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|---------------------|---|
| Started on | Wednesday, 14 May 2025, 9:21 AM |
| State | Finished |
| Completed on | Wednesday, 14 May 2025, 9:44 AM |
| Time taken | 23 mins 46 secs |
| Grade | 300.00 out of 300.00 (100%) |

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:**
 - *Default:* `NPC()` → `name="NPC1"`, `health=100`, `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

| No | Score | Verdict | Description |
|----|-------|----------|--------------------|
| 1 | 10 | Accepted | 0.35 sec, 28.16 MB |
| 2 | 10 | Accepted | 0.32 sec, 28.39 MB |
| 3 | 10 | Accepted | 0.25 sec, 28.42 MB |
| 4 | 10 | Accepted | 0.31 sec, 27.94 MB |
| 5 | 10 | Accepted | 0.28 sec, 30.93 MB |
| 6 | 10 | Accepted | 0.09 sec, 27.80 MB |
| 7 | 10 | Accepted | 0.10 sec, 28.37 MB |
| 8 | 10 | Accepted | 0.11 sec, 27.80 MB |

| No | Score | Verdict | Description |
|----|-------|----------|--------------------|
| 9 | 10 | Accepted | 0.09 sec, 28.16 MB |
| 10 | 10 | Accepted | 0.24 sec, 28.02 MB |

Question **2**

Correct

Mark 100.00 out of 100.00

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

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 templatennya [IPhone.java](#). 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 | 0.37 sec, 28.55 MB |
| 2 | 12.5 | Accepted | 0.42 sec, 28.43 MB |
| 3 | 12.5 | Accepted | 0.42 sec, 28.48 MB |
| 4 | 12.5 | Accepted | 0.51 sec, 29.82 MB |
| 5 | 12.5 | Accepted | 0.40 sec, 29.88 MB |
| 6 | 12.5 | Accepted | 0.20 sec, 27.93 MB |
| 7 | 12.5 | Accepted | 0.54 sec, 28.77 MB |
| 8 | 12.5 | Accepted | 0.49 sec, 27.82 MB |

Question **3**

Correct

Mark 100.00 out of 100.00

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

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. [EnergyMonitored.java](#) - Interface untuk memantau konsumsi energi perangkat
3. [SecureDevice.java](#) - Interface yang mendefinisikan fitur keamanan perangkat
4. [SmartDevice.java](#) - Kelas abstrak dasar untuk semua perangkat pintar
5. [SecurityDevice.java](#) - Kelas abstrak untuk perangkat keamanan

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

Kumpulkan [SmartDoorLock.java](#) (ini ada templatennya)

Java 8

 [SmartDoorLock.java](#)

Score: 100

Blackbox

Score: 100

Verdict: Accepted

Evaluator: Exact

| No | Score | Verdict | Description |
|----|-------|----------|--------------------|
| 1 | 30 | Accepted | 0.06 sec, 29.06 MB |
| 2 | 30 | Accepted | 0.06 sec, 27.82 MB |
| 3 | 10 | Accepted | 0.06 sec, 27.95 MB |
| 4 | 10 | Accepted | 0.06 sec, 30.96 MB |
| 5 | 10 | Accepted | 0.06 sec, 27.94 MB |
| 6 | 10 | Accepted | 0.06 sec, 27.82 MB |

[◀ Praktikum 4](#)

Jump to...

[Tutorial 5 ▶](#)