Hands-On Exercises

Lambda Expressions

[Lambda Expressions 1](#_Toc14453)

[Assignment 01 1](#_Toc964)

[Assignment 02 1](#_Toc3122)

[Assignment 03 2](#_Toc7816)

[Assignment 04 2](#_Toc25751)

[ForEach 2](#_Toc23397)

[Assignment 01 2](#_Toc7039)

[Assignment 02 3](#_Toc12114)

[Functional Interface 3](#_Toc29283)

[Assignment 01 3](#_Toc31939)

[Assignment 02 3](#_Toc13661)

[Assignment 03 3](#_Toc19726)

[Assignment 04 4](#_Toc10089)

[Assignment 05 4](#_Toc16960)

[Assignment 06 4](#_Toc2424)

[Assignment 07 4](#_Toc27722)

[Assignment 08 5](#_Toc23378)

[Interfaces 5](#_Toc17649)

[Assignment 01 5](#_Toc11358)

[Assignment 02 5](#_Toc28648)

[Method Reference 6](#_Toc17348)

[Assignment 01 6](#_Toc2293)

[Assignment 02 6](#_Toc25222)

[Assignment 03 6](#_Toc22551)

# Lambda Expressions

## Assignment 01

Create an ArrayList al and add 25 random numbers.

Write code to print all the prime numbers that are present in it, using lambda expression.

Assignment 02  
  
  
Create an ArrayList al and add 10 different words.

Write code to print all the Strings in reverse order, using lambda expression.

**Assignment 03**  
Create an ArrayList al and add 10 different words.

Write code to print all the Strings whose length is odd, using lambda expression.

Assignment 04  
  
  
Create an interface WordCount with a single abstract method int count(String str), to count and return the no of words in the given String. I  
Implement count method using Lambda expression in another class MyClassWithLambda.I  
Invoke it to display the result on the console.

# ForEach

## Assignment 01

Write a program to create an ArrayList and add the weekdays.

Iterate and print all the elements using forEach method.

## Assignment 02

Create an ArrayList and add 5 Employee(id,name,address,salary) objects.

Retrieve the objects from the ArrayList using forEach and print the Employee details.

# Functional Interface

## Assignment 01

Given an ArrayList with 5 Employee(id,name,location,salary) objects,

write a program to extract the location details of each Employee and store it in an ArrayList, with the help of Function.

## Assignment 02

Given an ArrayList containing 10 numbers, write a program to calculate the sum of all the elements, with the help of Function.

## Assignment 03

Given an ArrayList containing 10 words, write a program to filter the words which are palindrome, with the help of Predicate.

## Assignment 04

Create an Employee class with three private variables id, name and salary.

Create getters & setters and a parameterized constructor.

Create an ArrayList and store 5 to 10 Employee objects in it.

Write a program using Predicate, to filter and display the name of the employees whose salary is less than 10000.

## Assignment 05

Given an ArrayList containing 10 numbers, write a program to filter the perfect square numbers.

Example for perfect square numbers: 0, 1, 4, 9, 16, 25, 36, 49, 64 etc..

## Assignment 06

Given an ArrayList containing 10 words, write a program to reverse each word and update the same ArrayList , with the help of Consumer.

Assignment 07

Given an ArrayList containing 10 numbers, write a program using Consumer methods to display each number and whether is it odd or even.

Example: For number 2, it should print "2 even" For number 5, it should print "5 odd"

## Assignment 08

Write a program using Supplier, which generates and returns an ArrayList containing first 10 prime numbers.

# Interfaces

## Assignment 01

Create an interface Vehicle with a default method message() that returns nothing and prints "Inside Vehicle".

Create an interface FourWheeler with a default method message() that returns nothing and prints "Inside FourWheeler".

Create a class Car implementing these two interfaces.

In this class, Override the message() method and call the message() method of the Vehicle interface using super keyword.

Instantiate the class, call the message method and observe the output.

Assignment 02  
  
Create an interface Test with an abstract method "int myFunction".

This function takes three integer parameters.

Write a program to create two Test reference variables t1 and t2.

t1 should add three integer parameters and t2 should multiply three integer parameters, using lambda expression.

Call myFunction using t1 and t2 reference variables, by passing three integer values and print the result.

# Method Reference

## Assignment 01

Define your own class with an instance method "int factorial(int n)" which should return the factorial of the given input "n".

Define your own functional interface to refer this instance method and invoke it to get the factorial result.

## Assignment 02

Define your own class with a static method "int digitCount(int n)" which should return the number of digits in a given input "n".

Define your own functional interface to refer this static method and invoke it to get the number of digits.

## Assignment 03

Define your own class and a parameterized constructor with one integer argument. It should check the argument and display "Prime" or "Not Prime".

Define your own functional interface to refer this constructor and invoke it to check whether the given number is Prime or Not.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*