1. Sound Sphere is a earphone management platform designed to provide detailed information about each earphone, including brand, release date, price, and rating. The platform offers various functionalities using Java streams to enhance user experience.

Create a Java application that uses streams to perform the same task.

**Requirements:**

1.      Retrieve earphones by a specified brand name.

2.      Retrieve earphones within a specified price range.

**Component Specification: Earphone (POJO Class)**

|  |  |  |
| --- | --- | --- |
| **Type(Class)** | **Attributes** | **Methods** |
| **Earphone** | String brandName  LocalDate releaseDate  double price  double rating | Getters and setters, toString, no-argument, and four-argument constructors are given in the code skeleton. |

**Component Specification: EarphoneUtil (Utility class)**

|  |  |  |
| --- | --- | --- |
| **Type (**Class) | **Methods** | **Responsibilities** |
| **EarphoneUtil** | public Stream<Earphone> **getEarphonesByBrandName**(Stream<Earphone> earphoneStream, String brandName) | This method takes a stream of Earphone objects and a brandName as input parameters. It filters the earphones from the provided stream by the specified brandName and returns a stream of the filtered earphone objects. |
| **EarphoneUtil** | public List<Earphone> **getEarphonesWithinPriceRange**(Stream<Earphone> earphoneStream, double minimumPrice, double maximumPrice) | This method takes a stream of Earphone objects, minimumPrice and maximumPrice as input parameters. It filters the earphones from the provided stream to find those whose prices fall within the specified range and returns a list of these earphones.  **Condition**:   * Both minimumPrice and maximumPrice are inclusive. |

In the UserInterface class, the main method gets the total number of earphones and their details from the user, creates Earphone objects, stores them in a list, and performs various operations based on user input.

Get the brand name from the user. Invoke the **getEarphonesByBrandName**() method to filter earphones by the specified brand. If earphones are found, display them using the **toString**() method. If no earphones are found, print "**No earphones found for the brand <brandName>**".

Get the minimum and maximum price range from the user. Invoke the **getEarphonesWithinPriceRange**() method to retrieve earphones within the specified price range. If earphones are found, display them using the toString() method. If no earphones are found, print "**No earphones found within the price range <minimumPrice> to <maximumPrice>**".

**Assumptions**

* The number of earphones needed to be entered into the list is always a valid positive number.
* The earphone details provided by the user are always valid.
* The specified price range entered by the user for filtering earphones is a valid positive number.
* The brand name specified by the user for filtering earphones is a valid name.

**Note:**

* In the sample input / output provided, the highlighted text in bold corresponds to the input given by the user, and the rest of the text represents the output.
* 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.
* **Do not use System.exit(0) to terminate the code.**

**Sample Input / Output 1**

Enter the number of earphones

**5**

Enter the earphone details

**LG:2023-01-01:15000.00:4.5**

**Panasonic:2022-06-15:12500.00:4.7**

**JBL:2021-12-25:10000.00:4.3**

**Panasonic:2023-06-18:13000.00:4.8**

**Boat:2022-12-10:12500.00:4.6**

Enter the brand name

**Panasonic**

Earphones by brand Panasonic are

Panasonic|2022-06-15|12500.0|4.7

Panasonic|2023-06-18|13000.0|4.8

Enter the minimum and maximum price range

**12500**

**15000**

Earphones within the price range 12500.0 to 15000.0 are

LG|2023-01-01|15000.0|4.5

Panasonic|2022-06-15|12500.0|4.7

Panasonic|2023-06-18|13000.0|4.8

Boat|2022-12-10|12500.0|4.6

**Sample Input / Output 2**

Enter the number of earphones

**2**

Enter the earphone details

**Boat:2023-02-10:11800.00:4.2**

**Apple:2022-08-20:12200.00:4.4**

Enter the brand name

**LG**

No earphones found for the brand LG

Enter the minimum and maximum price range

**13500**

**15000**

No earphones found within the price range 13500.0 to 15000.0