|  |  |
| --- | --- |
| **Assignment Case** |  |
| COMP6708016 Object Oriented Programming |
| **Computer Science** | **E223-COMP6708016-JF03-01** |
| ***Valid on*** *Even Semester Year 2021/2022* | **Revision 00** |

## Soal

*Case*

**Gandam**

**Gandam** is a Japanese TV series franchise that features giant robots, with the name “**Gandam**”. The series hits its peak popularity on the 90s to early 2000s. Following their success, they plan to create a video game. You are hired as a game developer to create a simulation of Gandam creation using **Java Programming Language** with **Object Oriented Programming concepts** such as **Encapsulation**, **Composition**, and **Aggregation**. The requirements for the game simulation are listed below:

Text

Description automatically generated

**Figure 1. Menu**

1. **Assemble new Gandam (Menu 1)**

* When user choose this menu, the program will ask user to input Gandam name. **Validate** the Gandam name must be **between** **5 – 20 characters** (**inclusive**).

**Text

Description automatically generated with low confidence**

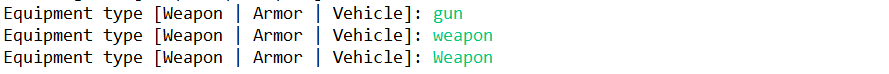
**Figure 2. Input Gandam Name**

* After that, the user will choose the Gandam grade. **Validate** Gandam grade must be either “**SD**”, “**HG**”, “**MG**”, or “**PG**” (**case** **sensitive**).

****

**Figure 3. Input Gandam Grade**

* Lastly, the user will choose the equipment for their Gandam. User must choose between “**Weapon**”, “**Armor**”, or “**Vehicle**” (**case** **sensitive**). Each of the equipment type will have their own respective **equipment bonus.**

****

**Figure 4. Input Equipment Type**

|  |  |
| --- | --- |
| Equipment Type | Equipment Bonus |
| Weapon | + 20 Attack |
| Armor | + 15 Defense |
| Vehicle | + 30 Speed |

* After finishing all the inputs, the program will **generate** an **ID** for the equipment. The ID must satisfy the following format:

**EQXXX**

X = Random number between 0 – 9

Example: EQ412

* Then, **insert** the **Gandam** and **Equipment** to a **list**.

1. **View Gandam Collection (Menu 2)**

* When user choose this menu, **validate** if the list is **empty, show error message**.

****

**Figure 5. Error Message**

* Else, show all Gandam and their equipments in the list.

**A picture containing table

Description automatically generated**

**Figure 6. Gandam Collection**

1. **Disassemble Gandam (Menu 3)**

* When user choose this menu, **validate** if the list is **empty, show error message**.
* However if the list is **not empty**, user must choose **which Gandam to remove** from the list. **Validate** the chosen number must be **between 1** and **the total amount of Gandam in the list.** When a Gandam is removed from the list, their respective **equipment** **will also be removed**.

**A picture containing diagram

Description automatically generated**

**Figure 7. Choose Gandam to Remove**

**Table

Description automatically generated**

**Figure 8. Gandam Collection after Deletion**

1. **Exit (Menu 4)**

* When user choose this menu, **exit the program**.

**If you need any assistance, kindly ask your assistants for help.**