PROGRAM DEVELOPMENT (2019/20)

Mock Defense 1

Taking as input the source code delivered for the final delivery of the project and the init data provided, develop the next modifications in your code:

1. Following the **inheritance and polymorphism** principles, make the next change in your:
   a. the project will be ready to allow the creation of new instances of House that are characterized by sorting its characters from **more to less defensive points. In caso of a tie in those points, the inverse alphabetic order will be used (that is Z->A).**
   b. the project will be ready to allow the creation of new instances of House that are characterized by **not sorting its characters**. That is, these instances will do the same actions as the other instances except that when the instances of houses are sorted, these instances, instead of sorting, will display the next message: "The instances using this order behavior does not apply any order ".

Time: strictly 60 minutes

*In order to pass the exam, the project must **compile and execute properly** in the time provided for the exam.*

Test:

To test the defense, the student should use the initialization defined in InitData1 applying the next changes:

- the instance whose name is Gryffindor will be changed for "**GryffindorHouse**" and it will be an instance of the type indicated in the 1.a section.
- at the end of the initialization an instance called "**RavenclawHouse**" will be created and it will be an instance of the type indicated in the 1.b section. This new instance will have the next characters:

        //Character luna = new DefensiveCharacter("Luna Lovegood", …);
        ->assign Wand (name: "LunaW", type: "HawthornWandBehavior") to luna
        ->assign InvigorationPotion to luna
        //Character cho = new OffensiveCharacter("Cho Chang", …);
        ->assign Wand (name: "ChoW", type: "HawthornWandBehavior") to cho
        ->assign FelixFelicisPotion to cho
        // Character filius = new DefensiveCharacter("Filius Flitwick", …);
        ->assign Wand (name: "FiliusW", type: "HawthornWandBehavior") to filius
        ->assign InvigorationPotion to filius
        // Character quirinus = new OffensiveCharacter("Quirinus Quirrell",...);
        ->assign Wand (name: "QuirinusW", type: "HollyWandBehavior") to quirinus

Applying the indicated changes, an output similar to the next output is expected at the end of the simulation:

…….
end of the simulation:
----
houses:
----
house:<GryffindorHouse>
character:<Neville Longbottom> <e: 19.5> <o: 20.0> <d: 25.0> <wand: Tamarack (HollyWandBehavior)>

house:<Slytherin>

house:<Hufflepuff>

house:<RavenclawHouse>

new wands:
----
dungeon characters:
----

character:<Pansy Parkinson> <e: 0.0> <o: 32.5> <d: 20.0> <wand: PansyW (HawthornWandBehavior)>
character:<Luna Lovegood> <e: 0.0> <o: 20.0> <d: 35.0> <wand: LunaW (HawthornWandBehavior)>
character:<Harry Potter> <e: 0.0> <o: 32.5> <d: 28.0> <wand: HarryW (HawthornWandBehavior)>
character:<Nymphadora Tonks> <e: 0.0> <o: 20.0> <d: 25.0> <wand: NymphadoraW (HawthornWandBehavior)>
character:<Ron Weasley> <e: 0.0> <o: 26.0> <d: 25.0> <wand: RonW (HawthornWandBehavior)>
character:<Pomona Sprout> <e: 0.0> <o: 32.5> <d: 20.0> <wand: PomonaW (HawthornWandBehavior)>
character:<Hermione Granger> <e: 0.0> <o: 20.0> <d: 35.0> <wand: Ivy (HawthornWandBehavior)>
character:<Dolores Umbridge> <e: 0.0> <o: 25.0> <d: 20.0> <wand: Laurel (HawthornWandBehavior)>
character:<Cho Chang> <e: 0.0> <o: 32.5> <d: 20.0> <wand: Larch (HawthornWandBehavior)>
character:<Albus Severus Potter> <e: 0.0> <o: 25.0> <d: 20.0> <wand: Pear (HawthornWandBehavior)>
character:<Rolf Scamander> <e: 0.0> <o: 20.0> <d: 25.0> <wand: Rowan (HollyWandBehavior)>
character:<Cedric Diggory> <e: 0.0> <o: 20.0> <d: 35.0> <wand: Hazel (HawthornWandBehavior)>
character:<Quirinus Quirrell> <e: 0.0> <o: 25.0> <d: 20.0> <wand: Yew (HawthornWandBehavior)>
character:<Draco Malfoy> <e: 0.0> <o: 20.0> <d: 25.0> <wand: Spruce (HawthornWandBehavior)>
character:<Filius Flitwick> <e: 0.0> <o: 20.0> <d: 35.0> <wand: Pine (HawthornWandBehavior)>

the winner house is:
----
house:<GryffindorHouse>
character:<Neville Longbottom> <e: 19.5> <o: 20.0> <d: 25.0> <wand: Tamarack (HollyWandBehavior)>

Teacher's output:

HogwartsDemo.main({ });

<<   House (GryffindorHouse) members before   >> [character:<Harry Potter> <e: 20.0> <o: 32.5> <d: 28.0> <wand: HarryW (HawthornWandBehavior)>, character:<Hermione Granger> <e: 20.0> <o: 20.0> <d: 35.0> <wand: HermioneW (HollyWandBehavior)>, character:<Ron Weasley> <e: 20.0> <o: 26.0> <d: 25.0> <wand: RonW (HawthornWandBehavior)>, character:<Neville Longbottom> <e: 20.0> <o: 20.0> <d: 25.0> <wand: NevilleW (HawthornWandBehavior)>]

<<   House (GryffindorHouse)members after   >> [character:<Hermione Granger> <e: 20.0> <o: 20.0> <d: 35.0> <wand: HermioneW (HollyWandBehavior)>, character:<Harry Potter> <e: 20.0> <o: 32.5> <d: 28.0> <wand: HarryW (HawthornWandBehavior)>, character:<Ron Weasley> <e: 20.0> <o: 26.0> <d: 25.0> <wand: RonW (HawthornWandBehavior)>, character:<Neville Longbottom> <e: 20.0> <o: 20.0> <d: 25.0> <wand: NevilleW (HawthornWandBehavior)>]

<<   House (Hufflepuff) members before   >> [character:<Cedric Diggory> <e: 20.0> <o: 20.0> <d: 35.0> <wand: CedricW (HawthornWandBehavior)>, character:<Nymphadora Tonks> <e: 20.0> <o: 20.0> <d: 25.0> <wand: NymphadoraW (HawthornWandBehavior)>, character:<Pomona Sprout> <e: 20.0> <o: 32.5> <d: 20.0> <wand: PomonaW (HawthornWandBehavior)>, character:<Rolf Scamander> <e: 20.0> <o: 20.0> <d: 25.0> <wand: RolfW (HawthornWandBehavior)>]

<<   House (Hufflepuff)members after   >> [character:<Cedric Diggory> <e: 20.0> <o: 20.0> <d: 35.0> <wand: CedricW (HawthornWandBehavior)>, character:<Nymphadora Tonks> <e: 20.0> <o: 20.0> <d: 25.0> <wand: NymphadoraW (HawthornWandBehavior)>, character:<Rolf Scamander> <e: 20.0> <o: 20.0> <d: 25.0> <wand: RolfW (HawthornWandBehavior)>, character:<Pomona Sprout> <e: 20.0> <o: 32.5> <d: 20.0> <wand: PomonaW (HawthornWandBehavior)>]

<<   House (Slytherin) members before   >> [character:<Draco Malfoy> <e: 20.0> <o: 20.0> <d: 25.0> <wand: DracoW (HollyWandBehavior)>, character:<Dolores Umbridge> <e: 20.0> <o: 25.0> <d: 20.0> <wand: DoloresW (HollyWandBehavior)>, character:<Pansy Parkinson> <e: 20.0> <o: 32.5> <d: 20.0> <wand: PansyW (HawthornWandBehavior)>, character:<Albus Severus Potter> <e: 20.0> <o: 25.0> <d: 20.0> <wand: AlbusW (HollyWandBehavior)>]

<<   House (Slytherin)members after   >> [character:<Pansy Parkinson> <e: 20.0> <o: 32.5> <d: 20.0> <wand: PansyW (HawthornWandBehavior)>, character:<Dolores Umbridge> <e: 20.0> <o: 25.0> <d: 20.0> <wand: DoloresW (HollyWandBehavior)>, character:<Albus Severus Potter> <e: 20.0> <o: 25.0> <d: 20.0> <wand: AlbusW (HollyWandBehavior)>, character:<Draco Malfoy> <e: 20.0> <o: 20.0> <d: 25.0> <wand: DracoW (HollyWandBehavior)>]

<<   House (RavenclawHouse) members before   >> [character:<Luna Lovegood> <e: 20.0> <o: 20.0> <d: 35.0> <wand: LunaW (HawthornWandBehavior)>, character:<Cho Chang> <e: 20.0> <o: 32.5> <d: 20.0> <wand: ChoW (HawthornWandBehavior)>, character:<Filius Flitwick> <e: 20.0> <o: 20.0> <d: 35.0> <wand: FiliusW (HawthornWandBehavior)>, character:<Quirinus Quirrell> <e: 20.0> <o: 25.0> <d: 20.0> <wand: QuirinusW (HollyWandBehavior)>]

The classes using this order behavior does not apply any order

<<   House (RavenclawHouse)members after   >> [character:<Luna Lovegood> <e: 20.0> <o: 20.0> <d: 35.0> <wand: LunaW (HawthornWandBehavior)>, character:<Cho Chang> <e: 20.0> <o: 32.5> <d: 20.0> <wand: ChoW (HawthornWandBehavior)>, character:<Filius Flitwick> <e: 20.0> <o: 20.0> <d: 35.0> <wand: FiliusW (HawthornWandBehavior)>, character:<Quirinus Quirrell> <e: 20.0> <o: 25.0> <d: 20.0> <wand: QuirinusW (HollyWandBehavior)>]

houses:

----

house:<GryffindorHouse>

character:<Hermione Granger> <e: 20.0> <o: 20.0> <d: 35.0> <wand: HermioneW (HollyWandBehavior)>

character:<Harry Potter> <e: 20.0> <o: 32.5> <d: 28.0> <wand: HarryW (HawthornWandBehavior)>

character:<Ron Weasley> <e: 20.0> <o: 26.0> <d: 25.0> <wand: RonW (HawthornWandBehavior)>

character:<Neville Longbottom> <e: 20.0> <o: 20.0> <d: 25.0> <wand: NevilleW (HawthornWandBehavior)>

house:<Slytherin>

character:<Pansy Parkinson> <e: 20.0> <o: 32.5> <d: 20.0> <wand: PansyW (HawthornWandBehavior)>

character:<Dolores Umbridge> <e: 20.0> <o: 25.0> <d: 20.0> <wand: DoloresW (HollyWandBehavior)>

character:<Albus Severus Potter> <e: 20.0> <o: 25.0> <d: 20.0> <wand: AlbusW (HollyWandBehavior)>
character:<Draco Malfoy> <e: 20.0> <o: 20.0> <d: 25.0> <wand: DracoW (HollyWandBehavior)>

house:<Hufflepuff>
character:<Cedric Diggory> <e: 20.0> <o: 20.0> <d: 35.0> <wand: CedricW (HawthornWandBehavior)>
character:<Nymphadora Tonks> <e: 20.0> <o: 20.0> <d: 25.0> <wand: NymphadoraW (HawthornWandBehavior)>
character:<Rolf Scamander> <e: 20.0> <o: 20.0> <d: 25.0> <wand: RolfW (HawthornWandBehavior)>
character:<Pomona Sprout> <e: 20.0> <o: 32.5> <d: 20.0> <wand: PomonaW (HawthornWandBehavior)>

house:<RavenclawHouse>
character:<Luna Lovegood> <e: 20.0> <o: 20.0> <d: 35.0> <wand: LunaW (HawthornWandBehavior)>
character:<Cho Chang> <e: 20.0> <o: 32.5> <d: 20.0> <wand: ChoW (HawthornWandBehavior)>
character:<Filius Flitwick> <e: 20.0> <o: 20.0> <d: 35.0> <wand: FiliusW (HawthornWandBehavior)>
character:<Quirinus Quirrell> <e: 20.0> <o: 25.0> <d: 20.0> <wand: QuirinusW (HollyWandBehavior)>

new wands:
----
wand: <Hazel (HawthornWandBehavior)>
wand: <Ivy (HawthornWandBehavior)>
wand: <Larch (HawthornWandBehavior)>
wand: <Laurel (HawthornWandBehavior)>
wand: <Pear (HawthornWandBehavior)>
wand: <Pine (HawthornWandBehavior)>
wand: <Rowan (HollyWandBehavior)>
wand: <Spruce (HawthornWandBehavior)>
wand: <Tamarack (HollyWandBehavior)>
wand: <Yew (HawthornWandBehavior)>

turn: <0>
characters who are going to duel:
----
character:<Cedric Diggory> <e: 20.0> <o: 20.0> <d: 35.0> <wand: CedricW (HawthornWandBehavior)>
character:<Hermione Granger> <e: 20.0> <o: 20.0> <d: 35.0> <wand: HermioneW (HollyWandBehavior)>
character:<Luna Lovegood> <e: 20.0> <o: 20.0> <d: 35.0> <wand: LunaW (HawthornWandBehavior)>
character:<Pansy Parkinson> <e: 20.0> <o: 32.5> <d: 20.0> <wand: PansyW (HawthornWandBehavior)>

duels:

<Cedric Diggory> is dueling against <Hermione Granger>
attack points of <Cedric Diggory> are: <40.0>
resistance points of <Hermione Granger> are: <56.5>
the remaining energy of <Hermione Granger> after the duel are: <20.0>

<Cedric Diggory> is dueling against <Luna Lovegood>
attack points of <Cedric Diggory> are: <40.0>
resistance points of <Luna Lovegood> are: <23.0>
the remaining energy of <Luna Lovegood> after the duel are: <3.0>

<Cedric Diggory> is dueling against <Pansy Parkinson>
attack points of <Cedric Diggory> are: <40.0>
resistance points of <Pansy Parkinson> are: <20.0>
the remaining energy of <Pansy Parkinson> after the duel are: <0.0>

<Hermione Granger> is dueling against <Luna Lovegood>
attack points of <Hermione Granger> are: <20.0>
resistance points of <Luna Lovegood> are: <9.4>
the remaining energy of <Luna Lovegood> after the duel are: <0.0>

<Hermione Granger> is dueling against <Pansy Parkinson>
<Hermione Granger> is dueling against <Cedric Diggory>
attack points of <Hermione Granger> are: <20.0>
resistance points of <Cedric Diggory> are: <23.0>
the remaining energy of <Cedric Diggory> after the duel are: <20.0>

<Luna Lovegood> is dueling against <Pansy Parkinson>
<Luna Lovegood> is dueling against <Cedric Diggory>
<Luna Lovegood> is dueling against <Hermione Granger>
<Pansy Parkinson> is dueling against <Cedric Diggory>
<Pansy Parkinson> is dueling against <Hermione Granger>
<Pansy Parkinson> is dueling against <Luna Lovegood>

duel results:
----
character:<Cedric Diggory> <e: 20.0> <o: 20.0> <d: 35.0> <wand: CedricW (HawthornWandBehavior)> returns to the house
new wand assigned: <Hazel (class HawthornWandBehavior)>
character:<Hermione Granger> <e: 20.0> <o: 20.0> <d: 35.0> <wand: HermioneW (HollyWandBehavior)> returns to the house
new wand assigned: <Ivy (class HawthornWandBehavior)>
character:<Luna Lovegood> <e: 0.0> <o: 20.0> <d: 35.0> <wand: LunaW (HawthornWandBehavior)> goes to dungeon
character:<Pansy Parkinson> <e: 0.0> <o: 32.5> <d: 20.0> <wand: PansyW (HawthornWandBehavior)> goes to dungeon

turn: <1>
characters who are going to duel:
----
character:<Cho Chang> <e: 20.0> <o: 32.5> <d: 20.0> <wand: ChoW (HawthornWandBehavior)>
character:<Dolores Umbridge> <e: 20.0> <o: 25.0> <d: 20.0> <wand: DoloresW (HollyWandBehavior)>
character:<Harry Potter> <e: 20.0> <o: 32.5> <d: 28.0> <wand: HarryW (HawthornWandBehavior)>
character:<Nymphadora Tonks> <e: 20.0> <o: 20.0> <d: 25.0> <wand: NymphadoraW (HawthornWandBehavior)>

duels:

<Cho Chang> is dueling against <Dolores Umbridge>
attack points of <Cho Chang> are: <57.5>
resistance points of <Dolores Umbridge> are: <40.0>
the remaining energy of <Dolores Umbridge> after the duel are: <2.5>

<Cho Chang> is dueling against <Harry Potter>
attack points of <Cho Chang> are: <57.5>
resistance points of <Harry Potter> are: <21.6>
the remaining energy of <Harry Potter> after the duel are: <0.0>

<Cho Chang> is dueling against <Nymphadora Tonks>
attack points of <Cho Chang> are: <57.5>
resistance points of <Nymphadora Tonks> are: <21.0>
the remaining energy of <Nymphadora Tonks> after the duel are: <0.0>

<Dolores Umbridge> is dueling against <Harry Potter>
<Dolores Umbridge> is dueling against <Nymphadora Tonks>
<Dolores Umbridge> is dueling against <Cho Chang>
attack points of <Dolores Umbridge> are: <9.25>
resistance points of <Cho Chang> are: <20.0>
the remaining energy of <Cho Chang> after the duel are: <20.0>

<Harry Potter> is dueling against <Nymphadora Tonks>
<Harry Potter> is dueling against <Cho Chang>
<Harry Potter> is dueling against <Dolores Umbridge>
<Nymphadora Tonks> is dueling against <Cho Chang>
<Nymphadora Tonks> is dueling against <Dolores Umbridge>
<Nymphadora Tonks> is dueling against <Harry Potter>

duel results:
----
character:<Cho Chang> <e: 20.0> <o: 32.5> <d: 20.0> <wand: ChoW (HawthornWandBehavior)> returns to the house
new wand assigned: <Larch (class HawthornWandBehavior)>
character:<Dolores Umbridge> <e: 2.5> <o: 25.0> <d: 20.0> <wand: DoloresW (HollyWandBehavior)> returns to the house
new wand assigned: <Laurel (class HawthornWandBehavior)>
character:<Harry Potter> <e: 0.0> <o: 32.5> <d: 28.0> <wand: HarryW (HawthornWandBehavior)> goes to dungeon
character:<Nymphadora Tonks> <e: 0.0> <o: 20.0> <d: 25.0> <wand: NymphadoraW (HawthornWandBehavior)> goes to dungeon

turn: <2>
characters who are going to duel:
----
character:<Albus Severus Potter> <e: 20.0> <o: 25.0> <d: 20.0> <wand: AlbusW (HollyWandBehavior)>
character:<Filius Flitwick> <e: 20.0> <o: 20.0> <d: 35.0> <wand: FiliusW (HawthornWandBehavior)>
character:<Rolf Scamander> <e: 20.0> <o: 20.0> <d: 25.0> <wand: RolfW (HawthornWandBehavior)>
character:<Ron Weasley> <e: 20.0> <o: 26.0> <d: 25.0> <wand: RonW (HawthornWandBehavior)>

duels:

<Albus Severus Potter> is dueling against <Filius Flitwick>
attack points of <Albus Severus Potter> are: <21.5>
resistance points of <Filius Flitwick> are: <23.0>
the remaining energy of <Filius Flitwick> after the duel are: <20.0>

<Albus Severus Potter> is dueling against <Rolf Scamander>
attack points of <Albus Severus Potter> are: <21.5>
resistance points of <Rolf Scamander> are: <21.0>
the remaining energy of <Rolf Scamander> after the duel are: <19.5>

<Albus Severus Potter> is dueling against <Ron Weasley>

attack points of <Albus Severus Potter> are: <21.5>

resistance points of <Ron Weasley> are: <21.0>

the remaining energy of <Ron Weasley> after the duel are: <19.5>

<Filius Flitwick> is dueling against <Rolf Scamander>

attack points of <Filius Flitwick> are: <40.0>

resistance points of <Rolf Scamander> are: <20.6>

the remaining energy of <Rolf Scamander> after the duel are: <0.1>

<Filius Flitwick> is dueling against <Ron Weasley>

attack points of <Filius Flitwick> are: <40.0>

resistance points of <Ron Weasley> are: <20.6>

the remaining energy of <Ron Weasley> after the duel are: <0.1>

<Filius Flitwick> is dueling against <Albus Severus Potter>

attack points of <Filius Flitwick> are: <40.0>

resistance points of <Albus Severus Potter> are: <40.0>

the remaining energy of <Albus Severus Potter> after the duel are: <20.0>

<Rolf Scamander> is dueling against <Ron Weasley>

attack points of <Rolf Scamander> are: <28.06>

resistance points of <Ron Weasley> are: <5.08>

the remaining energy of <Ron Weasley> after the duel are: <0.0>

<Rolf Scamander> is dueling against <Albus Severus Potter>

attack points of <Rolf Scamander> are: <28.06>

resistance points of <Albus Severus Potter> are: <40.0>

the remaining energy of <Albus Severus Potter> after the duel are: <20.0>

<Rolf Scamander> is dueling against <Filius Flitwick>

attack points of <Rolf Scamander> are: <28.06>

resistance points of <Filius Flitwick> are: <23.0>

the remaining energy of <Filius Flitwick> after the duel are: <14.94>

<Ron Weasley> is dueling against <Albus Severus Potter>

<Ron Weasley> is dueling against <Filius Flitwick>

<Ron Weasley> is dueling against <Rolf Scamander>

duel results:

----

character:<Albus Severus Potter> <e: 20.0> <o: 25.0> <d: 20.0> <wand: AlbusW (HollyWandBehavior)> returns to the house

new wand assigned: <Pear (class HawthornWandBehavior)>

character:<Filius Flitwick> <e: 14.94> <o: 20.0> <d: 35.0> <wand: FiliusW (HawthornWandBehavior)> returns to the house

new wand assigned: <Pine (class HawthornWandBehavior)>

character:<Rolf Scamander> <e: 0.1> <o: 20.0> <d: 25.0> <wand: RolfW (HawthornWandBehavior)> returns to the house

new wand assigned: <Rowan (class HollyWandBehavior)>

character:<Ron Weasley> <e: 0.0> <o: 26.0> <d: 25.0> <wand: RonW (HawthornWandBehavior)> goes to dungeon

turn: <3>

characters who are going to duel:

----
character:<Draco Malfoy> <e: 20.0> <o: 20.0> <d: 25.0> <wand: DracoW (HollyWandBehavior)>
character:<Neville Longbottom> <e: 20.0> <o: 20.0> <d: 25.0> <wand: NevilleW (HawthornWandBehavior)>
character:<Pomona Sprout> <e: 20.0> <o: 32.5> <d: 20.0> <wand: PomonaW (HawthornWandBehavior)>
character:<Quirinus Quirrell> <e: 20.0> <o: 25.0> <d: 20.0> <wand: QuirinusW (HollyWandBehavior)>

duels:

<Draco Malfoy> is dueling against <Neville Longbottom>
attack points of <Draco Malfoy> are: <20.0>
resistance points of <Neville Longbottom> are: <21.0>
the remaining energy of <Neville Longbottom> after the duel are: <20.0>

<Draco Malfoy> is dueling against <Pomona Sprout>
attack points of <Draco Malfoy> are: <20.0>
resistance points of <Pomona Sprout> are: <20.0>
the remaining energy of <Pomona Sprout> after the duel are: <20.0>

<Draco Malfoy> is dueling against <Quirinus Quirrell>
attack points of <Draco Malfoy> are: <20.0>
resistance points of <Quirinus Quirrell> are: <40.0>
the remaining energy of <Quirinus Quirrell> after the duel are: <20.0>

<Neville Longbottom> is dueling against <Pomona Sprout>
attack points of <Neville Longbottom> are: <40.0>
resistance points of <Pomona Sprout> are: <20.0>
the remaining energy of <Pomona Sprout> after the duel are: <0.0>

<Neville Longbottom> is dueling against <Quirinus Quirrell>
attack points of <Neville Longbottom> are: <40.0>
resistance points of <Quirinus Quirrell> are: <40.0>
the remaining energy of <Quirinus Quirrell> after the duel are: <20.0>

<Neville Longbottom> is dueling against <Draco Malfoy>
attack points of <Neville Longbottom> are: <40.0>
resistance points of <Draco Malfoy> are: <45.5>
the remaining energy of <Draco Malfoy> after the duel are: <20.0>

<Pomona Sprout> is dueling against <Quirinus Quirrell>
<Pomona Sprout> is dueling against <Draco Malfoy>
<Pomona Sprout> is dueling against <Neville Longbottom>
<Quirinus Quirrell> is dueling against <Draco Malfoy>
attack points of <Quirinus Quirrell> are: <21.5>
resistance points of <Draco Malfoy> are: <45.5>
the remaining energy of <Draco Malfoy> after the duel are: <20.0>

<Quirinus Quirrell> is dueling against <Neville Longbottom>
attack points of <Quirinus Quirrell> are: <21.5>
resistance points of <Neville Longbottom> are: <21.0>
the remaining energy of <Neville Longbottom> after the duel are: <19.5>

<Quirinus Quirrell> is dueling against <Pomona Sprout>

duel results:

----

character:<Draco Malfoy> <e: 20.0> <o: 20.0> <d: 25.0> <wand: DracoW (HollyWandBehavior)> returns to the house

new wand assigned: <Spruce (class HawthornWandBehavior)>

character:<Neville Longbottom> <e: 19.5> <o: 20.0> <d: 25.0> <wand: NevilleW (HawthornWandBehavior)> returns to the house

new wand assigned: <Tamarack (class HollyWandBehavior)>

character:<Pomona Sprout> <e: 0.0> <o: 32.5> <d: 20.0> <wand: PomonaW (HawthornWandBehavior)> goes to dungeon

character:<Quirinus Quirrell> <e: 20.0> <o: 25.0> <d: 20.0> <wand: QuirinusW (HollyWandBehavior)> returns to the house

new wand assigned: <Yew (class HawthornWandBehavior)>

turn: <4>

characters who are going to duel:

----

character:<Dolores Umbridge> <e: 2.5> <o: 25.0> <d: 20.0> <wand: Laurel (HawthornWandBehavior)>

character:<Cedric Diggory> <e: 20.0> <o: 20.0> <d: 35.0> <wand: Hazel (HawthornWandBehavior)>

character:<Cho Chang> <e: 20.0> <o: 32.5> <d: 20.0> <wand: Larch (HawthornWandBehavior)>

character:<Hermione Granger> <e: 20.0> <o: 20.0> <d: 35.0> <wand: Ivy (HawthornWandBehavior)>

duels:

<Dolores Umbridge> is dueling against <Cedric Diggory>

attack points of <Dolores Umbridge> are: <36.5>

resistance points of <Cedric Diggory> are: <23.0>

the remaining energy of <Cedric Diggory> after the duel are: <6.5>

<Dolores Umbridge> is dueling against <Cho Chang>

attack points of <Dolores Umbridge> are: <36.5>

resistance points of <Cho Chang> are: <20.0>

the remaining energy of <Cho Chang> after the duel are: <3.5>

<Dolores Umbridge> is dueling against <Hermione Granger>

attack points of <Dolores Umbridge> are: <36.5>

resistance points of <Hermione Granger> are: <23.0>

the remaining energy of <Hermione Granger> after the duel are: <6.5>

<Cedric Diggory> is dueling against <Cho Chang>

attack points of <Cedric Diggory> are: <31.9>

resistance points of <Cho Chang> are: <6.8>

the remaining energy of <Cho Chang> after the duel are: <0.0>

<Cedric Diggory> is dueling against <Hermione Granger>

attack points of <Cedric Diggory> are: <31.9>

resistance points of <Hermione Granger> are: <12.2>

the remaining energy of <Hermione Granger> after the duel are: <0.0>

<Cedric Diggory> is dueling against <Dolores Umbridge>

attack points of <Cedric Diggory> are: <31.9>

resistance points of <Dolores Umbridge> are: <6.0>

the remaining energy of <Dolores Umbridge> after the duel are: <0.0>

<Cho Chang> is dueling against <Hermione Granger>
<Cho Chang> is dueling against <Dolores Umbridge>
<Cho Chang> is dueling against <Cedric Diggory>
<Hermione Granger> is dueling against <Dolores Umbridge>
<Hermione Granger> is dueling against <Cedric Diggory>
<Hermione Granger> is dueling against <Cho Chang>

duel results:
----
character:<Dolores Umbridge> <e: 0.0> <o: 25.0> <d: 20.0> <wand: Laurel (HawthornWandBehavior)> goes to dungeon
character:<Cedric Diggory> <e: 6.5> <o: 20.0> <d: 35.0> <wand: Hazel (HawthornWandBehavior)> returns to the house
character:<Cho Chang> <e: 0.0> <o: 32.5> <d: 20.0> <wand: Larch (HawthornWandBehavior)> goes to dungeon
character:<Hermione Granger> <e: 0.0> <o: 20.0> <d: 35.0> <wand: Ivy (HawthornWandBehavior)> goes to dungeon

turn: <5>
characters who are going to duel:
----
character:<Rolf Scamander> <e: 0.1> <o: 20.0> <d: 25.0> <wand: Rowan (HollyWandBehavior)>
character:<Filius Flitwick> <e: 14.94> <o: 20.0> <d: 35.0> <wand: Pine (HawthornWandBehavior)>
character:<Neville Longbottom> <e: 19.5> <o: 20.0> <d: 25.0> <wand: Tamarack (HollyWandBehavior)>
character:<Albus Severus Potter> <e: 20.0> <o: 25.0> <d: 20.0> <wand: Pear (HawthornWandBehavior)>

duels:

<Rolf Scamander> is dueling against <Filius Flitwick>
attack points of <Rolf Scamander> are: <6.07>
resistance points of <Filius Flitwick> are: <18.95>
the remaining energy of <Filius Flitwick> after the duel are: <14.94>

<Rolf Scamander> is dueling against <Neville Longbottom>
attack points of <Rolf Scamander> are: <6.07>
resistance points of <Neville Longbottom> are: <45.05>
the remaining energy of <Neville Longbottom> after the duel are: <19.5>

<Rolf Scamander> is dueling against <Albus Severus Potter>
attack points of <Rolf Scamander> are: <6.07>
resistance points of <Albus Severus Potter> are: <20.0>
the remaining energy of <Albus Severus Potter> after the duel are: <20.0>

<Filius Flitwick> is dueling against <Neville Longbottom>
attack points of <Filius Flitwick> are: <36.96>
resistance points of <Neville Longbottom> are: <45.05>
the remaining energy of <Neville Longbottom> after the duel are: <19.5>

<Filius Flitwick> is dueling against <Albus Severus Potter>
attack points of <Filius Flitwick> are: <36.96>
resistance points of <Albus Severus Potter> are: <20.0>
the remaining energy of <Albus Severus Potter> after the duel are: <3.04>

<Filius Flitwick> is dueling against <Rolf Scamander>
attack points of <Filius Flitwick> are: <36.96>
resistance points of <Rolf Scamander> are: <27.59>
the remaining energy of <Rolf Scamander> after the duel are: <0.0>

<Neville Longbottom> is dueling against <Albus Severus Potter>
attack points of <Neville Longbottom> are: <19.65>
resistance points of <Albus Severus Potter> are: <6.43>
the remaining energy of <Albus Severus Potter> after the duel are: <0.0>

<Neville Longbottom> is dueling against <Rolf Scamander>
<Neville Longbottom> is dueling against <Filius Flitwick>
attack points of <Neville Longbottom> are: <19.65>
resistance points of <Filius Flitwick> are: <18.95>
the remaining energy of <Filius Flitwick> after the duel are: <14.24>

<Albus Severus Potter> is dueling against <Rolf Scamander>
<Albus Severus Potter> is dueling against <Filius Flitwick>
<Albus Severus Potter> is dueling against <Neville Longbottom>

duel results:
----
character:<Rolf Scamander> <e: 0.0> <o: 20.0> <d: 25.0> <wand: Rowan (HollyWandBehavior)> goes to dungeon
character:<Filius Flitwick> <e: 14.24> <o: 20.0> <d: 35.0> <wand: Pine (HawthornWandBehavior)> returns to the house
character:<Neville Longbottom> <e: 19.5> <o: 20.0> <d: 25.0> <wand: Tamarack (HollyWandBehavior)> returns to the house
character:<Albus Severus Potter> <e: 0.0> <o: 25.0> <d: 20.0> <wand: Pear (HawthornWandBehavior)> goes to dungeon

turn: <6>
characters who are going to duel:
----
character:<Cedric Diggory> <e: 6.5> <o: 20.0> <d: 35.0> <wand: Hazel (HawthornWandBehavior)>
character:<Neville Longbottom> <e: 19.5> <o: 20.0> <d: 25.0> <wand: Tamarack (HollyWandBehavior)>
character:<Draco Malfoy> <e: 20.0> <o: 20.0> <d: 25.0> <wand: Spruce (HawthornWandBehavior)>
character:<Quirinus Quirrell> <e: 20.0> <o: 25.0> <d: 20.0> <wand: Yew (HawthornWandBehavior)>

duels:

<Cedric Diggory> is dueling against <Neville Longbottom>
attack points of <Cedric Diggory> are: <31.9>
resistance points of <Neville Longbottom> are: <45.05>
the remaining energy of <Neville Longbottom> after the duel are: <19.5>

<Cedric Diggory> is dueling against <Draco Malfoy>
attack points of <Cedric Diggory> are: <31.9>
resistance points of <Draco Malfoy> are: <21.0>
the remaining energy of <Draco Malfoy> after the duel are: <9.1>

<Cedric Diggory> is dueling against <Quirinus Quirrell>
attack points of <Cedric Diggory> are: <31.9>

resistance points of <Quirinus Quirrell> are: <20.0>
the remaining energy of <Quirinus Quirrell> after the duel are: <8.1>

<Neville Longbottom> is dueling against <Draco Malfoy>
attack points of <Neville Longbottom> are: <19.65>
resistance points of <Draco Malfoy> are: <12.28>
the remaining energy of <Draco Malfoy> after the duel are: <1.73>

<Neville Longbottom> is dueling against <Quirinus Quirrell>
attack points of <Neville Longbottom> are: <19.65>
resistance points of <Quirinus Quirrell> are: <10.48>
the remaining energy of <Quirinus Quirrell> after the duel are: <0.0>

<Neville Longbottom> is dueling against <Cedric Diggory>
attack points of <Neville Longbottom> are: <19.65>
resistance points of <Cedric Diggory> are: <12.2>
the remaining energy of <Cedric Diggory> after the duel are: <0.0>

<Draco Malfoy> is dueling against <Quirinus Quirrell>
<Draco Malfoy> is dueling against <Cedric Diggory>
<Draco Malfoy> is dueling against <Neville Longbottom>
attack points of <Draco Malfoy> are: <29.04>
resistance points of <Neville Longbottom> are: <45.05>
the remaining energy of <Neville Longbottom> after the duel are: <19.5>

<Quirinus Quirrell> is dueling against <Cedric Diggory>
<Quirinus Quirrell> is dueling against <Neville Longbottom>
<Quirinus Quirrell> is dueling against <Draco Malfoy>

duel results:
----
character:<Cedric Diggory> <e: 0.0> <o: 20.0> <d: 35.0> <wand: Hazel (HawthornWandBehavior)> goes to dungeon
character:<Neville Longbottom> <e: 19.5> <o: 20.0> <d: 25.0> <wand: Tamarack (HollyWandBehavior)> returns to the house
character:<Draco Malfoy> <e: 1.73> <o: 20.0> <d: 25.0> <wand: Spruce (HawthornWandBehavior)> returns to the house
character:<Quirinus Quirrell> <e: 0.0> <o: 25.0> <d: 20.0> <wand: Yew (HawthornWandBehavior)> goes to dungeon

turn: <7>
characters who are going to duel:
----
character:<Draco Malfoy> <e: 1.73> <o: 20.0> <d: 25.0> <wand: Spruce (HawthornWandBehavior)>
character:<Filius Flitwick> <e: 14.24> <o: 20.0> <d: 35.0> <wand: Pine (HawthornWandBehavior)>
character:<Neville Longbottom> <e: 19.5> <o: 20.0> <d: 25.0> <wand: Tamarack (HollyWandBehavior)>

duels:

<Draco Malfoy> is dueling against <Filius Flitwick>
attack points of <Draco Malfoy> are: <29.04>
resistance points of <Filius Flitwick> are: <18.39>
the remaining energy of <Filius Flitwick> after the duel are: <3.59>

<Draco Malfoy> is dueling against <Neville Longbottom>
attack points of <Draco Malfoy> are: <29.04>
resistance points of <Neville Longbottom> are: <45.05>
the remaining energy of <Neville Longbottom> after the duel are: <19.5>

<Filius Flitwick> is dueling against <Neville Longbottom>
attack points of <Filius Flitwick> are: <30.15>
resistance points of <Neville Longbottom> are: <45.05>
the remaining energy of <Neville Longbottom> after the duel are: <19.5>

<Filius Flitwick> is dueling against <Draco Malfoy>
attack points of <Filius Flitwick> are: <30.15>
resistance points of <Draco Malfoy> are: <6.38>
the remaining energy of <Draco Malfoy> after the duel are: <0.0>

<Neville Longbottom> is dueling against <Draco Malfoy>
<Neville Longbottom> is dueling against <Filius Flitwick>
attack points of <Neville Longbottom> are: <19.65>
resistance points of <Filius Flitwick> are: <9.87>
the remaining energy of <Filius Flitwick> after the duel are: <0.0>

duel results:
----
character:<Draco Malfoy> <e: 0.0> <o: 20.0> <d: 25.0> <wand: Spruce (HawthornWandBehavior)> goes to dungeon
character:<Filius Flitwick> <e: 0.0> <o: 20.0> <d: 35.0> <wand: Pine (HawthornWandBehavior)> goes to dungeon
character:<Neville Longbottom> <e: 19.5> <o: 20.0> <d: 25.0> <wand: Tamarack (HollyWandBehavior)> returns to the house

end of the simulation:
----
houses:
----
house:<GryffindorHouse>
character:<Neville Longbottom> <e: 19.5> <o: 20.0> <d: 25.0> <wand: Tamarack (HollyWandBehavior)>

house:<Slytherin>

house:<Hufflepuff>

house:<RavenclawHouse>

new wands:
----
dungeon characters:
----

character:<Pansy Parkinson> <e: 0.0> <o: 32.5> <d: 20.0> <wand: PansyW (HawthornWandBehavior)>
character:<Luna Lovegood> <e: 0.0> <o: 20.0> <d: 35.0> <wand: LunaW (HawthornWandBehavior)>
character:<Harry Potter> <e: 0.0> <o: 32.5> <d: 28.0> <wand: HarryW (HawthornWandBehavior)>
character:<Nymphadora Tonks> <e: 0.0> <o: 20.0> <d: 25.0> <wand: NymphadoraW (HawthornWandBehavior)>

character:<Ron Weasley> <e: 0.0> <o: 26.0> <d: 25.0> <wand: RonW (HawthornWandBehavior)>
character:<Pomona Sprout> <e: 0.0> <o: 32.5> <d: 20.0> <wand: PomonaW (HawthornWandBehavior)>
character:<Hermione Granger> <e: 0.0> <o: 20.0> <d: 35.0> <wand: Ivy (HawthornWandBehavior)>
character:<Dolores Umbridge> <e: 0.0> <o: 25.0> <d: 20.0> <wand: Laurel (HawthornWandBehavior)>
character:<Cho Chang> <e: 0.0> <o: 32.5> <d: 20.0> <wand: Larch (HawthornWandBehavior)>
character:<Albus Severus Potter> <e: 0.0> <o: 25.0> <d: 20.0> <wand: Pear (HawthornWandBehavior)>
character:<Rolf Scamander> <e: 0.0> <o: 20.0> <d: 25.0> <wand: Rowan (HollyWandBehavior)>
character:<Cedric Diggory> <e: 0.0> <o: 20.0> <d: 35.0> <wand: Hazel (HawthornWandBehavior)>
character:<Quirinus Quirrell> <e: 0.0> <o: 25.0> <d: 20.0> <wand: Yew (HawthornWandBehavior)>
character:<Draco Malfoy> <e: 0.0> <o: 20.0> <d: 25.0> <wand: Spruce (HawthornWandBehavior)>
character:<Filius Flitwick> <e: 0.0> <o: 20.0> <d: 35.0> <wand: Pine (HawthornWandBehavior)>

the winner house is:
----
house:<GryffindorHouse>
character:<Neville Longbottom> <e: 19.5> <o: 20.0> <d: 25.0> <wand: Tamarack (HollyWandBehavior)>