------------------------------------------------------------\*/  **execute** **immediate** 'CREATE TABLE planets (  id\_planet NUMBER NOT NULL,  planet\_name VARCHAR2(50) NOT NULL,  tech\_attack NUMBER NOT NULL,  tech\_defense NUMBER NOT NULL,  tech\_attack\_upgrade\_cost NUMBER NOT NULL,  tech\_defense\_upgrade\_cost NUMBER NOT NULL,  deuterium NUMBER NOT NULL,  metal NUMBER NOT NULL,  crystal NUMBER NOT NULL,  id\_user NUMBER NOT NULL  )';  **execute** **immediate** 'ALTER TABLE planets ADD CONSTRAINT planets\_pk PRIMARY KEY ( id\_planet )';  **execute** **immediate** 'ALTER TABLE planets ADD CONSTRAINT planets\_planet\_name UNIQUE ( planet\_name )';  /\*TAULA SHIPS ----------------------------------------------------------------\*/  **execute** **immediate** 'CREATE TABLE ships (  id\_ship NUMBER NOT NULL,  ship\_name VARCHAR2(50) NOT NULL,  metal\_cost NUMBER NOT NULL,  deuterium\_cost NUMBER NOT NULL,  crystal\_cost NUMBER NOT NULL,  initial\_armor NUMBER NOT NULL,  armor NUMBER NOT NULL,  base\_damage NUMBER NOT NULL,  speed NUMBER NOT NULL,  generate\_wastings NUMBER NOT NULL  )';  **execute** **immediate** 'ALTER TABLE ships ADD CONSTRAINT ships\_pk PRIMARY KEY ( id\_ship )';  /\*TAULA SHIPS ----------------------------------------------------------------\*/  **execute** **immediate** 'CREATE TABLE planet\_ships (  id\_planet\_ship NUMBER NOT NULL,  ship\_name VARCHAR2(50) NOT NULL,  metal\_cost NUMBER NOT NULL,  deuterium\_cost NUMBER NOT NULL,  crystal\_cost NUMBER NOT NULL,  initial\_armor NUMBER NOT NULL,  armor NUMBER NOT NULL,  base\_damage NUMBER NOT NULL,  speed NUMBER NOT NULL,  generate\_wastings NUMBER NOT NULL,  id\_planet NUMBER NOT NULL  )';  **execute** **immediate** 'ALTER TABLE planet\_ships ADD CONSTRAINT planet\_ships\_pk PRIMARY KEY ( id\_planet\_ship )';  /\*TAULA USERS ----------------------------------------------------------------\*/  **execute** **immediate** 'CREATE TABLE users (  id\_user NUMBER NOT NULL,  user\_name VARCHAR2(50) NOT NULL,  user\_password VARCHAR2(50) NOT NULL,  birth\_date DATE  )';  **execute** **immediate** 'ALTER TABLE users ADD CONSTRAINT users\_pk PRIMARY KEY ( id\_user )';  **execute** **immediate** 'ALTER TABLE users ADD CONSTRAINT users\_user\_name UNIQUE ( user\_name )';  /\*FOREIGN KEYS ###############################################################\*/  **execute** **immediate** 'ALTER TABLE battles ADD CONSTRAINT battles\_users\_fk FOREIGN KEY ( id\_user )  REFERENCES users ( id\_user )';  **execute** **immediate** 'ALTER TABLE planets ADD CONSTRAINT planets\_users\_fk FOREIGN KEY ( id\_user )  REFERENCES users ( id\_user )';  **execute** **immediate** 'ALTER TABLE planet\_ships ADD CONSTRAINT planet\_ships\_planets\_fk FOREIGN KEY ( id\_planet )  REFERENCES planets ( id\_planet )';  **execute** **immediate** 'ALTER TABLE planet\_defenses ADD CONSTRAINT planet\_defenses\_planets\_fk FOREIGN KEY ( id\_planet )  REFERENCES planets ( id\_planet )';  **end**; |

### INSERT\_DATA

|  |  |
| --- | --- |
| 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 | **create** **or** **replace** **procedure** insert\_data  **as**  existe int := **0**;  **begin**  /\*INSERCIO SHIPS #############################################################\*/  **select** count(\*) **into** existe **from** user\_tables **where** table\_name = 'SHIPS';  **if** existe != **0** **then**  **execute** **immediate** 'insert into ships (id\_ship, ship\_name, metal\_cost, crystal\_cost, deuterium\_cost,  initial\_armor, armor, base\_damage, speed, generate\_wastings)  values (1,''Light hunter'', 3000, 0, 50, 400, 0, 80, 3, 20)';  **execute** **immediate** 'insert into ships (id\_ship, ship\_name, metal\_cost, crystal\_cost, deuterium\_cost,  initial\_armor, armor, base\_damage, speed, generate\_wastings)  values (2,''Heavy hunter'', 6500, 0, 50, 1000, 0, 150, 7, 30)';  **execute** **immediate** 'insert into ships (id\_ship, ship\_name, metal\_cost, crystal\_cost, deuterium\_cost,  initial\_armor, armor, base\_damage, speed, generate\_wastings)  values (3,''Battle ship'', 45000, 0, 7000, 6000, 0, 1000, 45, 60)';  **execute** **immediate** 'insert into ships (id\_ship, ship\_name, metal\_cost, crystal\_cost, deuterium\_cost,  initial\_armor, armor, base\_damage, speed, generate\_wastings)  values (4,''Armored ship'', 30000, 0, 15000, 8000, 0, 700, 70, 75)';  **end** **if**;  /\*INSERCIO DEFENSES ##########################################################\*/  **select** count(\*) **into** existe **from** user\_tables **where** table\_name = 'DEFENSES';  **if** existe != **0** **then**  **execute** **immediate** 'insert into defenses (id\_defense, defense\_name, metal\_cost, crystal\_cost,  deuterium\_cost, initial\_armor, armor, base\_damage, speed, generate\_wastings)  values (1,''Missile launcher'', 2000, 0, 0, 200, 0, 80, 5, 10)';  **execute** **immediate** 'insert into defenses (id\_defense, defense\_name, metal\_cost, crystal\_cost,  deuterium\_cost, initial\_armor, armor, base\_damage, speed, generate\_wastings)  values (2,''Ion cannon'', 4000, 0, 500, 1200, 0, 250, 12, 25)';  **execute** **immediate** 'insert into defenses (id\_defense, defense\_name, metal\_cost, crystal\_cost,  deuterium\_cost, initial\_armor, armor, base\_damage, speed, generate\_wastings)  values (3,''Plasma cannon'', 50000, 0, 5000, 7000, 0, 2000, 30, 50)';  **end** **if**;  **end**; |

### INITIALIZE

|  |  |
| --- | --- |
| 1  2  3  4  5  6  7  8  9  10  11  12  13  14 | **create** **or** **replace** **procedure** initialize(**reset** int:=**0**)  **as**  existe int := **0**;  **begin**  **select** count(\*) **into** existe **from** user\_tables;  **if** **reset** != **0** **or** existe = **0** **then** /\*Reset o taules no existeixen\*/  drop\_table;  create\_table;  insert\_data;  dbms\_output**.**put\_line('Reseted database');  **else**  dbms\_output**.**put\_line('Tables already exist');  **end** **if**;  **end**; |

### GET\_DEFENSE & GET\_SHIP

### GET\_DEFENSE

|  |  |
| --- | --- |
| 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 | **create** **or** **replace** **procedure** get\_defense(  pid\_defense **in** **out** int,  pdefense\_name **out** varchar,  pmetal\_cost **out** int,  pcrystal\_cost **out** int,  pdeuterium\_cost **out** int,  pinitial\_armor **out** int,  parmor **out** int,  pbase\_damage **out** int,  pspeed **out** int,  pgenerate\_wastings **out** int)  **as**  **cursor** c1 **is** **select** \* **from** defenses **where** id\_defense = pid\_defense;  defense\_row c1%rowtype;  **begin**  **open** c1;  **fetch** c1 **into** defense\_row;  pid\_defense := defense\_row**.**id\_defense;  pdefense\_name := defense\_row**.**defense\_name;  pmetal\_cost := defense\_row**.**metal\_cost;  pcrystal\_cost := defense\_row**.**crystal\_cost;  pdeuterium\_cost := defense\_row**.**deuterium\_cost;  pinitial\_armor := defense\_row**.**initial\_armor;  parmor := defense\_row**.**armor;  pbase\_damage := defense\_row**.**base\_damage;  pspeed := defense\_row**.**speed;  pgenerate\_wastings := defense\_row**.**generate\_wastings;  **end**;  /\*Pon variables out, en java se llama al procedimiento con una variable in y se recorre el resultado con getTipovalor(posicion)\*/ |

### 

### GET\_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 | **create** **or** **replace** **procedure** get\_ship(  pid\_ship **in** **out** int,  pship\_name **out** varchar,  pmetal\_cost **out** int,  pcrystal\_cost **out** int,  pdeuterium\_cost **out** int,  pinitial\_armor **out** int,  parmor **out** int,  pbase\_damage **out** int,  pspeed **out** int,  pgenerate\_wastings **out** int)  **as**  **cursor** c1 **is** **select** \* **from** ships **where** id\_ship = pid\_ship;  ship\_row c1%rowtype;  **begin**  **open** c1;  **fetch** c1 **into** ship\_row;  pid\_ship := ship\_row**.**id\_ship;  pship\_name := ship\_row**.**ship\_name;  pmetal\_cost := ship\_row**.**metal\_cost;  pcrystal\_cost := ship\_row**.**crystal\_cost;  pdeuterium\_cost := ship\_row**.**deuterium\_cost;  pinitial\_armor := ship\_row**.**initial\_armor;  parmor := ship\_row**.**armor;  pbase\_damage := ship\_row**.**base\_damage;  pspeed := ship\_row**.**speed;  pgenerate\_wastings := ship\_row**.**generate\_wastings;  **end**; |

# 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).