**I, Lý thuyết**

1. ArrayList là gì? Sự giống và khác nhau giữa ArrayList với Array

2. Các method phổ biến khi thao tác với ArrayList

**II, Code**

Tạo Java with ant project với cấu trúc tên: HoVaTen\_MSSV

**1. Create and Populate an ArrayList**

Write a program to create an ArrayList of integers. Add the numbers from 1 to 10 to the list and display the elements.

**2. Update an Element**

Write a program to create an ArrayList of strings. Add five colors to the list. Replace the second color with "Yellow" and display the updated list.

**3. Iterate Through an ArrayList**

Create an ArrayList of double values representing the prices of products. Use a for loop to display all the prices in the list.

**4. Check for an Element**

Write a program to create an ArrayList of strings representing city names. Add five city names to the list. Check if the list contains the city "London" and print the result.

**5. Remove an Element**

Create an ArrayList of integers. Add ten random numbers between 1 and 100. Remove the number at index 3 and print the updated list.

**6. Count Odd and Even Numbers**

Generate 15 random numbers between 1 and 50 and store them in an ArrayList. Write a program to count how many numbers in the list are odd and how many are even.

**7. Reverse an ArrayList**

Write a program to create an ArrayList of integers. Add five numbers to the list. Reverse the order of the elements in the list and display the reversed list.

**8. Copy an ArrayList**

Create an ArrayList of strings representing fruits. Add five fruit names to the list. Copy the elements of this list into another ArrayList and display both lists.

**9. Find the Largest and Smallest Element**

Write a program to create an ArrayList of integers. Add at least five numbers to the list. Find and display the largest and smallest elements in the list.

**10. Remove Duplicates from an ArrayList**

Write a program to create an ArrayList of strings representing names. Add some names, including duplicates, to the list. Remove duplicate elements and display the list without duplicates.

**11. Find the Maximum and Minimum**

Create an ArrayList of 10 random integers between 1 and 100. Write a program to find and display the maximum and minimum numbers in the list.

**12. Sum of Random Numbers**

Generate 10 random numbers between 1 and 100, store them in an ArrayList, and calculate the sum of all the elements.