The Marine Check Maintenance company manages maintenance scheduling for ships docked at the port. Through an online portal, captains can enter their ship's identifier, captain's ID, ship type, fuel type, and maintenance type to ensure compliance with the system's validation rules. If all details are correct, the system confirms the booking, allowing captains to efficiently schedule their ship's maintenance while at the port.

You need to design a Java program that collects ship details and retrieves maintenance booking information, with exception handling to manage various error scenarios.

**Component Specification: Class - ShipMaintenanceSystem**

|  |  |
| --- | --- |
| **Type (Method)** | **Responsibilities** |
| public String **validateMaintenanceDetails**(String shipId, String captainId, String shipType, String fuelType, String maintenanceType) | This method takes five arguments: shipId, captainId, shipType, fuelType and maintenanceType and it validates each according to the rules specified below. If all details are valid, return "**Validation successful**" (**Case-sensitive**); otherwise, throw **InvalidMaintenanceDetailsException** with an appropriate message.  **Validation Rules:**   * The shipId should start with three uppercase letters followed by a hyphen and four digits. Example: CAT-1234. If not, throw an exception with the message "**Invalid Ship ID**". * The captainId should start with two uppercase letters followed by five digits. Example: CA12345. If not, throw an exception with the message "**Invalid Captain ID**". * The shipType should be either "**Destroyer**", "**Submarine**", or "**Carrier**" (case-sensitive). If not, throw an exception with the message "**Invalid Ship type**". * The fuelType should be either "**Diesel**", "**Nuclear**", or " **Electric**" (case-sensitive). If not, throw an exception with the message "**Invalid Fuel type**". * The maintenanceType should be either "**Routine**", "**Emergency**", or "**Upgrade**" (case-sensitive). If not, throw an exception with the message "**Invalid Maintenance type**". |
| public String **getBookingConfirmation**() | This method returns a message: "**Your maintenance booking is confirmed**". |

**Component Specification: InvalidMaintenanceDetailsException (This class inherits the Exception Class)**

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| --- | --- |
| **Type (Class)** | **Responsibilities** |
| InvalidMaintenanceDetailsException | Provided with a single-argument constructor: public **InvalidMaintenanceDetailsException**(String message). Thrown when shipId, captainId, shipType, fuelType , maintenanceType does not follow the validation rules. |

**Component Specification: UserInterface**

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| --- | --- |
| **Type (Class)** | **Responsibilities** |
| UserInterface | In the main method, get the shipId, captainId, shipType, fuelType and maintenanceType from the user. Invoke **validateMaintenanceDetails**, and if valid, invoke the **getBookingConfirmation** method and display the message. If the validation is invalid, handle the exception appropriately. |

**Note**:

* Ensure to follow the object-oriented specifications provided in the question description.
* Ensure to provide the names for classes, attributes, and methods as specified in the question description.
* Adhere to the code template, if provided.
* **Please don't use System.exit(0) to terminate the program.**

**Sample Input / Output 1**

Enter Ship ID

**SHI-1234**

Enter Captain ID

**SH12345**

Enter Ship Type

**Carrier**

Enter Fuel Type

**Diesel**

Enter Maintenance Type

**Routine**

Your maintenance booking is confirmed

**Sample Input / Output 2**

Enter Ship ID

**CAT1234**

Enter Captain ID

**CA12345**

Enter Ship Type

**Carrier**

Enter Fuel Type

**Diesel**

Enter Maintenance Type

**Routine**

Invalid Ship ID

**Sample Input / Output 3**

Enter Ship ID

**CAT-1234**

Enter Captain ID

**C12345**

Enter Ship Type

**Carrier**

Enter Fuel Type

**Diesel**

Enter Maintenance Type

**Routine**

Invalid Captain ID

**Sample Input / Output 4**

Enter Ship ID

**CAT-1234**

Enter Captain ID

**CA12345**

Enter Ship Type

**Cruiser**

Enter Fuel Type

**Diesel**

Enter Maintenance Type

**Routine**

Invalid Ship type

**Sample Input / Output 5**

Enter Ship ID

**CAT-1234**

Enter Captain ID

**CA12345**

Enter Ship Type

**Carrier**

Enter Fuel Type

**Gasoline**

Enter Maintenance Type

**Routine**

Invalid Fuel type

**Sample Input / Output 6**

Enter Ship ID

**CAT-1234**

Enter Captain ID

**CA12345**

Enter Ship Type

**Carrier**

Enter Fuel Type

**Diesel**

Enter Maintenance Type

**Cleaning**

Invalid Maintenance type