**CMPSC 221 Lab 5 Report**

**Date:September 15, 2012**

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**Code:**

**Source code**

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\* Name: Erik Arfvidson

\* Program: Lab 5

\* Date: 9/15/2012

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**public** **class** EnemyClass {

**private** **int** levels;//level the enemy is on

**private** **int** lvlStrength;//Strength that enemy has

**private** **boolean** active;//If enemy is active or not

**private** String name;//the name of the enemy

**private** **int** Strengththresh=15;//Strength threshold that determines when enemy becomes inactive

**private** **static** **final** **int** *DAMAGE*=25;//the damage the player has over enemies

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**public** EnemyClass() //default constructor

{

**this**(3, 100, **true**);

}

**public** EnemyClass(**int** levels, **int** lvlStrength, **boolean** active, String name) //added this for fun so that I could name enemies

{

**this**.levels=levels;

**this**.lvlStrength=lvlStrength;

**this**.name=name+**this**.lvlStrength;

**this**.active=active;

**if**(lvlStrength<Strengththresh)//checks if active

{

**this**.active=**false**;

}

}

**public** EnemyClass(**int** levels, **int** lvlStrength, **boolean** active) //Initializer constructor takes in levels, lvlStrength , and active

{

**this**.levels=levels;

**this**.lvlStrength=lvlStrength;

**this**.active=active;

**this**.name="Grunt"+ **this**.lvlStrength;

**if**(lvlStrength<Strengththresh)//checks if active

{

**this**.active=**false**;

}

}

**public** **void** Hit(**int** playerLevel)//returns modifies

{

lvlStrength-=*DAMAGE*-1\*playerLevel;

**if**(lvlStrength<0)

{

lvlStrength = 0;

}

**if**(lvlStrength<Strengththresh)

{

**this**.active=**false**;

}

}

**public** **void** Deactivate()//Deactivate enemy

{

**this**.active=**false**;

}

**public** **void** Activate()//Activate enemy

{

**this**.active=**true**;

}

**public** **int** getStr ()//returns Strength

{

**return** lvlStrength;

}

**public** **int** Danger (**int** playerLevel)//returns the danger of enemy

{

**int** danger=0; //the danger of an opponent to the player

**if**(lvlStrength>=Strengththresh&&active)

{

danger = lvlStrength - **this**.levels + playerLevel;

**if**(danger<0)

{

danger = 0;

}

}

**else**

{

danger = 0;

}

**return** danger;

}

**public** **boolean** secondEnemy(EnemyClass loro)

{

**if**(lvlStrength<loro.getStr()+1)

{

**return** **false**;

}

**else**

**return** **true**;

}

**public** String toString()

{

**return** "EnemyClass [levels=" + levels + ", lvlStrength=" + lvlStrength

+ ", active=" + active + ", name=" + name + "]";

}

}

**Test Driver Code**

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\* Name: Erik Arfvidson

\* Program: Lab 2

\* Date: 9/5/2012

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**public** **class** testDriver

{

**public** **static** **void** main(String[] args)

{

EnemyClass EnemyClass1;

EnemyClass EnemyClass2;

EnemyClass EnemyClass3;

EnemyClass[] allEnemies = **new** EnemyClass[3];

**int** danger1;

**int** danger2;

**int** danger3;

**int** playerLevel=2;

EnemyClass1 = **new** EnemyClass();

EnemyClass2 = **new** EnemyClass(10, 60, **true**);

EnemyClass3 = **new** EnemyClass(12, 15, **true**);

System.*out*.println("\nNow begin the test driver");

System.*out*.println("\nEnemyClass1: " + EnemyClass1.toString());

System.*out*.println("EnemyClass2: " + EnemyClass2.toString());

System.*out*.println("EnemyClass3: " + EnemyClass3.toString());

//test the CurrentStrength accessor.

System.*out*.println("\nNow we test the CurrentStrength accessor to see if it works. ");

System.*out*.println("\nthe strength of EnemyClass1: "+ EnemyClass1.getStr());

System.*out*.println("the strength of EnemyClass2: "+ EnemyClass2.getStr());

System.*out*.println("the strength of EnemyClass3: "+ EnemyClass3.getStr());

//test the SingleHit accessor.

System.*out*.println("\nNow we test the EnemyClass with a single hit ");

System.*out*.println("EnemyClass's strength after one hit:");

allEnemies[0] = EnemyClass1;

allEnemies[1] = EnemyClass2;

allEnemies[2] = EnemyClass3;

**for**(**int** count = 0 ; count<allEnemies.length ; count++)

{

allEnemies[count].Hit(playerLevel);

}

System.*out*.println("\nthe strength of EnemyClass1: "+ EnemyClass1.getStr());

System.*out*.println("the strength of EnemyClass2: " + EnemyClass2.getStr());

System.*out*.println("the strength of EnemyClass3: " + EnemyClass3.getStr());

**for**(**int** count = 0 ; count<allEnemies.length ; count++)

{

allEnemies[count].Deactivate();

}

System.*out*.println("\nAfter deactivation, the EnemyClasss are now: ");

System.*out*.println("\nEnemyClass1: " + EnemyClass1.toString());

System.*out*.println("EnemyClass2: " + EnemyClass2.toString());

System.*out*.println("EnemyClass3: " + EnemyClass3.toString());

System.*out*.println("\nAfter becoming active, the EnemyClasss are now: ");

**for**(**int** count = 0 ; count<allEnemies.length ; count++)

{

allEnemies[count].Activate();

}

System.*out*.println("\nEnemyClass1: " + EnemyClass1.toString());

System.*out*.println("EnemyClass2: " + EnemyClass2.toString());

System.*out*.println("EnemyClass3: " + EnemyClass3.toString());

System.*out*.println("\n Player at line"+ playerLevel);

danger1 = EnemyClass1.Danger(playerLevel);

danger2 = EnemyClass2.Danger(playerLevel);

danger3 = EnemyClass3.Danger(playerLevel);

System.*out*.println("\nThe danger of the first EnemyClass to the player is: "+ danger1);

System.*out*.println("\nThe danger of the second EnemyClass to the player is: "+ danger2);

System.*out*.println("\nThe danger of the third EnemyClass to the player is: "+ danger3);

System.*out*.println("\nTesting the EnemyClass Comparison method.");

System.*out*.println("Comparing EnemyClass1 and EnemyClass2: ");

**if** (EnemyClass1.secondEnemy(EnemyClass2))

{

System.*out*.println("\nEnemyClass1 is stronger");

}

**else**

{

System.*out*.println("\nEnemyClass2 is stronger");

}

}

}

**Sample Runs**

Now begin the test driver

EnemyClass1: EnemyClass [levels=3, lvlStrength=100, active=true, name=Grunt100]

EnemyClass2: EnemyClass [levels=10, lvlStrength=60, active=true, name=Grunt60]

EnemyClass3: EnemyClass [levels=12, lvlStrength=15, active=true, name=Grunt15]

Now we test the CurrentStrength accessor to see if it works.

the strength of EnemyClass1: 100

the strength of EnemyClass2: 60

the strength of EnemyClass3: 15

Now we test the EnemyClass with a single hit

EnemyClass's strength after one hit:

the strength of EnemyClass1: 77

the strength of EnemyClass2: 37

the strength of EnemyClass3: 0

After deactivation, the EnemyClasss are now:

EnemyClass1: EnemyClass [levels=3, lvlStrength=77, active=false, name=Grunt100]

EnemyClass2: EnemyClass [levels=10, lvlStrength=37, active=false, name=Grunt60]

EnemyClass3: EnemyClass [levels=12, lvlStrength=0, active=false, name=Grunt15]

After becoming active, the EnemyClasss are now:

EnemyClass1: EnemyClass [levels=3, lvlStrength=77, active=true, name=Grunt100]

EnemyClass2: EnemyClass [levels=10, lvlStrength=37, active=true, name=Grunt60]

EnemyClass3: EnemyClass [levels=12, lvlStrength=0, active=true, name=Grunt15]

Player at line2

The danger of the first EnemyClass to the player is: 76

The danger of the second EnemyClass to the player is: 29

The danger of the third EnemyClass to the player is: 0

Testing the EnemyClass Comparison method.

Comparing EnemyClass1 and EnemyClass2:

EnemyClass1 is stronger