FUNDAMENTALS OF THE JAVA (TM) PROGRAMMING LANGUAGE – SL110

1 Name : **FUNDAMENTALS OF THE JAVA (TM) PROGRAMMING LANGUAGE – SL110**
2. Sector : **Information & Communication Technology (ICT)**
3. Code : **ICT 112**
4. Entry Qualification : HSC pass.(12th Std.)
5. Terminal Competency: After completion of training, participants would be able to Demonstrate knowledge of JAVA technology, The JAVA programming language, and the product life cycle. Use various JAVA programming language constructs creates several JAVA technology applications. Use decisions & looping constructs & methods to dictate program flow. Implement intermediate JAVA technology programming & object oriented concepts in JAVA technology programs.
6. Duration : 300 Hrs

8. Contents given below

Practical Competencies	Underpinning Knowledge(Theory)
A First simple program • Use of syntax of variables & define variables • Data types • Operators • Class,Functions,Structures • Compile & execute program **Key Concepts** • Key Concepts of JAVA Programming **Object Oriented Programming** • Object oriented analysis **Short program using data types, variables** • Declare, initialize & use variables & constants according to JAVA programming, • coding standards • Programs by using operators **Program by type casting & promotion** • Promotion & type casting • Object reference variables in relation to primitive variables **Relational & conditional operators** • Program development using relational & conditional operators **Control statements** • Program by using if & if else constructs • Switch constructs • Programs using loops	**Object oriented programming** Identify four components programming in the JAVA programming language **Explaining Java technology** • Intro. to JAVA • Key concepts of JAVA programming • Three JAVA technology product groups • seven stages of product life cycle • **Data types, Variables** • Use of syntax of variables & define variables • Data types • Operators **Type conversion & casting & promotion** • Use promotion • Use type casting • Use type conversion **Relational & conditional operators** • Identify relational & conditional operators

Arrays

- Program using one dimensional array
- Two dimensional array

Introducing classes

- Design classes from which objects will be created
- Four component of a class run program from the command line
- Program using string class in the JAVA software developer kit (SDK)
- Use the JAVA 2 platform
- Classes in Application programming interface (API)

Introducing methods

- Calling methods
- Declare & invoke a method
- Developing programs using methods
- Use overloaded methods
- Use main method in a test class to run a program from the command line
- Pass arguments to the main method for use in a program

Encapsulation & constructors.

- Implementing Encapsulation & constructors.
- Create constructors to initialize objects

Implementing inheritance

- Program to define & test your use of inheritance
- Implement intermediate JAVA technology programming & object- oriented (OO) concepts in JAVA Technology programs.
- Solve logic problems

Control statements

- If & if/else constructs
- switch constructs
- loop constructs

Arrays

- One dimensional arrays
- Set array values using loop, pass argument
- Two dimensional arrays

Introducing classes

- Classes from which objects will be created
- Declare initiate
- Object reference variables
- Use a class in the JAVA software developers kit (SDK)
- Use the JAVA 2 platform
- Learn classes in API

Introducing methods

- Study of developing & using methods,
- Advantages, declaring, invoking & overloading methods
- Compare objects & static method

Encapsulation & constructors.

- Encapsulation to protect data
- Create constructors to initialize objects

Implementing inheritance

- Define & test your use of inheritance

LIST OF TOOLS & EQUIPMENTS

1) Center Server
   Intel P IV 2.0 GHz ,Intel Celeron 2.0 Ghz or AMD Athlon 2000 or above
   2 GB RAM ideal, 80 GB Ultra SCSI-3 / SATA hard disk
   Windows 2003 Standard Server with CAL Licenses
   Anti Virus Program

2). Center Workstations (Upto xx Nos)
   Intel P IV 1.3 GHz , Intel Celeron 1.3 Ghz or AMD Athlon 1300 or above
   40 GB IDE / EIDE Hard disk
   512 MB DDR RAM , 10/100 BaseT PCI Ethernet,Sound Card
   2 Serial, 1 Parallel, 2 Universal Serial Bus ports
   101/104 PS2 Keyboard,Three Button Mouse,Headphones
   14 " SVGA Monitor or above, Anti Virus Program, Central Networking
   CAT-5 Structured Cabling with RJ-45 connectors, Patch Cables
3) Power Back up
4) Network Switch, Modem
5) Patch Cables and jacks, Peripherals
6) Center Workstations are connected to Center Server through Local Area Network via a Switch.
7) ISDN / Leased line / Dial-up / Cable / DSL connectivity for communication and internet.
8) A telephone line for Internet Purpose (broadband connection with modem)
   Internet account from Local internet service provider
9) Server Peripherals
   Flat bed Scanner with at least 600 dpi resolution
   600 dpi resolution LaserJet /Inkjet Printer
   CD writer ,DAT drive OR Zip Drive OR External hard disk for backup
   Web cam , Software Tools , Tools for Hands-on sessions

10)Software :
   Operating System: Windows XP
   Licensed Versions of MS Office XP or OpenOffice.org
   Microsoft MSN Messenger or Yahoo Messenger.
   Web Browser (Internet Explorer version 6.0 or above)
   Open Solaris operating system
   Java SE6 with NetBeans 5.5 and JDK 6