**Clock System - Tasks**

The Clock system models a timer and multiple clocks. This system is for training purposes only.

* **Check implemented features**

Select each implemented feature for the move time functionality:

|  |  |
| --- | --- |
|  | Sets hour to zero if hour is 24. |
|  | Shows milliseconds. |
|  | Represent a second passing time by sleeping the thread a second. |
|  | Clocks states are updated in every new second. |
|  | Move time functionality increments timer. |
|  | Option to reset time. |

* **Sort execution flow**

For the move time functionality, we ask you to sort the given list of steps to reflect the execution flow written in the source code. Fill in the first column with the appropriate order number when applicable.

**Note:** have in mind that there might be some incoherent step order purposely introduced in the code to avoid you finding a correct answer without reading the source code and just following your common sense.

|  |  |
| --- | --- |
| Order | Steps involved in borrow library item system functionality. |
|  | Create a analog clock. |
|  | Adds clock a a list. |
|  | Each clock state gets updated. |
|  | Create a digital clock. |
|  | Increments timer one second. |
|  | Sleeps one second. |

* **Look for changed and unchanged objects**

Fill in the table adding the number of objects for the given types and write yes or no whether those objects change state during the execution of the system functionality that moves time triggered in main.k at line 8.

|  |  |  |
| --- | --- | --- |
| Object’s type | Number of objects | Change |
| Clocktimer |  |  |
| Clock |  |  |

* **Describing objects interactions**

Describe the interaction between objects by filling in the following matrix. Write a cross when there exists an interaction initiated by object named in row requesting service from object named in column for the move time system functionality. Between brackets is the file and line number for the objects of interest, just follow each specific object to discover its interactions.

|  |  |  |  |
| --- | --- | --- | --- |
| DCI | [main.k line 3]  new Clocktimer() | [main.k line 3]  new DigitalClock() | [main.k line 4]  new AnalogClock() |
| [main.k line 3]  new Clocktimer() | n/a |  |  |
| [main.k line 3]  new DigitalClock() |  | n/a |  |
| [main.k line 4]  new AnalogClock() |  |  | n/a |

**Product sales system - Tasks**

The Product sales system models an hypothetical situation of a food shortage.

* **Check implemented features**

Select each feature the food shortage system functionality (triggered in main.k at line 9) implements:

|  |  |
| --- | --- |
|  | Person acquires a product. |
|  | Store sells products. |
|  | Get name of a product. |
|  | Person to string. |
|  | Person acquires all products. |
|  | Store raises product price. |

* **Sort execution flow**

The food shortage system functionality (triggered in main.k at line 9) models a hypothetical situation. We ask you to sort the given list of steps to reflect the execution flow written in the source code. Fill in the first column with the appropriate order number when applicable.

**Note:** have in mind that there might be some incoherent step order purposely introduced in the code to avoid you finding a correct answer without reading the source code and just following your common sense.

|  |  |
| --- | --- |
| Order | Steps involved in food shortage system functionality. |
|  | The store removes a product. |
|  | The store adds a product. |
|  | The person acquires a product. |
|  | The store gives the person the number of available products in the store. |
|  | The system prints store’s state. |
|  | The store gets a product from stock. |
|  | The system prints person’s state. |

* **Look for changed and unchanged objects**

Fill in the table adding the number of objects for the given types and write yes or no whether those objects change state during the execution of the acquire-all-products functionality that starts in main.k at line 9.

|  |  |  |
| --- | --- | --- |
| Object’s type | Number of objects | Change |
| Person |  |  |
| List<Product> |  |  |
| Product |  |  |

* **Describe objects interactions**

Describe the interaction between objects by filling in the following matrix. Write a cross when there exists an interaction initiated by object named in row requesting service from object named in column for system functionality food shortage (triggered in main.k at line 9). Between brackets is the file and line number where the object is created, just follow each specific object to discover its interactions.

|  |  |  |
| --- | --- | --- |
|  | [main.k line 2]  **new Person()** | [main.k line 3]  **new List<Product>()** |
| [main.k line 2]  **new Person()** | n/a |  |
| [main.k line 3]  **new List<Product>()** |  | n/a |