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| **Assignment Case** |  |
| COMP6708016 Object Oriented Programming |
| **Computer Science** | **E223-COMP6708016-DJ04-02** |
| ***Valid on*** *Even Semester Year 2021/2022* | **Revision 00** |

## Soal

*Case*

**Toy’s Manager**

Toy’s Manager is a simple program for Toys Shop. The shop owner really need an application to help with his sales. You are hired as a developer to create the program using **Java Programming Language** with **Object Oriented Programming** concepts such as **Encapsulation**, **Inheritance**, and **Polymorphism**. The requirements for the application are listed below:

* The program consists of 4 menus:

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**Figure 1. Menu**

1. **View Toys (Menu 1)**

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

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**Figure 2. Error Message**

* Else, show all Toys and their attributes in the list.

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**Figure 3. Toys Collection**

1. **Insert Toy (Menu 2)**

* When user choose this menu, the program will ask user to input **name**. **Validate** the **name** must be **between** **5 – 10 characters** (**inclusive**).

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**Figure 4. Input Toy Name**

* After that, the user will input the **recommended** **age** for the toy. **Validate** **recommended** **age** must be **between** **1 – 20** (**inclusive**).

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**Figure 5. Input Recommended Age**

* Then, the user will choose the **type** of the toys. **Validate** the user must be **either “Gundam” or “Statue”** for the type (**case sensitive**).

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**Figure 6. Input Type of the Toys**

* If the inputted type was **Statue**, the user will be choosing the material for the **Statue**. **Validate** the user must be either “**PVC**” or “**Resin**” for the material (**case sensitive**).

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**Figure 7. Input Material for Statue**

* Otherwise, if the inputted type was **Gundam**, the user will be choosing the **detail** **level** for the Gundam. Validate the user must be **either** “**SD**”, “**HG**”, “**RG**”, “**MG**”, or “**PG**” (**case sensitive**).

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**Figure 8. Input Detail Level for Gundam**

* Then, the program will **calculate** **Price** by using following conditions:

|  |  |  |
| --- | --- | --- |
| Toy Type | Material/DetailLevel | Price |
| Statue | PVC | **1000000 +** **recommendedAge \* 300000** |
| Statue | Resin | **5000000 + recommendedAge \* 300000** |
| Gundam | SD, HG, RG | **100000 + recommendedAge \* 30000** |
| Gundam | MG, PG | **500000 + recommendedAge \* 30000** |

* Then, **insert** the **Toy** to a **list (ArrayList / Vector / Array)** and return to **main** **menu**.

1. **Delete Toy (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 Toy to remove** from the list. **Validate** the chosen number must be **between 1** and **total toy data in the list.**

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**Figure 9. Choose Toy to Remove**

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**Figure 10. Toy List 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.**