Types of software environments Set up a basic environment in a virtual machine

Types of Software Environments

1. Development Environment

- **Purpose:**
  Where developers write and test code.
- **Features:**
  - Includes code editors, compilers, debuggers.

  - Fast feedback for developers.
- **Example Tools:**
  VS Code, Git, local servers (XAMPP, WAMP), Docker.

2. Testing Environment

- **Purpose:**
  Where QA/testers check the software for bugs or errors.
- **Features:**
  - Simulates production-like setup.
  - Runs automated or manual tests.
- **Example Tools:**
  Selenium, JUnit, Postman, Jenkins.

3. Production Environment

- **Purpose:**
  Where the final product is deployed for real users.
- **Features:**
  - Stable and secure.
  - High-performance and scalable.
- **Example Tools:**
  Nginx, Apache, cloud platforms (AWS, Azure), monitoring tools.

Setting Up a Basic Environment in a Virtual Machine

Step 1: Install VirtualBox

- Download from: https://www.virtualbox.org/
- Install it on your host OS (e.g., Windows/Linux/Mac).

Step 2: Download an ISO file

- Choose an operating system like:
    - **Ubuntu** (https://ubuntu.com/download)
    - **Windows** (if licensed)

Step 3: Create a New VM

1. Open VirtualBox → Click **New**.
2. Name your VM (e.g., "DevEnv").
3. Choose OS type (Linux) and version (Ubuntu 64-bit).
4. Assign memory (e.g., 2048 MB).
5. Create a virtual hard disk (e.g., 20 GB).

Step 4: Install the OS

1. Start the VM → select the ISO file to boot.
2. Follow the on-screen instructions to install the OS.

Step 5: Set Up Development Tools

After installing the OS, open the terminal and run:

For Ubuntu:

sudo apt update
sudo apt install git build-essential curl
sudo apt install code   # Installs VS Code

You can also install:

- **Node.js**: sudo apt install nodejs npm
- **Python**: sudo apt install python3 python3-pip
- **Java**: sudo apt install openjdk-11-jdk

Optional:

- **Install Docker** for testing containers.
- **Install Apache or Nginx** for simulating a production environment.