

**SE 216 – SOFTWARE PROJECT MANAGEMENT**  
**PROJECT NEEDS DOCUMENT**

**PROJECT NAME: TRUE POSTURE**

**GROUP NUMBER and MEMBERS: Section 1 Group 8**

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**Project GitHub Account**



<https://github.com/SE216-8/TruePosture>

#	SOFTWARE NEEDS	DESCRIPTION
1	Operating System	The team will use Windows 11 Pro version 23H2. The operating system will be installed by the IT team before team members take their laptops. The system will be updated automatically to ensure that the system is compatible and secure when there is a new version. The update hours will be arranged at night.
2	Compiler / Interpreter / Development Kits	<u>Python &amp; PyTorch</u> : The team will use Python (version 3.10.14) and PyTorch (version 2.2.1) for progress tracking. The interpreter will be installed by the IT team since it's a long-term support interpreter. <u>React Native</u> : The team will use Node.js (version v20.12.1) to be able to code for the application. The environment will be installed by the IT team and there will not be any update since this version is long-term support. <u>AWS SDK</u> : The team will use AWS SDK (version 2) in order to integrate the cloud system with the application. The SDK will be installed by the IT team and there is no need to update throughout the project. <u>JDK</u> : The team will use JDK (version 21.0.1). The development kit will be installed by the IT team. There will be no updates for JDK.
3	IDE's / CLI's	<u>Image Processing</u> : The team will use MATLAB (version R2024a) for image processing. The application will be installed by the IT team and they will update the app whenever there is a new release. Also, the accounts will be handled by the IT team.

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		<p>In addition, in order to integrate our image processing system, the team will use MATLAB Production Server (version R2024a) features. The installation will be handled by the IT team.</p> <p><u>Android Studio</u>: The team will use Android Studio (version 2023.2.1.24) for application development via React Native. The IDE will be installed by the IT team and there is no need to update throughout the project.</p> <p><u>Python IDE</u>: The team will use PyCharm (version 2024.1) for coding in Python. The IDE will be installed by the IT team and there is no need to update the IDE throughout the project.</p> <p><u>Amazon Command Line Interface</u>: The team will use AWS CLI (version 2) for the operation of AWS. All installations will be done by the IT team for the computers that will be used by the members who are responsible for cloud computation.</p>
4	Testing	The team will use Jest (version 29.7) for React Native code testing. The testing environment will be installed by the IT team and there will be no update throughout the project.
5	Version Control System	The team will use Git (version 2.44.0) for version control with GitHub Desktop (version 3.3.13). There will be no need to update these two systems throughout the project.
6	Build Automation Tool	The team will use Gradle (version 8.6) to control build, dependencies, and deployment. Gradle system will be installed by the IT team and the project's initial arrangements will be done by them as well.
7	Database Management System	The team will use Oracle Database (version 19c (Long Term Release)) for database management. There will not be an update through the project since the version is long-term supported.
8	Project Management System	The team will use Microsoft Project (version 16.0.15028.20160) for project management. The application will automatically be updated when there is a new release.
9	Browser	The team will use Google Chrome (version 123.0.6312.105) to have the most compatibility with Google ecosystem applications such as Google Documents. The browser will be updated automatically when there is a new version.
10	Documentation Tool	The team will use Google Documents to provide a collaborative and easy-to-use documentation tool. Google Docs allows the team to keep a concise history of the code documentation.
11	Collaboration Tool	The team will use Microsoft Teams (version 24033.811.2738.2546) to be in contact with the members and for online meetings. The application will automatically be updated when there is a new release.
12	Design Tool	The team will use Adobe Photoshop (version 25.6) to sketch 2D drawings. The application will be installed by the IT team for the members who will work as an illustrator. The updates will be done automatically. Also, the Adobe accounts will be handled by the IT team.

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#	HARDWARE NEEDS	DESCRIPTION
1	Computers	All the team members and organizations will need laptops throughout the project. Development, testing, documentation, online meetings, and management will take place on these laptops. These computers need all the software needs listed above from 1 to 12.
2	Networking Equipment	All the team members need network connections in order to communicate and research as needed. There is no specified software (just a driver needed) for network connection from computers.
3	Test Devices	Instead of IDE's mobile environment emulators, the members who work on application development will need test devices to check the application's response.
4	Server	The project needs a server to store the user's data. Once the required capacity is determined, the server will be established. Once the initial tests are done with a standard connection, the required network speed will be provided. There will be a computer dedicated to work as a firewall to the database. Moreover, when the system starts working, the need for maintaining the server optimal and the need for keeping the server secure will be provided (e.g. air conditioner system). Whenever there is a problem with Oracle Database that our team cannot handle, the team will contact Oracle Support.
5	Cameras	The image processing developers need input data to work on posture correctness. They need multiple cameras with different resolutions and different frame rates. The development team will use these cameras when they start working on image processing.
6	Back-up Storage	The team will need back-up for the user's data. The update intervals will be decided after optimizing the system. Also, the memory that is needed to meet this need will be determined after work on estimation of possible database volume.
7	Power Units	In order to maintain the project's server optimal, there is a need that keeps the system always on and at the same voltage.

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#	SUPPORT NEEDS	DESCRIPTION
1	Technical Support	Groups who work with hardware and software might run into some issues while using them. They need support to determine the issue and fix it.
2	Partnerships and Collaboration	Building partnerships with gyms and healthcare providers will be needed when designing the product. The team will need their expertise and opinions on the right posture for each exercise.
3	Fundings and Resources	Any funding this project gets will be beneficial for our team. Fundings can help our team with research, prototyping, getting the necessary hardware and software for the project
4	Feedback Providers	Conducting necessary tests and getting feedback from testers will help our team decide on the best hardware and software algorithms for the project.
5	Legal Background Checks	Since our project contains user's personal data it is important to consider what is legal while handling this kind of data. The project should not violate any human rights or copyrights.
6	Oracle Support	Our project deals with a huge database. To minimize any risks while implementing the database and provide security for the users, Oracle support is needed.
7	Microsoft Support	Communication between groups and various aspects of our project depends on the tools that Microsoft provides. Each team member should be able to use the and get support needed while using Microsoft services.
8	AWS Support	Cloud system integration is a crucial part of the project. The team that works with the AWS application must be able to implement it without a mistake, making AWS support needed.