A

SEMINAR REPORT

ON

"OBJECT-ORIENTED PROGRAMMING USING JAVA"

Submitted to

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

In partial Fulfillment of the requirement for the award of

SECOND YEAR

IN COMPUTER ENGINEERING

BY

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UNDER THE GUIDANCE OF

Mr. Shinde V.S.

DEPARTMENT OF COMPUTER ENGINEERING

SHRIRAM INSTITUTE OF ENGINEERING AND TECHNOLOGY (POLY), PANIV

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AFFILIATED TO

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

SHRIRAM INSTITUTE OF ENGINEERING AND TECHNOLOGY (POLY), PANIV

CERTIFICATE

This certify that the Seminar report entitled

"OBJECT-ORIENTED PROGRAMMING USING JAVA"

Submitted by

Mr. Vivek Ananta Taware

Is a record of Bonafide work carried out by the student in the partial Fullfillment of the requirement for the award of Second Year Engineering (Computer Engineering) at Shriram Institute Of Engineering And Technology (Poly), Paniv under the Dr. Babasaheb Ambedkar Technological University, Lonere . This work is done during year 2024-2025.

Date: / /

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Date:		Principal

ACKNOWLEDGEMENT

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Introduction

Java is a high-level, class-based, object-oriented programming language that is designed to have as few implementation dependencies as possible. It is a general-purpose programming language intended to let programmers *write once, run anywhere* (WORA),[16] meaning that compiled Java code can run on all platforms that support Java without the need to recompile.[17] Java applications are typically compiled to bytecode that can run on any Java virtual machine (JVM) regardless of the underlying computer architecture. The syntax of Java is similar to C and C++, but has fewer low-level facilities than either of them. The Java runtime provides dynamic capabilities (such as reflection and runtime code modification) that are typically not available in traditional compiled languages.

Java was originally developed by James Gosling at Sun Microsystems. It was released in May 1995 as a core component of Sun's Java platform. The original and reference implementation Java compilers, virtual machines, and class libraries were originally released by Sun under proprietary licenses. As of May 2007, in compliance with the specifications of the Java Community Process, Sun had relicensed most of its Java technologies under the GPL-2.0-only license. Oracle offers its own Hot Spot Java Virtual Machine, however the official reference implementation is the OpenJDK JVM which is free open-source software and used by most developers and is the default JVM for almost all Linux distributions.

Abstract

The abstract keyword in Java is used to declare a class or a method that cannot be instantiated directly or must be implemented by subclasses, respectively. It is a key part of Java's abstraction mechanism, allowing developers to define abstract classes and methods that provide a blueprint for other classes….

An abstract data type defines only the variables and methods, including the parameters and return types of those methods, without determining how they are implemented. That's why it's abstract, you're determining what the data type can do, but not how it does it. In Java, this is usually accomplished using interfaces

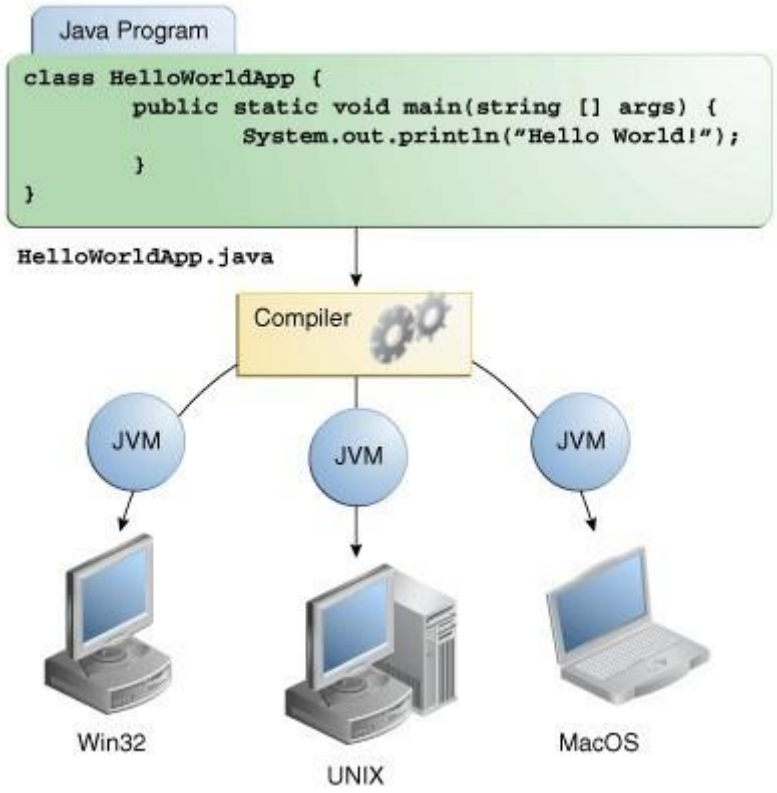
Scope Of Project

The scope of a Object Oriented Programming Using Java includes several key features and functionalities:

In Java, scope defines where a certain variable or method is accessible in a program. Variables can be defined as having one of three types of scope: Class level scope (instance variables): any variable declared within a class is accessible by all methods in that class. Depending on its access modifie

- Java Card for smart-cards.
- Java Platform, Micro Edition (Java ME) – targeting environments with limited resources.
- Java Platform, Standard Edition (Java SE) – targeting workstation environments.
- Java Platform, Enterprise Edition (Java EE) – targeting large distributed enterprise or Internet environments.

Control Flow



Use of Technology

- **Android**

  Java is a core component of the Android operating system, which powers the majority of smartphones globally.
- **Machine learning and data science**

  Java is a popular language for these applications.
- **Web applications**

  Java is a framework for developing web applications, which are a foundation for digital businesses.
- **Enterprise applications**

  Java application servers are used to deploy enterprise applications, providing functions like security, transaction management, and scalability.
- **Platform independence**

  Java is platform independent because the Java compiler turns code into Java bytecode, which can run on any Java virtual machine (JVM).
- **Java Development Kit (JDK)**

  The JDK is a distribution of Java technology that includes a compiler, a virtual machine, and other utilities.
- **Java frameworks**

  Some examples of Java frameworks include Java Topology Suite (JTS), JaxP, JBoss Seam, JDom, Jersey, Jetty, JFree Chart, J Hipster, JMonkey Engine, JProfiler, JRockit, JSF, JSoup, and JUni

Requirement

To program in Java, you'll need the Java Development Kit (JDK) and a laptop that meets certain requirements:

- **JDK**

The JDK includes the Java Runtime Environment (JRE), which is required to run Java applications. The JDK also includes development tools like the Java compiler.

- **RAM**

A laptop with at least 8 GB of RAM is recommended for running heavy IDEs and virtual machines.

- **Processor**

A faster processor, like an Intel Core i5, is recommended for handling large projects and multiple applications.

- **Screen**

A laptop with a screen that's at least 40 in, has a resolution of at least 1920 x 1200, and has a brightness of at least 350 nits is recommended. A higher resolution and brightness will make the code easier to see, especially in brightly lit environments.

Output


document.getElementById(div).
else if (i==2)
{
var atpos=inputs[i].indexOf("
var dotpos=inputs[i].lastIndexOf(".
if (atpos<1 || dotpos<atpos+2
document.getElementById('errEmail').
else
document.getElementById(div).
}
if (i==5)

```
34      if (FlagNewNum) {
35          FKeyPad.ReadOut.value  = Num;
36          FlagNewNum = false;
37          }
38      else {
39          if (FKeyPad.ReadOut.value == "0")
40          FKeyPad.ReadOut.value = Num;
41              else
42                  FKeyPad.ReadOut.value += Num;
43          }
44      }
45
46      function Operation (Op) {
47      var Readout = FKeyPad.ReadOut.value;
48      if (FlagNewNum && PendingOp != "=");
49      else
50          {
51              FlagNewNum = true;
52              if ( '+' == PendingOp )
53              FKeyPad.ReadOut.value = parseFloat(FKeyPad.ReadOut.value);
54              else if ( '-' == PendingOp )
55              Accumulate -= parseFloat(Readout);
56              else if ( '/' == PendingOp )
57              FKeyPad.ReadOut.value = parseFloat(FKeyPad.ReadOut.value);
58              else if ( '*' == PendingOp )
59              Accumulate *= parseFloat(Readout);
60              else
61                  Accumulate = parseFloat(Readout);
62                  FKeyPad.ReadOut.value = Accumulate;
63                  PendingOp = Op;
64          }
```

Advantages

- java is simple language. ¬Java does not support POINTERS.
- Java is first language in which programs can be executed using web.
- Write once run anywhere(WORA)

Disadvantages

- Slow performance.
- No support for low level programming.
- Poor features in java. ¬No control over Garbage collection.

Future Scope

The scope of a Object Oriented Programming Using Java includes several key features and functionalities:

Java is still a dominant programming language in the coding industry, and is expected to remain so in the future:

- **Job opportunities**: Many businesses, both new and existing, need Java programmers.
- **Popularity**: Java is one of the most popular programming languages, along with Python and the C family of languages.
- **Long-term support**: As of November 2024, Java 8, 11, 17, and 21 are supported as long-term support (LTS) versions. The next scheduled LTS version is Java 25, which is scheduled for release in September 2025.

However, some say that Python may eventually replace Java as the most commonly used programming language. Python is favored by those working in back-end development, app development, data science, and machine learning. Python also dominates key technology growth areas like machine learning, data science, DevOps, and web development.

Conclusion

Java is a versatile and powerful programming language that is likely to continue to be a significant part of the programming world:

Ease of use: Java is easy to learn and write code in because it's an object-oriented language.

Platform independence: Java's platform independence allows programs to be deployed across multiple devices and operating systems.

Speed and performance: Java is known for its speed and performance, making it a good choice for high-performance applications.

Security features: Java's security features make it a good choice for developers of all skill levels.

Teaching language: Java is a good teaching language because it allows students to learn object-oriented programming without the complexity of C++.

Community of developers: Java has a large community of developers.

Ability to adapt: Java has the ability to adapt and integrate with new technologies

References

- Java has a huge standard library (The Java API). • From now on, your primary reference shall be:
- http://docs.oracle.com/javase/7/docs/api/ Very useful tutorials: Java Language:
- http://docs.oracle.com/javase/tutorial/java/index.html Other concepts (Network, concurrency, graphics …)
- http://docs.oracle.com/javase/tutorial/
- Vivek Taware github:/vivektaware0505:Github/https://www.linkedin.com/in/vivektaware085476241?utm_source=share&utm_campaign=share_via&utm_content=profile&utm_medium=android_app