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Started on Friday, 16 May 2025, 2:19 PM

State Finished

Completed on Friday, 16 May 2025, 4:46 PM

Time taken 2 hours 26 mins

Grade 300.00 out of 300.00 (100%)

6/22/25, 4:28 PM Praktikum 4 (Latihan)

Question 1

Correct

Mark 100.00 out of 100.00

| Time limit | 1 s |
|--------------|-------|
| Memory limit | 64 MB |

Purry Levelling (Lagi ?!?!?)

Setelah berhasil menyelesaikan tugas besar pertama dengan membuat game *Purry Levelling* dalam bahasa C++, kini Anda akan beralih ke tugas berikutnya menggunakan bahasa pemrograman Java. Implementasikan kelas-kelas berikut dengan menerapkan konsep *inheritance* dan *interface* sederhana.

Spesifikasi

Interface Damageable

Memiliki satu method abstrak:

```
void takeDamage(int damage);
```

Interface Interactable

Memiliki satu method abstrak:

```
void interact();
```

Kelas abstrak Unit

- Atribut: name (String), health (int)
- Constructor: Unit(String name, int health)
- **Getter / Setter**: getName(), setName(String), getHealth(), setHealth(int)
- Method abstrak: String toString();

Kelas Character (subclass Unit, mengimplementasikan Damageable)

- Atribut tambahan: score (int, default 0)
- Constructors:
 - Default: Character() → name="Player1", health=100, score=0
 - User-defined: Character(String name, int health, int score)
- Method tambahan:
 - Getter / Setter: getScore(), setScore(int)
 - takeDamage(int) mengurangi health; jika ≤ 0, cetak {name} has been defeated
 - increaseScore(int points) menambah score
- Override toString(): {name} [Health: {health}, Score: {score}]

Kelas NPC (subclass Unit, mengimplementasikan Interactable)

- Atribut tambahan: dialogue (String, default "Hello there!")
- Constructors:
 - $\circ \ \textit{Default} : \texttt{NPC()} \to \texttt{name="NPC1"}, \ \texttt{health=100}, \ \texttt{dialogue="Hello there!"}$
 - User-defined: NPC(String name, int health, String dialogue)
- Method tambahan:
 - Getter / Setter: getDialogue(), setDialogue(String)
 - interact() mencetak dialogue
- Override toString():

```
{name} [Health: {health}, Dialogue: "{dialogue}"]
```

Contoh Penggunaan

```
public class Main {
    public static void main(String[] args) {
        Character p1 = new Character();
        Character p2 = new Character("Alice", 50, 120);

        System.out.println(p1);
        System.out.println(p2);

        p2.takeDamage(30);
        p2.increaseScore(20);
        System.out.println(p2);

        p2.takeDamage(100);

        NPC npc = new NPC("Gandalf", 200, "You shall not pass!");
        System.out.println(npc);
        npc.interact();
    }
}
```

Output yang diharapkan

```
Player1 [Health: 100, Score: 0]
Alice [Health: 50, Score: 120]
Alice [Health: 20, Score: 140]
Alice has been defeated
Gandalf [Health: 200, Dialogue: You shall not pass!]
You shall not pass!
```

Pengumpulan

Kumpulkan berkas-berkas berikut dalam satu berkas .zip bernama PurryLevellingV2.zip:

- Damageable.java
- Interactable.java
- Unit.java
- Character.java
- NPC.java

Java 8 ♦

PurryLevellingV2.zip

Score: 100

Blackbox

Score: 100

Verdict: Accepted

Evaluator: Exact

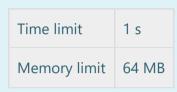
| Score | Verdict | Description |
|-------|----------------------------------|---|
| 10 | Accepted | 0.10 sec, 28.39 MB |
| 10 | Accepted | 0.07 sec, 29.06 MB |
| 10 | Accepted | 0.08 sec, 28.74 MB |
| 10 | Accepted | 0.09 sec, 28.31 MB |
| 10 | Accepted | 0.09 sec, 28.00 MB |
| 10 | Accepted | 0.10 sec, 27.84 MB |
| 10 | Accepted | 0.07 sec, 27.88 MB |
| 10 | Accepted | 0.07 sec, 28.85 MB |
| | 10 10 10 10 10 10 | 10 Accepted |

| No | Score | Verdict | Description |
|----|-------|----------|--------------------|
| 9 | 10 | Accepted | 0.06 sec, 28.94 MB |
| 10 | 10 | Accepted | 0.07 sec, 28.31 MB |

Question **2**

Correct

Mark 100.00 out of 100.00



Find My

Pak Asep kehilangan di kantor pusat (HQ) O.W.C.A, bantu Pak Asep untuk mengimplementasikan hape beliau dengan file bernama **IPhone.java**, diberikan juga interface **Trackable.java** dan **Device.java** yang masing-masing merupakan interface dan kelas abstrak dari **IPhone.java**, nama dari kelas iPhone tentunya "**IPhone**" tanpa tanda petik.

Berikut templatenya <u>IPhone.java</u>. Kumpulkan IPhone.javanya saja

Java 8 ♦

IPhone.java

Score: 100

Blackbox

Score: 100

Verdict: Accepted Evaluator: Exact

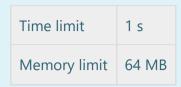
| No | Score | Verdict | Description |
|----|-------|----------|--------------------|
| 1 | 12.5 | Accepted | 0.06 sec, 28.16 MB |
| 2 | 12.5 | Accepted | 0.06 sec, 26.16 MB |
| 3 | 12.5 | Accepted | 0.07 sec, 28.76 MB |
| 4 | 12.5 | Accepted | 0.06 sec, 28.96 MB |
| 5 | 12.5 | Accepted | 0.06 sec, 28.79 MB |
| 6 | 12.5 | Accepted | 0.07 sec, 28.92 MB |
| 7 | 12.5 | Accepted | 0.06 sec, 28.09 MB |
| 8 | 12.5 | Accepted | 0.06 sec, 28.20 MB |

6/22/25, 4:28 PM Praktikum 4 (Latihan)

Question **3**

Correct

Mark 100.00 out of 100.00



Implementasikan kelas **SmartDoorLock** yang akan menjadi bagian dari sistem rumah pintar. Kelas ini harus menggunakan *inheritance* dan *interface* yang telah disediakan.

Sistem ini menggunakan beberapa komponen:

- 1. Controllable. java Interface yang mendefinisikan kemampuan perangkat untuk dikendalikan (dihidupkan/dimatikan)
- 2. <u>EnergyMonitored.java</u> Interface untuk memantau konsumsi energi perangkat
- 3. <u>SecureDevice.java</u> Interface yang mendefinisikan fitur keamanan perangkat
- 4. <u>SmartDevice.java</u> Kelas abstrak dasar untuk semua perangkat pintar
- 5. <u>SecurityDevice.java</u> Kelas abstrak untuk perangkat keamanan

Anda harus mengimplementasikan kelas SmartDoorLock yang mewarisi SecurityDevice dan mengimplementasikan EnergyMonitored.

Kumpulkan **SmartDoorLock.java** (ini ada templatenya)

Java 8 ♦

SmartDoorLock.java

Score: 100

Blackbox

Score: 100

Verdict: Accepted Evaluator: Exact

| No | Score | Verdict | Description |
|----|-------|----------|--------------------|
| 1 | 30 | Accepted | 0.07 sec, 28.80 MB |
| 2 | 30 | Accepted | 0.06 sec, 28.41 MB |
| 3 | 10 | Accepted | 0.06 sec, 28.50 MB |
| 4 | 10 | Accepted | 0.06 sec, 26.17 MB |
| 5 | 10 | Accepted | 0.06 sec, 29.13 MB |
| 6 | 10 | Accepted | 0.06 sec, 27.98 MB |

→ Praktikum 4

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