Lab	Program
1.	a. A demo on NetBeans IDE. b. Write a java Program to print "Hello World". c. Write a java Program to print Address in multiple lines.
2.	a. Write a console program to define and initialize a variable of type byte to 1, and then successively multiply it by 2 and display its value 8 times. Explain the reason for the last result. b. Write a program that defines a floating-point variable initialized with a dollar value for your income and a second floating-point variable initialized with a value corresponding to a tax rate of 35 percent. Calculate and output the amount of tax you must pay with the Rs. and paisa stored as separate integer values (use two variables of type int to hold the tax, perhaps taxRs and taxPaisa).
3.	a. Write a program that calculate percentage marks of the student if marks of 6 subjects are given. b. Write a program to display a random choice from a set of six choices for breakfast (you could use any set; for example, scrambled eggs, waffles, fruit, cereal, toast, or yogurt).
4.	a. When testing whether an integer is a prime, it is sufficient to try to divide by integers up to the square root of the number being tested. Write a program to use this approach. b. A lottery requires that you select six different numbers from the integers 1 to 49. Write a program to do this for you and generate five sets of entries.

5.	a. Write a program to generate a random sequence of capital letters that does not include vowels.
	 b. Write an interactive program to print a string entered in a pyramid form. For instance, the string "stream" has to be displayed as follows:
	     S
	    S t
	    S t r
	   S t r e
	   S t r e a
	  S t r e a m
	 c. Create an array of String variables and initialize the array with the names of the months from January to December. Create an array containing 12 random decimal values between 0.0 and 100.0. Display the names of each month along with the corresponding decimal value. Calculate and display the average of the 12 decimal values.

6.	a. Write a program to accept a line and check how many consonants and vowels are there in line. b. Write a program to find length of string and print second half of the string. c. Write a program to find that given number or string is palindrome or not.
7.	a. Create a class which ask the user to enter a sentence, and it should display count of each vowel type in the sentence. The program should continue till user enters a word "quit". Display the total count of each vowel for all sentences. b. Write a program to create a class Student with data 'name, city and age' along with method printData to display the data. Create the two objects s1, s2 to declare and access the values. c. Write a program to create a class Student2 along with two method getData(), printData() to get the value through argument and display the data in printData. Create the two objects s1, s2 to declare and access the values. d. WAP using parameterized constructor with two parameters id and name. While creating the objects obj1 and obj2. Pass two arguments so that this constructor gets invoked after creation of obj1 and obj2. Create one method to print the data. e. Write a program in JAVA to create a class Bird also declares the different parameterized constructor to display the name of Birds.
8.	a. Write a program in java to generate an abstract class A also class B inherits the class A. generate the object for class B and display the text "call me from B". b. Write a java program in which you will declare two interface sum and Add inherits these interface through class A1 and display their content.

9.	a.	Write a java program in which you will declare an abstract class Vehicle inherits this class from two classes car and truck using the method engine in both display "car has good engine" and "truck has bad engine".
	b.	Define an abstract base class Shape that includes protected data members for the (x, y) position of a shape, a public method to move a shape, and a public abstract method show() to output a shape. Derive subclasses for lines, circles, and rectangles. You can represent a line as two points, a circle as a center and a radius, and a rectangle as two points on diagonally opposite corners. Test the classes by objects of the derived classes, and then invoking the show() method.
10.	a.	Write a program that will generate exceptions of type NullPointerException, NegativeArraySizeException, and IndexOutOfBoundsException. Record the catching of each exception by displaying the message stored in the exception object.
	b.	Write a program that calls a method that throws an exception of type ArithmeticException at a random iteration in for loop. Catch the exception in the method and pass the iteration count when the exception occurred to the calling method by using an object of an exception class you define.
11.	a.	Create three threads in synchronization that will reduce the input number by one every time and displays the output as follows: Start thread_1: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 End Start thread_2: 10 9 8 7 6 5 4 3 2 1 End Start thread_3: 5 4 3 2 1 End
	b.	Write a program to demonstrate Inter thread Communication.
	c.	Write a program to demonstrate Deadlock.
12.	a.	WAP Write a main() method that takes the name of a text file as a command line argument and prints every line in lower case.
	b.	Write a main() method that counts the number of words in a text file whose name is accepted from standard input. Also print the size of a file.
	c.	Write a program using BufferedInputStream, FileInputStream, BufferedOutputStream, and FileOutputStream to copy Content of one file File1.txt into another file File2.txt.
13.	a.	Write a program to demonstrate ArrayList class. Perform insert, delete and access operation.
	b.	Write a Program to demonstrate Vector class. Perform insert, delete and access operation.
14.	a.	WAP to create and import a Package.
	b.	WAP to demonstrate List, Stack and Maps classes and its operations.
	c.	A mini project demo on a) Brick Breaker Game b) Notepad application.

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