SL. NO	Date	Time In	Time Out	Student	Topics	Home Work / Assignment	Tutor
	DEMO SESSION (Mon-18/01/21)	**6:00AM**	**7:30 AM**	**Mansi**	**Introduction to Java Programming** **Timeline History of Java** **Why Java?, and Features of Java** **Java vs other programming languages** **Simple Java program demo**	**Homework: Review of Java History and Application use cases in Java**	**Victor**
1	Sat-23/01/21	**11:00 PM**	**12:20AM**	Mansi	Generations of Computer Program translators: Compilers vs Interpreters Introduction to Java IDEs Importance of Binary digits (0's & 1's)	Simple program to 1) print "Hello" + name 2) print the numbers, 1 to 5	**Victor**
2	Sun-24/01/21	**11:00 PM**	**12:20AM**	Mansi	Javadocs, Comments & Keywords Getting started programming in Java-Downloading the necessary files Structure of JDK & JVM	Simple programs that prompt the user to enter their names and greet them accordingly	**Victor**
3	Sat-30/01/21	**11:00 PM**	**12:20AM**	Mansi	Introductory Java language features Packages & Classes (Case Study: java.util)	Discussion on "Scanner" and Math classes	**Victor**
4	Sun-31/01/21	**11:00 PM**	**12:20AM**	Mansi	Types & identifiers Primitive type (int, Boolean, double, etc Example programs on primitive types Assignment (=) operator	-The use of assignment vs comparative operators -Simple programs on primitive types	**Victor**
5	Sun-07/02/21	**11:00 PM**	**12:25AM**	Mansi	Discussions and solution exercises to Mansi class assignment in PigLatin (Units 1 – 7)	Assignment Review of 10 lab programs in PigLatin	**Victor**

					• Naming rules and styles in Java		
6	Sat-14/02/21	**11:00 PM**	**12:05AM**	Mansi	• Statements & Java Expressions • Naming rules and styles • Expressions with Multiple datatypes • Selection constructs (IF, IF-ELSE & Nested-IF statements)	Program to print the largest of two & three numbers using IF-ELSE	**Victor**
7	Sat-20/02/21	**9:40 PM**	**11:00PM**	Mansi	• Representing algorithms using flowcharts • Examples programs using multiple IF-Stmts such as: - Number guess program, vowels & consonants, election voting system etc	Grade calculator based on given criteria using IF-ELSE statements	**Victor**
8	Sat-27/02/21	**11:00 PM**	**12:20AM**	Mansi	• Switch-cases (multiple IF Statements) • Exercises on the "loop holes" of *SWITCH-Cases* **(Review LOOPS completely) • Operators in Java • Use of FINAL variable in Java	Vowels vs consonant exercises using Switch- cases	**Victor**
9	Sun-28/02/21	**11:00 PM**	**12:20AM**	Mansi	• Operator precedence • Decisions & Iterations • Introduction to FOR, WHILE & DO-WHILE • Number generation using FOR-LOOPS & FOR-EACH LOOPS	Generate first 5 natural numbers using while loops	**Victor**
10	Thurs-11/03/21	**11:00 PM**	**12:00AM**	Mansi	• Exceptions in Java:- DivisionByZero, ArrayIndexOutOfBounds error • Example programs of WHILE & DO-WHILE loops • Program that keeps prompting the user for input	Number guess game program	**Victor**

11	Fri-12/03/21	**9:30 AM**	**10:30AM**	Mansi	• Example programs using WHILE & DO-WHILE • Prime factor generation using WHILE loop • BREAK & CONTINUE (Using WHILE)	A trivial program that persistently prompts the user to enter some texts. It will keep prompting the user for infinitely many times unless the user enters Java	**Victor**
12	Sat-13/03/21	**10:00PM**	**11:00PM**	Mansi	• Break and Continue stmts • Nested loops • Scope of Variables	**Assignment**: Students grade calculator using nested loops	**Victor**
13	Sat-20/03/21	**10:00PM**	**11:00PM**	Mansi	**ARRAYS** • One-dimensional Array • Accessing array elements • Array variable assignments	**Assignment:** Improved digit frequency counter	**-do-**
14	Sun-28/03/21	**10:00PM**	**11:00PM**	Mansi	• Array utilities • Looping through an array • Accessing elements at a specific location	**To do:** Read up and make notes on array classes. Assignment on: Generating an array with random elements	**-do-**
15	Sat-10/04/21	**10:00PM**	**11:00PM**	Mansi	**METHODS** • Defining a method • Multiple Return Statements • Local Variables • Method overloading	**Homework:** Read up reasons why we need methods in Java	**-do-**
16	Sun-11/04/21	**9:30PM**	**10:30PM**	Mansi	• Writing Java Methods • Why Method? • Creating our own Methods • Basic Syntax	1. Complete the method: *public static boolean isPositive(int a),* that returns true if parameter a is positive. 2. Complete the method: *public static boolean isOdd(int a),* that returns true if the value of the parameter a is odd.	**-do-**
17	Sat-17/04/21	**9:30PM**	**10:30PM**	Mansi	• The *void* return type Methods • Where do I write Methods? • Benefits of writing Methods • More examples on my YouTube channel	3. Complete the method: *public static int rollDice(),* that returns a random number between 1 and 6, representing the roll of a die. 4. Complete the method*: public static String capitalizeFirst(String name)* that returns the supplied String with the first letter capitalized. You can assume the name parameter will already be lower case.	**-do-**

18	Sun-18/04/21	**8:30PM**	**9:45PM**	Mansi	**Calling Methods** How do I call a method? What happens at call? Method return type Parameter matching Pass-by-value (important)	Complete the method: `public static String convertTime(double time, boolean isMinutes)`, that converts seconds to minutes and vice versa. The boolean parameter `isMinutes` will be supplied as true if `time` is in minutes. Write a method that returns an **approximation** of the value of pi. The value of pi can be approximated by calculating the result of the following 'infinite' series (a sequence of numbers that continues forever): $\pi = 4 \times \left(1 - \frac{1}{3} + \frac{1}{5} - \frac{1}{7} + \frac{1}{9} - \frac{1}{11} + \frac{1}{13} - \frac{1}{15} + \cdots\right)$	**-do-**
Duration so far: 20hrs, 35mins (Received only 7k on 14th March, 2021, bal. Rs. 8000)							
19	Sat-22/05/21	**8:40pm**	**9:45pm**	Mansi	Overview on Methods, use cases and applications	**Discussion** on previous topics and OOPs concepts in Java (Methods fuels code-reusability)	**-do-**
20	Mon-24/05/21	**9:00pm**	**10:00pm**	Mansi	Method invocation Parameter passing and returning values	**Homework:** Explain the benefits of having a program perform some sets of instruction inside methods. Can you think of any downsides of doing so?	**-do-**
21	Tue-25/05/21	**9:00pm**	**10:00pm**	Mansi	Different variables with the same identifiers Value swapping using methods	**Homework:** Write a method called cube() that returns its double parameter raised to the third power.	**-do-**
22	Thurs-27/05/21	**9:00pm**	**10:00pm**	Mansi	Pass-by-value vs Pass-by-reference. Differences and implementation	**Homework:** Write a method to compute the followings… i) The square-root of 81 ii) The fourth-root of 81 and iii) The sixth-root of 729	**-do-**
23	Fri-28/05/21	**9:00pm**	**10:00pm**	Mansi	Method Overloading (How, Why and proper implementation)	**Homework:** Explain how overloaded methods are selected and called	**-do-**
24	Mon-31/05/21	**9:00pm**	**10:00pm**	Mansi	Arrays: Introduction (one-dimensional arrays) Accessing array elements Explicit initialization	Homework on: One-dimensional array elements assignment and explicit invocation	**-do-**

					Array utilities		
25	Wed-02/06/21	**9:00pm**	**10:00pm**	Mansi	Accessing Array Elements Concept of "new" keyword Demonstration of how array elements are accessed	**Hands-On** Demo on Accessing array elements with examples	**-do-**
26	Thurs-03/06/21	**9:00pm**	**10:00pm**	Mansi	Explicit Initialization Array Variable Assignment	**Homework:** Passing arrays as inputs to methods	**-do-**
27	Fri-04/06/21	**9:15pm**	**10:15pm**	Mansi	Array Utilities Arrays and Methods Returning an Array	**Hands-On:** Generating an array with random elements examples	**-do-**
28	Tue-08/06/21	**9:00pm**	**10:00pm**	Mansi	Sequential Search Selection Sort	**Program:** A program utilizing the selection sort to sort its inputs	**-do-**
29	Wed-09/06/21	**9:00pm**	**10:00pm**	Mansi	Initializer Lists for Multi-Dimensional Arrays Lengths od Multi-Dim Arrays	**Program:** Matrix power program Finding the powers of matrices	**-do-**
30	Thurs-10/06/21	**9:00pm**	**10:00pm**	Mansi	Inheritance: Introduction Concept and Role of Inheritance Creating Subclasses from Superclass	Simple examples on inheritance (use of **extends** keyword) **Hands-on:** Creating and using a subclass without any additional data members and methods	**-do-**
31	Tue-15/06/21	**9:00pm**	**10:00pm**	Mansi	Use of "IS-A" vs "HAS-A" relationship Designing Class Inheritance Hierarchy Access levels and subclasses	**Hands-On:** Subclass with additional data members and methods	**-do-**
32	Wed-16/06/21	**8:30pm**	**10:00pm**	Mansi	The use of **super** keyword and relationship with "**this**" keyword	**Hands-On:** Using the keyword super to identify variables of the superclass	**-do-**
33	Thurs-17/06/21	**9:00pm**	**10:00pm**	Mansi	Recursive Problem Solving: Introduction and use cases	**Hands-On:** Example exercises on recursive functions vis-a-viz: Factorial and **Fibonacci**	**-do-**
					Was Supposed to Wind up Today but need another 2 hours of Tuition.		**-do-**
							-do-
					Total Duration: 20hrs, 35 mins + 16hrs, 35 mins **= 37 hrs, 10 mins**		**-do-**

34	Mon-21/06/21	**8:30pm**	**10:00pm**	Mansi	• Recursive Problem Solving Contd: Tower of Hanoi use cases	Demo: Tower of Hanoi Example	
35	Thurs-24/06/21	**8:30pm**	**10:00pm**	Mansi	• Tower of Hanoi, extended examples	""	
36	Fri-25/06/21	**8:30pm**	**9:30pm**	Mansi	• Revision: History and features of Java • Generations of Computers • Program translators and Binary operations	• Revision cum Discussion	
					Altogether: 37hrs 10mins + 4hrs = 41hrs 10mins		