1. Write a Java program to iterate through all elements in a hash list.

2. Write a Java program to clone a hash set to another hash set.

3. Write a Java program to compare two sets and retain elements that are the same.

4. Write a method that takes a List<Double> and returns the sum of its elements, demonstrating auto boxing and unboxing.

5. Write a program to read a list of integers from the console until a non-integer input is entered. Use the Scanner class.

6. Implement a Java program to manage a product database using JDBC. The program should be able to connect to a MySQL database

insert new products, update product details, delete products, and retrieve product information as given below.

Dataset: Product Table

ProductID	ProductName	Price	Quantity
1	Laptop	1200.50	10
2	Mouse	25.99	50
3	Keyboard	75.00	30
4	Monitor	300.00	20
5	Printer	150.75	15
6	Router	500.22	3

Write a JDBC program to connect to a MySQL database named product.

1.Use the following database credentials:

URL: jdbc:mysql://localhost:3306/phonebook

Username: root

Password: root

7. Create a BoundedBuffer class that extends Buffer and add a method to check if the buffer is full or empty without modifying the buffer itself. Use this method in the producer and consumer classes.

8. Implement a stop method for both the Producer and Consumer classes that gracefully stops the threads after a certain number of items have been produced and consumed.

9. Write a Java program to create a new array list, add some elements (string) and print out the collection

10. Write a Java program to insert an element into the array list at the first position

11. Write a Java program to remove the fifth element from a array list

12. Write a Java program to sort a given array list

13. Write a Java program to shuffle elements in a array list

14. Write a Java program to increase the size of an array list

15. Write a Java program that connects to a MySQL database using JDBC, creates a table named `contacts`, and inserts a record into it. The table `contacts` should have the following columns: `id` (INT), `name` (VARCHAR), `phone_number` (VARCHAR), and `email` (VARCHAR). Ensure the program loads the JDBC driver, establishes a connection, and handles exceptions appropriately. Use prepared statements to insert a record with the following values: `id = 1`, `name = "John Doe"`, `phone_number = "123-456-7890"`, and `email = "john.doe@example.com"`.