Pages 1 -20 in Java Programming *A Comprehensive Introduction*

**Section 1: Key Terms and Acronyms for Basic Computing**

CPU – Central Processing Units. All the requirement parts are in the CPU units.

Computer hardware- Computer hardware is the physical body of the computer that you can touch. Like monitor, mouse, keyboard, CPU

Computer Software- Computer software is something that you can see but you cannot touch and feel it like hardware. Like, Java, C, C++, and Microsoft Word etc.

Input Device (Give 1 Example)- Keyboard, Flash drive,

Output Device (Give 1 Example)- Monitor

Memory- RAM (Temporarily memory), general store memory, ROM (Permanent memory)

Operating System – (Give a 2 Examples) – Windows, Mac OS, Lennox

Server- A server is a computer program or a machine that waits for requests from other machines or software and responds to them. Its main job is to “Serving”. A server typically processes data. The purpose of a server is to share data or hardware and software resources among clients. It stores data like videos, music, etc

Internet- It is a global system of interconnected computer networks that use the internet protocol suite (TCP/IP) to link billions of devices worldwide.

Propriety / Closed Source – Close source is opposite of open source. The source code does not share in the public for anyone to look at or change. Companies that make money usually have close source so that nobody can change/copy it.

Free / Open Source – Open source is opposite of close source. The main internal code shares in public and anyone can make changes and copy the credentials. It is mostly free/cheaper than Closed Source.

**Real World Application:** What percentage of major programming and software design, used regularly by the general population, is closed source and what’s the effect? Brief please…

I think general people more regularly use open source. Because an organization/ person owned a close source, they usually charge in order to use it. By saying, they may want buy a physical device that support their software or they want to sell software itself. But although it can be expensive at the beginning, it may be flawless and work effectively because companies are responsible for their products.

**Section 2: Basic Programming Terms / Concepts**

Programming Language (Give 2 Examples)- Java, C, C++, Python

Binary in Relation to Computers- 1’s and 0’s

Source Code- The code that human can read and understand but computer can’t understand

Machine Code- The code that computer can understand that is 1’s and 0’s

Compiler- Its also called mediator that converts human readable code into computer readable code (0’s and 1’s)

What are difference between Python and Java? – These two programs are widely used by developers and there are many similarities and differences in between Java and Python.

Differences

1. Java creates applications that works in different platform, while python can’t
2. Java program tends to run slower than Python
3. Java uses traditional braces to start and end blocks, while Python uses indentation
4. Java employs static typing means its need to declare variable before use it, but Python is dynamically typed
5. Python is simpler and more compact than Java
6. Java is slower in the sense that it need more words for the same output than python

Syntax

(write a sentence that has incorrect syntax, but correct semantics) - The term syntax refer to grammatical structure. E.g ram eat rice, here ‘R’ has to be capitalization

Semantics

(write a sentence that has correct syntax, but incorrect semantics) – Semantics refers to the meaning of vocabulary symbols. E.g I now it, here missing of ‘K’ is a semantics error.

Why does the syntax and semantics in computer programming have to be exact?

Because each words has its own relations to binary numbers (1’s or 0’s). They all represents fix binary numbers.

Understanding the Program Development Cycle

1. Understanding the problem

2. Plan the logic.

3. Code the program

4. Use Software (a compiler) to translate the program into machine language.

5. Test the program.

6. Put the program into production.

7. Maintain the program.

Debugging- Debugging is the process to identify and remove the errors form computer’s hardware or software.

Program maintenance / maintenance- It is the process to update programs to reflect changes in the organization’s business or to adapt to new operating environment. Maintaining old programs is much more difficult than writing a new program.

What do updates released by software creators do? Updating a program means adding new features, and removing unnecessary things that halt software efficient use in user prospective. It is a part of debugging.

**Section 3: JAVA**

Name 5 good reasons to learn Java.

There are many reasons, five are as follow:

1. It can run smoothly in any platform
2. There are numerous tools, IDE available for efficient coding in Java
3. It has an incredible tools
4. Java is object oriented and it has best practice of object oriented
5. Its IDEs is best that has strong typing and its not only notified the immediately error but also gives suggestions
6. There are lots of jobs available in Java platform.

Origins of Java- Java was created by sun engineers called Green Team in early 90’s. James Gosling, Mike Sheridan, and Patrick Naughton initiated the Java language project in June 1991. Java was known by Oak at the first but later changed name to “Java”

IDE- IDE (Integrated Development Environment) is a software application which enables users to more easily write and debug Java programs. Many IDEs provide features like syntax highlighting and code completion, which help the user to code more easily.

Java Virtual Machine- It is an abstract computing machine that enables a computer to run a Java program.

List 5 applications for Java in the “real world.” Java used in real world from commercial e commerce websites to android apps, from scientific application to financial application like electronic trading system, and in games.

Used in

1. Android Apps
2. Server Apps at Financial Service Industries
3. Java web applications
4. Software tools
5. Trading Applications
6. Big Data technologies

List 4 Basic Syntax rules- Are,

1. Object – it has states and behaviors
2. Class – a class can be defined as a template/ blur print that describes the behaviors/states that object of its type support
3. Methods – a method is basically a behavior. A class can contain many methods.
4. Instance variables – Each object has its unique set of instance variables.

**Real World Application:** Computers understand a unique language. Programmers design the way computers receive data, manipulate data, then output data. Do computers or computer programs have intelligence, are they capable of thought? – Computer programs is not intelligence and they are not capable of thought as it is only capable enough to do the task that is based on a human design it to do so.

**Introduction to NetBeans 8.0**

Create a Java Program that prints your name and student ID number. Add a single line comment and a multi-line comment in your source code. Once you have completed your Program attach a snipping photo of your program below and submit using your flash drive during lab-time