SIX WEEKS INDUSTRIAL TRAINING

AMRITSAR GROUP OF COLLEGES

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(Formerly Known as Amritsar College of Engineering & Technology | Amritsar Pharmacy College)

Synopsis

On

"LIVE CRICKET SCORE APP"

Submitted in the Partial fulfilment of the requirement for the Award of Degree of Bachelor of Technology

In

COMPUTER SCIENCE & ENGINEERING (2020-24)

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INTRODUCTION TO PROJECT

Live Cricket Score App, is a simple console-based application. This application uses the **CricBuzz** API to get the desired details. The API exposes the match data in XML format (Extensible Markup Language, which is commonly used to describe Data). XML is used to pass data between applications, often those applications are written in different programming languages, hence, XML gives us a common data format.

It maintains the information about the Cricket and official details of the Cricket. **Cricbuzz** is an Indian cricket news website owned by Times Internet. It features, news, articles and live coverage of cricket matches including videos, text commentary, player stats and team rankings. Their website also offers a desktop application.

Cricbuzz is one of the most popular mobile or desktop apps for cricket news and scores in India.

One of the highlights of using this application is that it offer live scores of all matches played even during wee hours of the night. More importantly, Cricbuzz provides ball-by-ball text commentary that you can read to get a vivid mental image of the action as the game progresses. If you prefer live commentary, you are in luck because the app provides a clear live audio commentary in English and a couple of regional languages that you can listen to from home or at your office.To help you manage your time and schedule, you will get match alerts using push notification service as well as a list of upcoming matches. There is also a map view of matches that shows you the different location that the games are scheduled to be played in. In case you miss a game, you will still be able to know the outcome by viewing results of all recent matches.

OBJECTIVE OF PROJECT

The objectives of this Cricket Score application is:-

1. Create a simple console-based application in Java.
2. Access the **CricBuzz** Web Service APIs to get the score data.
3. Primary use of java networking API (java.net) for accessing a web service.
4. To use decision-making constructs for applying application logic.
5. Demonstrate the inheritance and polymorphism principles.

FEATURES OF PROJECT

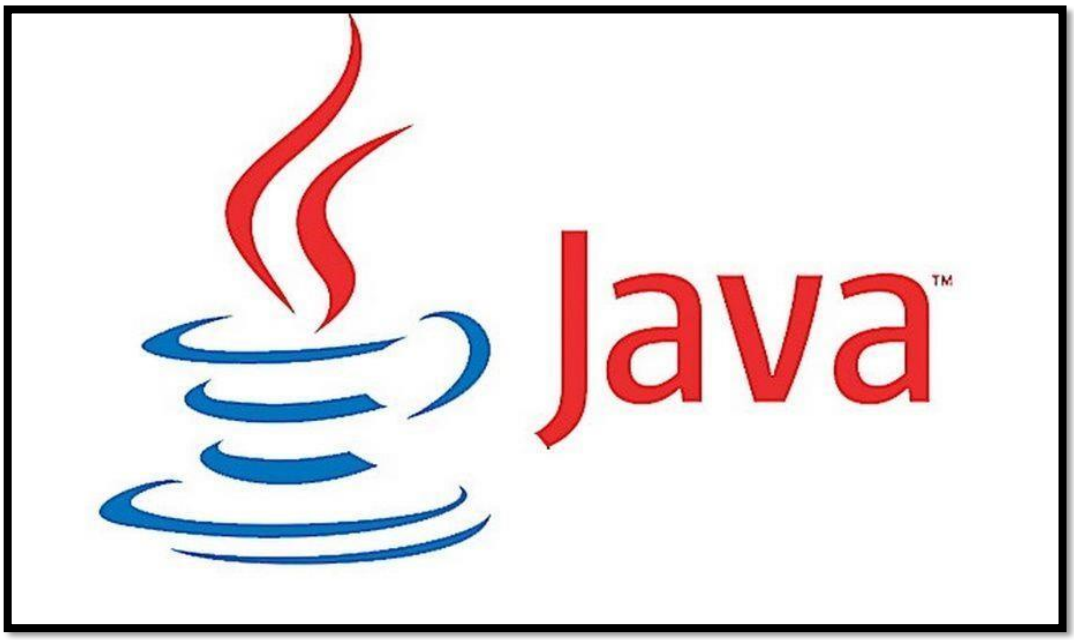
Cricbuzz is known for its outstanding features like fast scoring, detailed commentary, full scoreboard, simple interface, and many other things that ultimately help this platform to gain millions of active users in a very short time.

There are many features of **Cricbuzz** desktop application:-

- Superfast scores and commentary.
- Highly engaging and entertaining ball-by-ball commentary.
- Notifications for live matches and breaking news.
- Latest cricket news and editorials.
- Schedules of upcoming matches.
- Real-Time Cricket Updates
- Simple Interface
- Dark Theme
- Top Stories
- Amazing Video Content

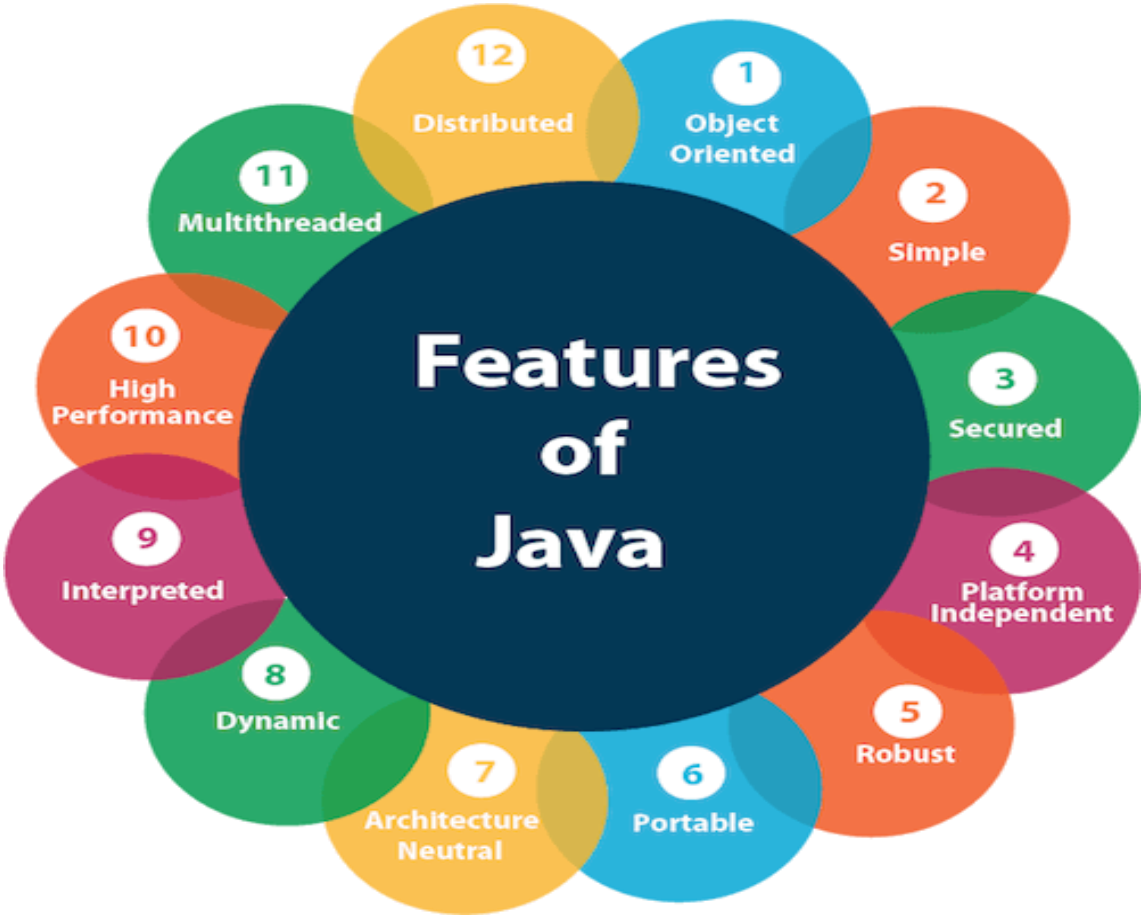
FRONT END

Java is a general purpose and the most popular object-oriented programming language. Java was developed by James Gosling and his colleagues at Sun Microsystems in the early 1990's.



Due to its simplicity and easy to learn and advanced features, we opted this language for our six months industrial training. This language supports many interesting features that make it an ideal language for software development. In addition to the object oriented features, it also provides features such as platform independence, security, multithreading, portability; etc which makes it well suited for the web and networked services, applications, platform-independent desktops, robotics and any other embedded devices.

FEATURES OF JAVA

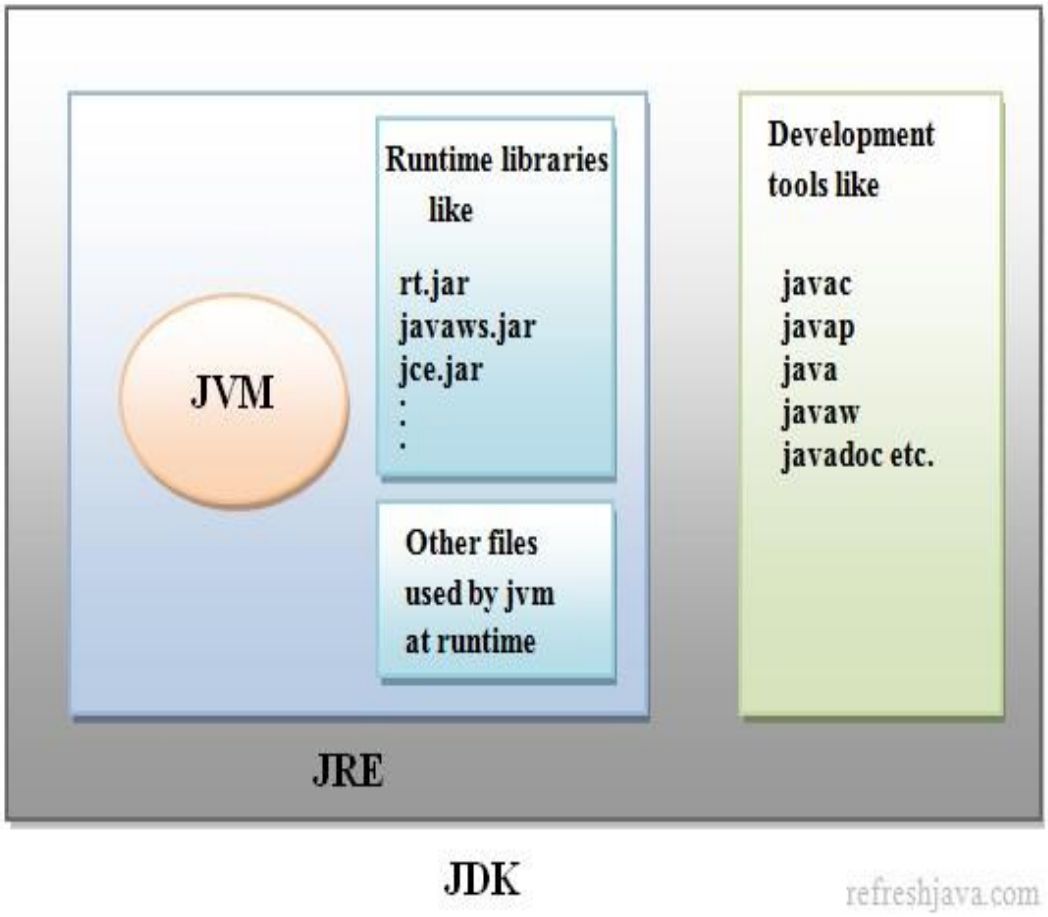


- **Simple**: Java is a compact and simple language. Programs are easy to write and debug as it omits many clumsy, poorly understood and confusing features of other programming languages such as C++.
- **Object-oriented:** Java is purely object-oriented language because programming in java is centered on creating objects; manipulating objects and making objects work together.
- **Distributed:** Java is a distributed language which means that the programs can be designed to run on computer networks. Java provides an extensive library of classes for communicating using TCP/IP protocols such as HTTP and FTP. This makes creating network connections much easier.

- **Robust:** Java is designed for writing programs that are highly robust. By robust, we mean reliable.
- **Secure:** As java is intended to be used in networked/distributed environments so it implements several security mechanisms to protect you against malicious code that might try to invade your file system.
- **Architectural Neutral:** This means that the programs written on one platform can run on any other platform without having to rewrite or recompile them. It follows 'Write-once-run-anywhere' approach.
- **Portable:** In Java, the size of the primitive data types is machine independent. These consistencies make java program portable among different platforms such as Windows, UNIX and Mac.
- **Interpreted:** Java is such a language that is both compiled and interpreted. The two steps of compilation and interpretation allow extensive code checking and improved security.
- **High performance:** Java programs are complied with portable intermediate form known as byte codes, rather than to native machine level instructions and JVM executes java byte codes on any machine on which it is installed. This architecture means that java programs are faster.
- **Multithreaded:** Java is also a multithreaded programming language. It allows you to write a program that can do many tasks simultaneously.
- **Dynamic:** Java is designed to be dynamic. Classes are stored in separate files and are loaded into the Java Interpreter only when they are needed.
- **Platform Independent:** Java is platform independent. Because the Java compiler converts the source code to bytecode, which is Intermidiate Language. Bytecode can be executed on any platform (OS) using JVM(Java Virtual Machine).

JAVA DEVELOPMENT KIT (JDK)

The Java Development Kit (JDK) is a software package that sun has made available to public. It includes all the basic components that makeup the java environment. These include the Java compiler, Java Interpreter, an applet viewer that lets you see applets without opening a Java-compatible web browser.



APPLICATIONS OF JAVA

Java has evolved from a simple language providing interactive dynamic content for webpage's to a predominant enterprise-enables programming language suitable for developing significant and critical applications.

Today, Java is used for many applications like:

- Web based applications
- Financial applications
- Gaming applications
- Embedded applications
- Distributed enterprise applications
- Mobile applications
- Image applications
- E-business applications
- Desktop applications and many more.

BACK END

MySQL

MySQL is a open source Relational Database Management System. MySQL is very fast reliable and flexible Database Management System. It provides a very high performance and it is multi threaded and multi user Relational Database management system.

MySQL is one of the most popular relational database Management System on the web. The MySQL Database has become the world's most popular open source Database, because it is free and available on almost all the platforms. The MySQL can run on Unix , window, and Mac OS. .

MySQL source code is available that's why now you can recompile the source code.

Features:

The following list describes some of the important **Features of MySQL** Database Software.

- **Internals and Portability**
  - Written in C and C++.
  - Tested with a broad range of different compilers.
  - Works on many different platforms.
  - The **MySQL** code is tested with Purify (a commercial memory leakage detector) as well as with Valgrind, a GPL tool

- The server is available as a separate program for use in a client/server networked environment. It is also available as a library that can be embedded (linked) into standalone applications. Such applications can be used in isolation or in environments where no network is available.

- Column Types

  - Many column types: signed/unsigned integers 1, 2, 3, 4, and 8 bytes long, FLOAT, DOUBLE, CHAR, VARCHAR, TEXT, BLOB, DATE, TIME, DATETIME, TIMESTAMP, YEAR, SET, ENUM, and OpenGIS spatial types.
  - Fixed-length and variable-length records.
  - Statements and Functions
  - Full operator and function support in the SELECT and WHERE clauses of queries.
  - Full support for SQL GROUP BY and ORDER BY clauses. Support for group functions (COUNT(), COUNT(DISTINCT ...), AVG(), STD(), SUM(), MAX(), MIN(), and GROUP_CONCAT()).
  - Support for LEFT OUTER JOIN and RIGHT OUTER JOIN with both standard SQL and ODBC syntax.
  - **Support for aliases on tables and columns as required by standard SQL.**
  - DELETE, INSERT, REPLACE, and UPDATE return the number of rows that were changed (affected). It is possible to return the number of rows matched instead by setting a flag when connecting to the server.

- Security

  - A privilege and password system that is very flexible and secure, and that allows host-based verification. Passwords are secure because all password traffic is encrypted when you connect to a server.

- Scalability and Limits

  - Handles large databases. We use **MySQL** Server with databases that contain 50 million records. We also know of users who use **MySQL** Server with 60,000 tables and about 5,000,000,000 rows.

  - Up to 64 indexes per table are allowed (32 before **MySQL** 4.1.2). Each index may consist of 1 to 16 columns or parts of columns. The maximum index width is 1000 bytes (500 before **MySQL** 4.1.2). An index may use a prefix of a column for CHAR, VARCHAR, BLOB, or TEXT column types.

- Connectivity

  - Clients can connect to the **MySQL** server using TCP/IP sockets on any platform. On Windows systems in the NT family (NT, 2000, XP, or 2003), clients can connect using named pipes. On Unix systems, clients can connect using Unix domain socket files.

  - In **MySQL** versions 4.1 and higher, Windows servers also support shared-memory connections if started with the --shared-memory option. Clients can connect through shared memory by using the --protocol=memory option.

  - The Connector/ODBC (MyODBC) interface provides **MySQL** support for client programs that use ODBC (Open Database Connectivity) connections. For example,

you can use MS Access to connect to your **MySQL** server. Clients can be run on Windows or Unix. MyODBC source is available. All ODBC 2.5 functions are supported, as are many others.

- The Connector/J interface provides **MySQL** support for Java client programs that use JDBC connections. Clients can be run on Windows or Unix. Connector/J source is available.

- Localization
  - The server can provide error messages to clients in many languages.
  - Full support for several different character sets, including latin1 (ISO-8859-1), german, big5, ujis, and more. For example, the Scandinavian characters 'â', 'ä' and 'ö' are allowed in table and column names. Unicode support is available as of **MySQL** 4.1.
  - All data is saved in the chosen character set. All comparisons for normal string columns are case-insensitive.

TOOLS USED

Netbeans - integrated development environment

Net Beans IDE is a free, open source, popular integrated development environment used by many developers. Out of the box, it provides built-in support for developing in Java, C, C++, XML, and HTML. And this author especially likes the support for editing JSPs, including syntax highlighting, HTML tag completion, JSP tag completion, and Java code completion.

The basic steps for making a new project in java are as follows.

1. Create a new project

2. Mount a directory - specify a location to save project files

3. Add a new class to the project

4. Compile and run a Java program

VS Code :- Visual Studio Code

Visual Studio Code is a code editor in layman's terms. Visual Studio Code is "a free-editor that helps the programmer write code, helps in debugging and corrects the code using the intelli-sense method ". In normal terms, it facilitates users to write the code in an easy manner. Many people say that it is half of an IDE and an editor, but the decision is up to to the coders. Any program/software that we see or use works on the code that runs in the background. Traditionally coding was used to do in the traditional editors or even in the basic editors like notepad! These editors used to provide basic support to the coders.

VS Code Support the most common languages are :

- C# ,Visual Basic ,Java-Script ,HTML, CSS ,C ,C++,Java ,R ,XML ,Python etc.

MYSQL Workbench 8.0 CE

MySQL Workbench is a unified visual tool for database architects, developers, and DBAs. MySQL Workbench provides data modeling, SQL development, and comprehensive administration tools for server configuration, user administration, backup, and much more.

MySQL is a open source Relational Database Management System. MySQL is very fast reliable and flexible Database Management System. It provides a very high performance and it is multi threaded and multi user Relational Database management system.

MySQL is one of the most popular relational database Management System on the web. The MySQL Database has become the world's most popular open source Database, because it is free and available on almost all the platforms. The MySQL can run on Unix , window, and Mac OS. .

MySQL source code is available that's why now you can recompile the source code.

Features of MySQL Workbench:

Design

MySQL Workbench enables a DBA, developer, or data architect to visually design, model, generate, and manage databases. It includes everything a data modeler needs for creating complex ER models, forward and reverse engineering, and also delivers key features for performing difficult change management and documentation tasks that normally require much time and effort.

Develop

MySQL Workbench delivers visual tools for creating, executing, and optimizing SQL queries. The SQL Editor provides color syntax highlighting, auto-complete, reuse of SQL snippets, and execution history of SQL.

Administer

MySQL Workbench provides a visual console to easily administer MySQL environments and gain better visibility into databases. Developers and DBAs can use the visual tools for configuring servers, administering users, performing backup and recovery, inspecting audit data, and viewing database health.

Visual Performance Dashboard

MySQL Workbench provides a suite of tools to improve the performance of MySQL applications. DBAs can quickly view key performance indicators using the Performance Dashboard. Performance Reports provide easy identification and access to IO hotspots, high cost SQL statements, and more.

Database Migration

MySQL Workbench now provides a complete, easy to use solution for migrating Microsoft SQL Server, Microsoft Access, PostreSQL, and other RDBMS tables, objects and data to MySQL.

Minimum Hardware Configurations

- Microsoft Windows XP Professional SP3/Vista SP1/Windows 11 Professional:
  - Processor: 800MHz Intel Pentium III or equivalent
  - Memory: 512 MB
  - Disk space: 750 MB of free disk space
- Solaris OS version 11 (SPARC):
  - Processor: Dell intel CORE 21H2
  - Memory: 512 MB
  - Disk space: 650 MB of free disk space
- Solaris OS version 11 (64-bit operating system, x64-based processor):
  - Processor: 11th Gen Intel(R) Core (TM) i3-1115G4 @ 3.00GHz 3.00 GHz
  - Disk space: 650 MB of free disk space
- Macintosh OS X 10.5 Intel:
  - Processor: Single-Core Intel (64-bit)
  - Memory: 512 MB
  - Disk space: 650 MB of free disk space

HARDWARE REQUIREMENTS

Hardware requirements include that hardware which is required for its working. It includes:

- Pentium 4 Computer
- 512 MB RAM
- High Speed Internet Connection (DSL/Cable)

SOFTWARE REQUIREMENTS

The technical specifications of requirements for the software are as follows:

- Any Operating System (Windows, Linux, MAC)
- Java run time environment
- Netbeans (Java IDE)
- VS CODE(Java IDE)
- Java SDK (Software Development Kit)
- Any web browser(Chrome , Firefox , etc)