**Pokemon Class**

**Data Fields**

|  |  |  |
| --- | --- | --- |
| **Data Field Name** | **Type** | **Default** |
| name | String | <none> |
| type | String | <none> |
| power | int | <none> |
| hp | int | <none> |
| maxHP | int | <none> |
| defense | int | <none> |
| Level | int | 1 |
| isFainted | boolean | false |

**Constructors** – (2 Constructors)

Constructor # 1 – Empty/No-arg Constructor – Defaults to Pikachu

name = “Pikachu”, type = “Electric”, power = 6, defense = 2, hp = 15, maxHP = 15

Constructor # 2 – (String name, String type, int hp, int power, int defense)

Assign data fields the appropriate received value

**Methods**

*public String toString()*

This will return a String that shows the current state of the Pokemon. Remember that you can use “\n” and “\t” to create new lines and tab information to make it line up. Sample output:

Name: Bulbasaur

Level: 1 Type: Water

Power: 5 Def: 4

Health: 0/9 Fainted?: true

*public void levelUp()*

This method will increase the Pokemon’s level by 1 and add to its stats. All stat increases are outputted:

* hp (and maxHP) will increase by 1 to 8 Sample Output
* power increases by 1 to 3

LEVEL UP!!!!!!!

Pikachu gained 5 health

Pikachu gained 3 power

Pikachu gained 2 defense

* defense increases by 1 to 3

*public void kill()*

This method will simply output that the Pokemon “fainted”. It also sets its hp to 0 and sets isFainted to true. If the pokemon is already fainted, an alternative appropriate message is displayed.

*public void heal(int amount)*

This method will simply heal the Pokemon the received amount. Make sure that the Pokemon’s hp doesn’t exceed its maxHP. Output an appropriate message indicating amount healed and current hp (and maxHP) status. If the Pokemon was fainted and the healing brings him back to positive, he should not be fainted anymore and a message should be outputted that he is back in the fight.

Bulbasaur is healed 4 points.

Bulbasaur is now at 4/9

Bulbasaur is no longer fainted and is back in the fight!

Bulbasaur is healed 4 points.

Bulbasaur is now at 5/9

*public void attack(Pokemon enemy)*

This method is what we will use to attack another Pokemon object. We receive the object that we are attacking. Here’s the rules:

1. We don’t attack a fainted Pokemon since he is already dead.
2. Damage done is simply the attacker’s power – enemy’s defense. This damage is done to the enemy only.
3. Damage is possibly multiplied, based on the attacker’s type vs. the enemy’s type. Use the table below:
   1. If anything other than normal damage is given, output that the enemy’s type is “weak”/”strong” against the attacker’s type.
   2. The multiplier is factored in AFTER the (power-defense) calculation
4. If the damage causes the enemy to 0 or below, call that enemy’s *kill* method.

Damage Multiplier Table (Simplified)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Fire | Water | Electric | Grass |
| Fire | ½ Damage | ½ Damage | Normal Damage | 2x Damage |
| Water | 2x Damage | ½ Damage | Normal Damage | ½ Damage |
| Electric | Normal Damage | 2x Damage | ½ Damage | ½ Damage |
| Grass | ½ Damage | 2x Damage | Normal Damage | ½ Damage |

PokemonRunner Example:

**public** **class** PokemonRunner {

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

Pokemon p = **new** Pokemon("Pikachu", "Electric", 15, 6, 2);

System.***out***.println(p);

p.levelUp();

System.***out***.println(p);

Pokemon b = **new** Pokemon("Bulbasaur", "Water", 9, 5, 4);

System.***out***.println(b);

p.attack(b);

b.heal(4);

p.attack(b);

System.***out***.println(b);

}

}

Sample Output

Name: Pikachu

Level: 1 Type: Electric

Power: 6 Def: 2

Health: 15/15 Fainted?: false

LEVEL UP!!!!!!!

Pikachu gained 4 health

Pikachu gained 2 power

Pikachu gained 2 defense

Name: Pikachu

Level: 2 Type: Electric

Power: 8 Def: 4

Health: 19/19 Fainted?: false

Name: Bulbasaur

Level: 1 Type: Water

Power: 5 Def: 4

Health: 9/9 Fainted?: false

Pikachu attacks Bulbasaur

Water is weak to Electric and takes 2x damage!

Bulbasaur takes 8 damage.

Bulbasaur is healed 4 points.

Bulbasaur is now at 5/9

Pikachu attacks Bulbasaur

Water is weak to Electric and takes 2x damage!

Bulbasaur takes 8 damage.

Bulbasaur faints!

Bulbasaur is healed 25 points.

Bulbasaur is now at 9/9

Bulbasaur is no longer fainted and is back in the fight!

Name: Bulbasaur

Level: 1 Type: Water

Power: 5 Def: 4

Health: 9/9 Fainted?: false