V.S.R. GOVERNMENT DEGREE & P.G. COLLEGE
MOVVA-521135, KRISHNA DISTRICT, ANDRHA PRADESH
NAAC Accredited with "A" Grade (3.01 CGPA)
ISO 9001:2015, 14001:2015, 50001:2011 Certified Institution
(Affiliated to Krishna University)

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1.2.1   Details of Certificate/Value added Courses

Online Short Term Skill Training Course on IIT-Bombay Spoken Tutorial

Name of Certificate Programe:: JAVA

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भारतीय प्रौद्योगिकी संस्थान मुंबई
पवई, मुंबई-400 076, भारत

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IIT Bombay

Syllabus IIT Bombay Certification under the Spoken Tutorial Project

Course Name: **Java**   **Credit Hours:**   30

1. Getting started with Java – installation

Install jdk from Synaptic Package Manager, Choose openjdk-6-jdk from the list of packages available, Mark it for installation, The installation will take a few seconds

Verify the installation

At the command prompt type java -version, so the version number of the jdk will be displayed

Run a simple java program and see if it works

Type javac TestProgram.java for compiling the code and java TestProgram for executing the code

1. **Java - First program**
   1. write simple java program
   2. print "My First Java Program!" on Console
   3. save the file
   4. file name given to the java file
   5. compile the file
   6. run the file
   7. correct the errors
   8. naming conventions for class
   9. naming conventions for method
   10. naming conventions for variable

   Eclipse

2. Installing Eclipse
   1. Install Eclipse on Ubuntu on the Terminal
   2. Set up the proxy on the Terminal

3. Then fetch the list of all the available softwares

4. Type sudo apt-get update

5. Then install eclipse on the Terminal

6. Type sudo apt-get install eclipse

7. Verify if Eclipse is installed on the system

8. Installing Eclipse on Debian,Kubuntu,Xubuntu

9. Installing Eclipse on Redhat

10. Installing Eclipse on Fedora,centos and suse linux

3. Getting started with Eclipse

1. Eclipse is an Integrated Development Environment

2. It is a tool on which one can write, debug and run java programs easily

3. Open Dash Home and type Eclipse in the search box.

4. We get Workspace Launcher

5. On clicking on Workbench we get the Eclipse IDE

6. Go to File->New->Project and select Java Project

7. Create a project named EclipseDemo and create a class inside DemoClass

8. Learn about Package Explorer and Editor portlet

4. Hello World Program

1. Open Eclipse

2. Create a Java Project named DemoProject

3. Create a class named DemoClass

4. Class name and file name will be the same

5. Eclipse suggests various possibilities as we type a command

6. Eclipse also completes the parentheses by automatically adding the closing parentheses

7. Include the statement that we want to print

8. Eclipse also completes the quotes by adding the closing quote

9. Compile and execute the program

10. Change the code to print

5. Errors and Debugging

1. When writing a Java Program, here is a list of typical errors:

2. Missing semicolon(;)

3. Missing double quotes(".")

4. Mis-match of filename and classname

5. Typing the print statement n lower case

6. The line which has the error will be indicated with a red cross mark on the left margin

7. The list of errors is displayed by hovering the mouse over the cross mark

8. Create a class ErrorFree with Errors, debug the code and run it

9. Eclipse also offers intelligent fixes

6. Programming features of Eclipse

Auto completion, Sets the corresponding closing brace when we open the brace, Provides a drop-down list of methods when you start typing the code. Syntax highlighting, Classname is highlighted in pink color and method in blue color.Keyboard shortcuts, F11 to debug a program and Ctrl plus H to search a specific file. Error highlighting Cross symbol in the program denotes errors, Remove semicolon and error details are displayed when mouse is hovered over cross symbol.

Fundamental Programming Structures in Java

7. Numerical datatypes

Define datatypes and numerical datatypes

Int, float, byte ,short, long, double,range & size of each numerical datatypes, declaration and initialization of numerical datatypes, valid and invalid declaration

8. Arithmetic Operations

Define an operator, Define arithmetic operators, addition, subtraction, multiplication, division, modulo, simple program to demonstrate arithmetic operators, appropriate datatypes for appropriate values, save, compile and run the program

9. Strings

char datatype, letter, digit, punctuation marks, **tab**, or a space are all characters.Program explaining the variable and the character data.Introduction to strings, Creating string by Direct Initialization, Creating string by using new operator, Method of string class String length(), String concat(), String toUpperCase(), String toLowerCase()

10. Primitive type conversions
    1. define type conversion or type casting
    2. higher order integer to lower order integer- Explicit type casting
    3. program to show explicit type casting
    4. common mistake in explicit type casting.
    5. program to show common mistake in explicit type casting
    6. lower order integer to higher order integer – Implicit type casting
    7. program to show implicit type casting
    8. char to integer
    9. integer to char
    10. program to show char to int type casting.

Control flow

1. define switch case statement
2. compare switch and nested if
3. switch case syntax
4. working of a switch case statement
5. use of keyword switch
6. valid and invalid use of keyword **case**
7. use of keyword default
8. use of keyword break
9. program to demonstrate switch case statement
10. save, compile and run the program to check the output

16. while loop
    1. Loop control statement
    2. types of loop control statements
    3. Introduction to while loop
    4. syntax of while loop
    5. Program using while loop
    6. Check the output.
    7. Introduction to infinite loop
    8. loop variable modification
    9. Check the output
    10. How to terminate the infinite loop

17. for loop
    1. syntax, introduction to for loop
    2. for loop syntax
    3. loop variable
    4. loop condition
    5. loop variable increment or decrement
    6. loop block
    7. flow of loop
    8. advantage of using loop

18. do while loop
    1. define do while
    2. do while syntax
    3. working of do while loop
    4. example of do while loop
    5. explain the do while programming
    6. save, compile and run the program to check the output
    7. how different is it from the while loop
    8. program to demonstrate the differences

Arrays

19. Introduction to Arrays
    1. About Arrays
    2. Declare an Array
    3. Initialize an array
    4. Intilalization using for loop
    5. Index of an array elements
    6. change values of an array
    7. print the value of an array
    8. Advantage of an array.

20. Array operations
    1. import java.util.Arrays
    2. use methods from class Arrays
    3. toString() method
    4. sort() method
    5. fill() method
    6. copyof() method
    7. copyofRange() method
    8. about parameters for each method.

Classes & Objects

21. Creating class
    1. Whatever we can see in this world are all objects
    2. Objects can be categorized into groups known as class
    3. This is class in real world
    4. Human Being is an example of class in real world
    5. Class in java is the blue print from which individual objects are created
    6. Class consists defines a set of properties called variables and a set of behaviors called methods
    7. Syntax for creating class
    8. Create a simple class Student using Eclipse
    9. The Student class can contain properties

22. Creating Object
    1. An object is an instance of a class
    2. Each object consist of state and behavior
    3. Object stores it state in fields or variables
    4. It exposes its behavior through methods
    5. Reference variables

6. Create a class named TestStudent

7. Create an object of the Student class

8. Use new operator

9. Check what the reference variable contains

10. Create one more object of the Student class and check what the reference variable contains

23. Instance fields

    1. Also known as non-static fields

    2. Open the TestStudent class which we have created

    3. Access the fields roll_number and name using dot operator

    4. See the output

    5. Initialize the field and see the output

    6. Change the modifier of the fields to private

    7. Debug the error that you get

    8. Change the modifier to protected

    9. Each object of a class will have unique values

    10. Create two objects of the Student class

24. Methods

    1. method definition

    2. write simple method

    3. method returning value

    4. call a method in another method

    5. flow of the program

    6. call a static method

    7. call a method from another class

    8. method signature

    9. method body

    Constructors

25. Default constructor

    1. what is a constructor?

    2. what is a default constructor?

    3. when is it called?

    4. define a constructor

    5. initialize the variables

    6. call the constructor

    7. difference between constructor and method

26. Parameterized constructors

    1. What is a parameterized constructor?

2. create constructor without parameter

3. create a constructor with parameter

4. assign values to the variables in the constructor

5. pass arguments during the constructor call

6. working of parameterized constructor

7. show common errors

8. resolve the errors

9. create another parameterized constructor

10. why to use constructor?

27. Using this keyword

1. this is a reference to the current object

2. helps to avoid name conflicts

3. we can use this keyword inside a constructor to call another one

4. the constructors must be in the same class

5. explicit constructor invocation

6. Explain it using the parameterized constructor code

7. Make this statement the last one in the constructor

8. You will get an error

9. this statement should be the first one inside a constructor

28. Non-static block

1. Non-static block

2. Any code written between two curly brackets

3. Executed for each object that is created

4. Executes before constructor's execution

5. can initialize instance member variables of the class

6. create a class named NonStaticTest

7. Create a non-static block and a constructor inside it

8. Check the output

9. Include multiple non-static blocks

10. they will be executed in the sequence in which they appear in the class

11. Check the output

12. Non-static block is not a substitute for constructor

29. Constructor Overloading
    1. define multiple constructor
    2. what is constructor overloading?
    3. constructor with different number of parameters.
    4. parameters with different datatypes.
    5. how is constructor overloaded?
    6. flow of overloading process.
    7. advantage of constructor overloading.

30. Method Overloading
    1. define multiple methods.
    2. methods with same name.
    3. methods with different number of parameters.
    4. methods with different datatypes of parameter.
    5. what is method overloading?
    6. example for overloadin method
    7. how to overload method?
    8. advantage of method overloading.
    9. error in method overloading.

31. Taking user input in Java
    1. What is BufferedReader?
    2. Importing three classes from Java.io package
    3. How to take the input from the user?
    4. Syntax to implement BufferedReader
    5. What is InputStreamReader?
    6. Create object of InputStreamReader
    7. Create object of BufferedReader
    8. About IOException
    9. About throws keyword
    10. Typecasting

Intermediate Level

1. Subclassing and Method Overriding
   - Definition of subclassing
   - Demo of subclassing using an Employee and Manager class
   - Single inheritance
   - Use of extends keyword
   - Private members in a super class
   - Definition of method overriding

- Annotation
- @Override Annotation

2. Calling methods of the superclass
   - super keyword
   - Call methods of the super class
   - Constructor of the super class
   - Demo of super keyword using an Employee and Manager class
   - Single inheritance
   - Use of extends keyword
   - Private members in a super class

3. Using final keyboard
   - final keyword
   - What is final keyword and its application?
   - Where final keyword can be declared?
   - final variable
   - final static variables
   - static block
   - final variable as parameter
   - final method
   - private final method
   - final class

4. Polymorphism
   - Polymorphism in Java
   - Run-time polymorphism
   - Virtual Method Invocation
   - Compile-time polymorphism
   - Role of JVM
   - IS-A test
   - Static binding
   - Dynamic binding

5. Abstract Classes
   - Abstract Classes in Java
   - What are Abstract Methods
   - What are Concrete Methods
   - Properties of Abstract Methods and Abstract Classes
   - How to use Abstract Methods

6. Java Interfaces

  - Java Interfaces

  - Implementing Interface

  - Implementation Classes

  - Interfaces Vs Abstract classes

  - Implementing Multiple Interfaces

  - Usage of Interfaces with an example

7. Static Variables

  - What is Static Variable in Java?

  - Usage of Static Variables with Example

  - Static Variables Vs Instance Variables

  - Final Static Constants

8. Static Methods

  - What is static method in Java?

  - Static methods Vs Instance methods

  - Usage of static method with example

  - Passing object variables in a static method

9. Static Blocks

  - What is a static block

  - Declaring and defining a static block

  - How static blocks are invoked and executed

10. Exception Handling

  - What is an Exception

  - Types of Exceptions

    - Checked Exceptions

    - Unchecked Exceptions

  - Explaining *ArrayIndexOutOfBoundsException*

  - Demonstrating Checked Exceptions with example

  - Handling Exceptions using try-catch blocks

- Explaining *ArithmeticException*
- Demonstrating Unchecked Exceptions with example
- Explaining *FileNotFoundException*
- Usage of finally block
- Explaining *NullPointerException*

1. Custom Exceptions

- What is a Custom Exception
- Demonstration of custom exception
- Custom exception example - "InvalidMarkException"
- Usage of "throw" keyword
- How to resolve errors in custom exceptions
- Resolve error using "Add throws declaration" option
- Usage of "throws" keyword
- Example for "FileNotFoundException"
- How to handle multiple exceptions
- How to use "surround with try/catch" option

For and On behalf of
Spoken Tutorials,
Indian Institute of Technology, Bombay

Mrs. Akanksha Saini
National Coordinator
Spoken Tutorial Project, IIT Bombay

SPOKEN TUTORIAL EXAM RESULT STATUS III M.P.C.S Course: Java

AY-2020-21 III YEARS

S.NO	First Name	Last Name	Email Id	Score
1	CHATLA	MEGHANA	chatlameghana31@gmail.com	45.0% - Certificate
2	DEVANABOYINA	SANDHYA	sandhyadevanaboyina5@gmail.com	37.5 (Fail)
3	GANDRAPU	ASHARANI	gandrapuasharani@gmail.com	20.0 (Fail)
4	GANDRAPU	ASHWINI	aswinigandrapu10@gmail.com	12.5 (Fail)
5	KUDETI	POOJA	kudeti.pooja@gmail.com	27.5 (Fail)
6	MANNEM	TRIVENI	3veni34@gmail.com	Never submitted
7	MEDEPALLI	TULASI	tulasimedepalli99@gmail.com	27.5 (Fail)
8	PAMARTHI	AKHILA	pamarthiakhila@gmail.com	47.5% - Certificate
9	MATTA	GOPICHAND	gopichandmatta@gmail.com	40.0% - Certificate
10	BHOGADI	VIJAYBABU	bhogadivijaybabu143@gmail.com	42.5% - Certificate
11	CHENNU	CHANDUSWAMY	chennuchandu99@gmail.com	42.5% - Certificate
12	DEVINENI	TEJA	tejadevineni1@gmail.com	15.0 (Fail)
13	GUDAVALLI	SRAVYA	gudavallisravya@gmail.com	30.0 (Fail)
14	KALARI	HARIKA	harikakalari20@gmail.com	10.0 (Fail)
15	KANCHARLA	KINNERA	kinnerakancharla@gmail.com	5.0 (Fail)

Total Registered =
Total Test Attempted =
No. of students writtin
(PASS) recieved = 35
(FAIL)   = 28

Technical problems =

16	KORUKONDA	LAVANYA	korukondalavanya2018@gmail.com	20.0 (Fail)
17	PEDAPUDI	DIVYA	divyapedapudi69@gmail.com	25.0 (Fail)
18	GARAPATI	SWATHI	swathigarapati2000@gmail.com	15.0 (Fail)
19	PEDDIBOYINA	LAKSHMIPRIYA	lakshmi19961123@gmail.com	35.0 (Fail)
20	KOLUSU	NALINODBHAVI	kolusunalini@gmail.com	17.5 (Fail)
21	NERUSU	NAGAVENKATASAI	nerususai79052@gmail.com	35.0 (Fail)

NOTE: The studnets who have not attempted the exam register again with valid email with the help of JKC Monitoring cell & the students who have qualified receive certificates

signature of the coordinator

J.K.C. Coordinator
V.S.R. Government
Degree & P.G. College, Movva

pass   Fail.
05   16

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S.NO	First Name	Last Name	Email Id	Score
1	DEVARAPALLI	RAJKUMAR	devarapallik245@gmail.com	32.5 (Fail)
2	BETA	KARTHEEK	karthikbeta01@gmail.com	25.0 (Fail)
3	DEVARAPU	THAVITINAYUDU	naidunithin51@gmail.com	20.0 (Fail)
4	DASARI	VIKASBABU	vikasdasari1999@gmail.com	25.0 (Fail)
5	KAMBHAM	VIJAYRAMARAJU	kambhamvijayaramaraju@gmail.com	30.0 (Fail)
6	PEDDIBOYINA	TEJA	tejayadav256@gmail.com	37.5 (Fail)
7	KATTA	VAMSI	dhayakarvamsi@gmail.com	27.5 (Fail)
8	TADEPALLI	PRAVEEN	praveentadepalli929@gmail.com	22.5 (Fail)
9	VARIGANJI	VVPAVANKUMAR	variganjipavankumar92@gmail.com	17.5 (Fail)
10	DASI	SNEHA	snehadasi136@gmail.com	32.5 (Fail)

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J.Kulpana
Signature of the JKC Coordinator
J.K.C. Coordinator
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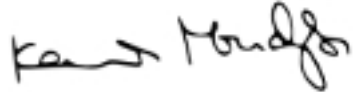
Pass   fail
Nil   10

Certificate for the Completion of Java Training

This is to certify that **CHATLA MEGHANA** has successfully completed **Java** test organized at **Government Degree College Movva** by **VSRGDC MOVVA** with course material provided by the Spoken Tutorial Project, IIT Bombay. Passing an online exam, conducted remotely from IIT Bombay, is a pre-requisite for completing this training.
DEVARAPALLI suresh from **Government Degree College Movva** invigilated this examination. This training is offered by the Spoken Tutorial Project, IIT Bombay.

Credits: 4   **Score:** 45.00%

January 30th 2021

Prof. Kannan M Moudgalya
IIT Bombay

Spoken Tutorial
Project at
IIT Bombay

2625922D8N

Instruction For Participants for Taking the Test
Procedure to be followed by the Participants/Students for taking the Online Test

Steps for taking the Test:

Step 1:
- Login to the Student Dashboard (http://spoken-tutorial.org/participant/login/), Go to 'Ongoing Test' and click 'Enroll', The invigilator will mark the Attendance for you.

Step 2:
- Please refresh your browser screen after the invigilator marks your attendance, click 'Enter into Test' in the Ongoing test tab. It will take you to a new window (Spoken Tutorial Online Test Center).

Step 3:
- After you enter your Username and Password, you will see the Homepage where you will get the list of Tests available for variuos FOSS / Courses. Click on the Test which you want to give.

(**Note:** Read the instructions which apear on the screen.)

Step 4:
- Click on "**Attempt Quiz Now**". Then click on "Start Attempt".

Step 5:
- At the end of the test, click on "**Finish attempt**" in the Quiz Navigation Panel. You will get to see "**Summary of Attempts**".
- It will also show if you missed any questions. You can click on " **Return to attempts**" or you can go back and attempt by clicking on the particular question number.

Step 6:
- Confirm by clicking on "**Submit All and Finish**" once you have completed the test.
- You will get your test score on the spot.

Note:
- Duration of the test will be between **20 mins to 45 mins**, depending on the FOSS selected for the Test.
- Answer all the questions, don't leave out any.
- Please note that you will be able to view the certificate only on scoring **40% or above**.
- Login with your Username and Password in the 'Participant Dashboard' for **downloading the Certificates**.
- Participants who don't pass in the Test, will get a chance to re-attempt the Test after a gap of **15 days**.

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pass
05

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Pass   fail
Nil   10