

ITB_IF2010_2_2425 Pemrograman Berorientasi Objek

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Started on Wednesday, 14 May 2025, 1:29 PM
State Finished
Completed on Wednesday, 14 May 2025, 2:31 PM
Time taken 1 hour 1 min
Grade 300.00 out of 300.00 (100%)

Question 1
 Correct
 Mark 100.00 out of 100.00
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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

Quiz navigation

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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	0.06 sec, 28.36 MB
2	10	Accepted	0.06 sec, 28.66 MB
3	10	Accepted	0.06 sec, 28.88 MB
4	10	Accepted	0.06 sec, 28.74 MB
5	10	Accepted	0.06 sec, 28.85 MB
6	10	Accepted	0.06 sec, 28.71 MB
7	10	Accepted	0.06 sec, 27.77 MB
8	10	Accepted	0.06 sec, 28.01 MB
9	10	Accepted	0.06 sec, 29.82 MB
10	10	Accepted	0.06 sec, 28.00 MB

Question 2

Correct

Mark 100.00 out
of 100.00

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question

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 templatenya **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	0.06 sec, 28.48 MB
2	12.5	Accepted	0.06 sec, 28.24 MB
3	12.5	Accepted	0.06 sec, 30.51 MB
4	12.5	Accepted	0.06 sec, 28.15 MB
5	12.5	Accepted	0.06 sec, 28.24 MB
6	12.5	Accepted	0.06 sec, 30.41 MB
7	12.5	Accepted	0.06 sec, 27.97 MB
8	12.5	Accepted	0.05 sec, 28.77 MB

Question 3

Correct

Mark 100.00 out
of 100.00

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question

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 memerlukan 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 templatnya)

Java 8 ▾

 SmartDoorLock.java

Score: 100

Blackbox

Score: 100

Verdict: Accepted

Evaluator: Exact

No	Score	Verdict	Description
1	30	Accepted	0.11 sec, 28.28 MB
2	30	Accepted	0.34 sec, 28.18 MB
3	10	Accepted	0.73 sec, 28.93 MB
4	10	Accepted	0.72 sec, 29.88 MB
5	10	Accepted	0.53 sec, 28.41 MB
6	10	Accepted	0.17 sec, 27.84 MB

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◀ Praktikum 4

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