

# **UNIT-1**

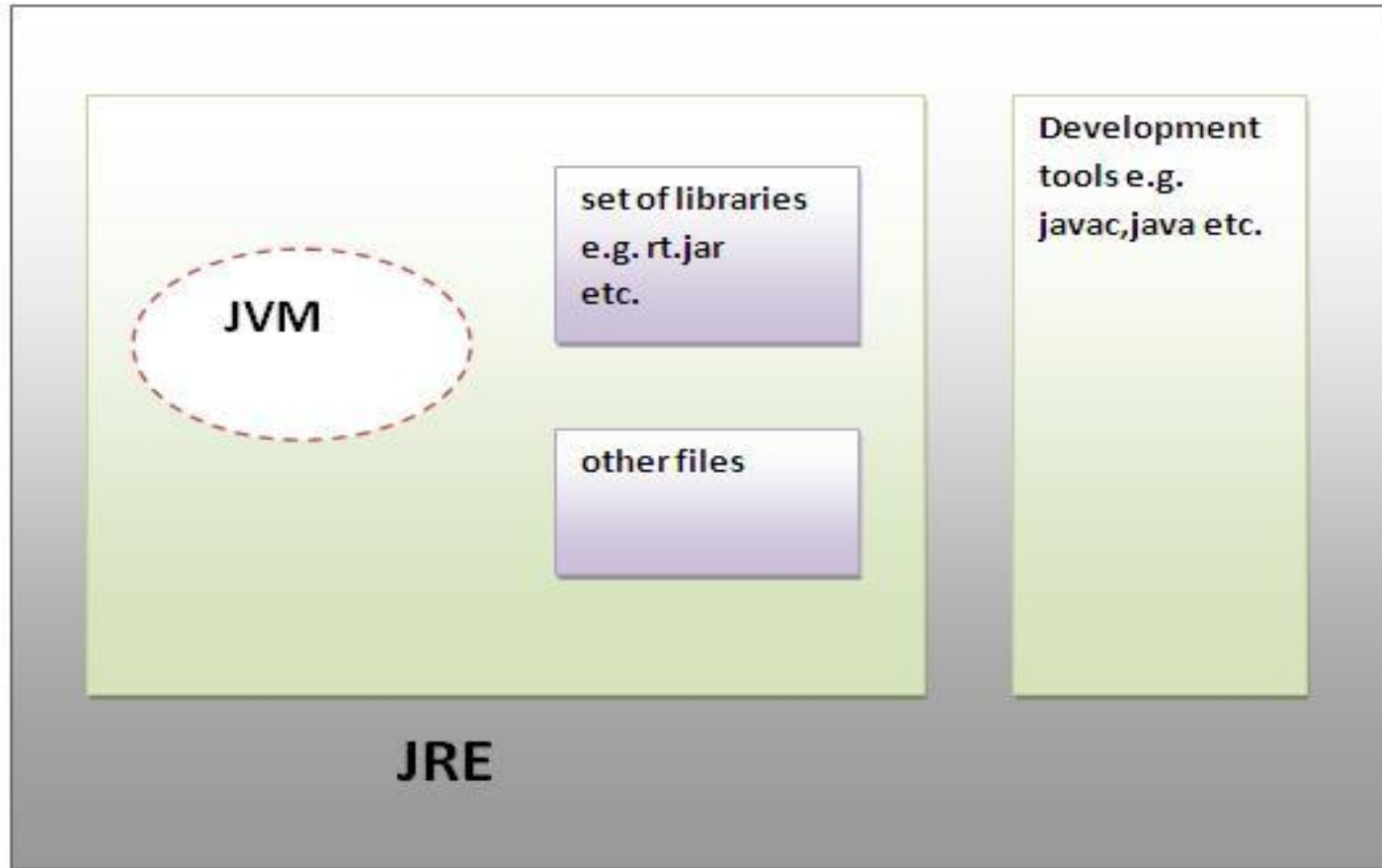
## **INTRODUCTION TO JAVA**

# **JDK**

## **(JAVA Development Kit)**

# JDK

- The Java Development Kit (JDK) is a **software development environment** which is used to develop **java applications and applets.**
- It **physically exists.**
- It contains **JRE + development tools.**



# **JRE**

## **(JAVA Runtime Environment)**

# JRE

- The Java Runtime Environment is a **set of software tools which are used for developing Java applications.**
- It is used to provide the runtime environment.
- It is the **implementation of JVM.**
- **It physically exists.**
- It contains a set of **libraries + other files** that JVM uses at runtime.

# **JVM**

## **(JAVA Virtual Machine)**

# JVM

- JVM (Java Virtual Machine) is an **abstract machine**.
- It is called a **virtual machine** because **it doesn't physically exist**.
- It is a specification that provides a runtime environment in which Java **bytecode** can be executed.
- It can also run those programs which are written in other platforms and compiled to Java bytecode.



# JVM

- The JVM performs following operation:
  - Loads code
  - Verifies code
  - Executes code
  - Provides runtime environment

# JVM

- JVM provides definitions for the:
  - Memory area
  - Class file format
  - Register set
  - Garbage-collected heap
  - Fatal error reporting etc.

# Bytecode

# Bytecode

- **Bytecode** is intermediate code which is produced by **JAVA compiler**, by compiling the source code.
- It is **machine independent code**
- It's **stored in .class file** after compilation of the source code.
- Bytecode implementation **makes JAVA platform independent** programming language.

