

COMPUTER APPLICATIONS

Tutorial on JAVA

Dheeraj Mehrotra
City Montessori School & Degree College
Lucknow (India)
attention@computerscienceexpertise.com
www.computerscienceexpertise.com
Towards QUALITY IT LITERACY FOR ALL

Concept of OOP

- OOP stands for Object Oriented Programming. It is the latest trend in programming languages supported by C++ and Java and has had the revolutionary success in the race of OOP. The limitations of the Procedure Oriented Programming (POP) languages, have given place to the development of the OOP.

attention@computerscienceexpertise.com

CLASSES & OBJECTS

- Object :
- An object is an identifiable entity with some characteristic and behaviour.
- Class :
- A Class is a group of objects that share common properties and relationships.
- The Objects are variables of type Class eg.
- If animal has been defined as a Class, then the statement;
- animal dog;
- will create an Object featuring dog belonging to the class animal.

attention@computerscienceexpertise.com

CORE CONCEPTS OF OOP

○ The basic concepts of Object Oriented Programming (OOP) are :

- n Abstraction
- n Encapsulation
- n Inheritance
- n Polymorphism

attention@computerscienceexpertise.com

Features of OOP

- **Abstraction** refers to the act of representing essential features without including the background details or explanations.
- **Encapsulation** is an act of wrapping up of data and methods into a single unit (called class). It is one of the most fundamental concepts of the Object Oriented programming. The very insulation of the data from direct access by the program is termed as Data Hiding. Encapsulation, is hence, just a way to implement **Abstraction**.
- **Inheritance** is the process by which objects of one class acquire the properties of objects of another class. This further provides an important extension to the idea of reusability. i.e. a particular programmer can make use of an existing class and without any further modifications, add additional features and capabilities to it, by deriving a new class from the existing one, through inheritance.
- **Polymorphism** is the capacity to allow objects having different internal structures to share the same external interface. It is the ability for a message or data to be processed in more than one form.

attention@computerscienceexpertise.com

ADVANTAGES OF OOP

- Elimination of redundant coding system and usage of existing classes through inheritance.
- Programs can be developed by sharing existing modules.
- Security of data values from other segments of the program through data hiding.
- Possibility of co-existence of multiple instances of an object without any interference.

attention@computerscienceexpertise.com

Few Examples of OOP Languages

- The different Object Oriented Programming Languages are C++ , Java, Smalltalk, Simula, Eiffel etc.

attention@computerscienceexpertise.com

History of JAVA

- JAVA is an object oriented programming language. It was developed by Sun Microsystems in 1991 as a part of the research work to develop software for consumer electronics. It was designed to be small, simple and portable across platforms and operating systems, both at the source and at the binary level. It was developed as a full-fledged programming language in which one can accomplish the same sorts of tasks and solve the similar problems that one can in other programming languages, such as C++ , BASIC etc.

attention@computerscienceexpertise.com

About JAVA

- Modeled after C++, the Java language was designed to be small, simple, and portable across platforms and operating systems, both at the source and at the binary level.

attention@computerscienceexpertise.com

Why JAVA

- The Java language was developed at Sun Microsystems in 1991 as part of a research project to develop software for consumer electronics devices- television sets, VCRs, toasters, and the other sorts of machines you can buy at any department store. Java's goals at that time were to be small, fast, efficient, and easily portable to a wide range of hardware devices. It is those same goals that made Java an ideal language for distributing executable programs via the World Wide Web, and also a general-purpose programming language for developing programs that are easily usable and portable across different platforms. This is the major reason why Java is said to be the most successful platform independent language.

attention@computerscienceexpertise.com

Thank You for previewing this eBook

You can read the full version of this eBook in different formats:

- HTML (Free /Available to everyone)
- PDF / TXT (Available to V.I.P. members. Free Standard members can access up to 5 PDF/TXT eBooks per month each month)
- Epub & Mobipocket (Exclusive to V.I.P. members)

To download this full book, simply select the format you desire below

