Hardware and Software Requirements Specifications

The successful deployment and operation of the project rely on meeting specific hardware and software requirements. This section outlines the necessary components and configurations needed to run the project effectively.

Hardware Requirements:

1. **Operating System**: The project is compatible with various operating systems, including Windows, macOS, and Linux distributions such as Ubuntu, CentOS, and Debian.

2. **Processor**: A multicore processor with a clock speed of at least 1.8 GHz is recommended for optimal performance. Hyper-threading technology can also improve multitasking capabilities

3. **Memory (RAM):** A minimum of 4 GB of RAM is required, although 8 GB or more is recommended for handling larger datasets and concurrent operations. For optimal performance, faster RAM speeds are preferred, especially when dealing with real-time processing tasks.

4. **Storage:** Adequate storage space is required to accommodate the project files, datasets, and temporary files generated during execution. A minimum of 20 GB of free disk space is recommended. Solid-state drives (SSDs) are preferred over traditional hard disk drives (HDDs) for faster read/write speeds and improved overall system responsiveness.

5. **Graphics Card**: While not explicitly required, a dedicated graphics card with OpenGL support may enhance performance, especially for image processing tasks such as those involving OpenCV. Graphics processing units (GPUs) with CUDA or OpenCL support can accelerate certain computational tasks, particularly deep learning algorithms and parallel processing operations.

6. **Network Connectivity**: Stable internet connectivity is essential for accessing remote resources such as Zoom meetings, MySQL databases, and software updates. A wired Ethernet connection is preferred over wireless connections for lower latency and higher reliability, especially in environments with high network congestion.\

Software Requirements:

1. **Python:** The project relies on Python for its implementation. Python 3.x is supported, with Python 3.7 or later recommended. Users should ensure that the appropriate Python interpreter is installed on their system and accessible via the command line interface.

2. **Java Development Kit (JDK):** Certain components of the project utilize Java. JDK version 8 or later is required for compiling and running Java-based modules. Users

should verify that the JDK is properly configured and accessible in their system's PATH environment variable.

3. **Python Libraries:** The project utilizes several Python libraries, including but not limited to:

   - **PYAUTOGUI**: For automating GUI interactions such as clicking buttons and entering text.
   - **NumPy**: For numerical computing and array operations.
   - **MySQL Connector**: For connecting to and interacting with MySQL databases.
   - **OpenCV:** For computer vision tasks such as image processing and object detection.
   - **Schedule:** For scheduling recurring tasks and events.

   These libraries can be installed using the pip package manager and the provided requirements.txt file. Users should ensure that all dependencies are installed in the appropriate Python environment.

4. **MySQL Database:** The project interacts with a MySQL database to store meeting credentials and other relevant data. MySQL version 5.7 or later is recommended. Users should have administrative privileges to create and manage databases, tables, and user accounts within the MySQL server.

5. **Zoom Application:** The Zoom application must be installed on the system and configured with appropriate audio and video settings. Additionally, users should ensure they have valid Zoom accounts for joining meetings. The Zoom application should be running and logged in before the project attempts to join scheduled meetings automatically.

6. **Operating System Dependencies:** Certain operating system dependencies may be required for the proper functioning of the project, such as system libraries and drivers. These dependencies vary depending on the specific operating system used. Users should consult the documentation for their operating system to identify and install any necessary dependencies.

IMPORTANT – Files required for zoom meeting automation implementation are setup , GUI.sh.x file located within zoom folder .

Functional Requirements:

1. Automated Meeting Scheduling: Ability to schedule Zoom meetings automatically based on predefined criteria (e.g., date, time, participant list).

2. Participant Management: Adding, removing, or updating participants for scheduled meetings dynamically. In the system of the zoom meeting automation Intuitive user interface (if applicable)

for configuring automation settings, monitoring scheduled meetings, and troubleshooting issues.

3. Meeting Configuration: Setting up meeting parameters such as Meeting ID, password, duration, and access controls (e.g., waiting room, screen sharing permissions).

4. Meeting Invocation: Automatically starting, joining, and ending Zoom meetings at the scheduled time.

5. Notification System: Sending notifications to participants regarding meeting details, updates, or reminders via email, SMS, or other communication channels.

6. Reporting and Logging: Generating reports/logs of automated meetings, including attendance records, meeting duration, and any errors or exceptions encountered during automation.

Non-Functional Requirements:

1. Security: Ensuring secure transmission and storage of sensitive information (e.g. participant data). Implementing access controls and encryption mechanisms to protect against unauthorized access or data breaches.

2. Reliability: High availability and fault tolerance to ensure continuous operation of the automation system.

- Handling exceptions gracefully and implementing error recovery mechanisms to minimize downtime.

3. Scalability: Ability to scale the automation system to accommodate a growing number of meetings and participants.

- Optimizing resource utilization to handle concurrent requests and maximize performance.

4. Performance: Minimizing latency and response times for scheduling and managing meetings.

- Optimizing resource usage (CPU, memory, bandwidth) to achieve efficient automation without significant overhead.

5. Usability: Intuitive user interface (if applicable) for configuring automation settings, monitoring scheduled meetings, and troubleshooting issues.

Providing documentation and user guides to assist administrators and end-users in utilizing the automation system effectively. Customize this template according to your specific requirements, preferences, and constraints. Ensure to review and refine the document as needed to accurately capture the hardware, software, and functional aspects of your Zoom meeting automation solution.