SE 216 – SOFTWARE PROJECT MANAGEMENT
SOFTWARE PROCESS MODEL DOCUMENT

PROJECT NAME: **TRUE POSTURE**

GROUP MEMBERS: **Section 2 Group 8**

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#	NECESSARY NEEDS FROM THE ORGANIZATIONAL PROCESS
1	**Budget and Sources:** The budget and resources for the software development process should be determined based on the organization's financial situation. These resources may include human resources, hardware, software tools, and other requirements, as well as the allocated time for the project.
2	**Clear Project Objective:** The organization must ensure that the team members understand the objectives of the project.
3	**Harmony of Process:** The product owner and other team members must divide the project objectives into meaningful sprints. The management must work on successfully completing these sprints to not hinder the work.
4	**Collaborative Team:** The organization's software development team should include an effective project management and communication plan. The project may include a correct workload division such as timeline, risk management, and task assignments.
5	**User Feedback (Understanding the Customer Type):** The team should understand the customer's expectation from the project and their working area. Software process plans and project objectives can be changed by the customers.
6	**Project Documentation:** Maintaining clear documents of codes, requirements, and other project artifacts is required to communicate all knowledge about the project to the team. Documentation allows the project team to get a clear understanding of improvements made to the project.
7	**Team Competencies and Training:** The project team has to have sufficient knowledge. The team must be problem solvers. Also, the organizations should provide training for team members. This may include technical and social skills such as communication and leadership.
8	**Legal and Regulatory Compliance:** The organization should be reliable. Data privacy, security, and copyright have vital roles in a user's life.
9	**Adaptable Approach:** The organization of the project must be adaptable to fulfill the customer's needs. The project must adapt to the changing environment, customer feedback, and customer's new requirements.
10	**Quality Standards:** The entire software development process should be conducted following the organization's quality standards and procedures. Software quality and dependability can be raised by procedures like documentation, code reviews, quality control, and testing procedures.

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SOFTWARE PROCESS NAME: Agile Model (with Scrum Framework)

SOFTWARE PROCESS DESCRIPTION:

Scrum is a lightweight framework that encourages teamwork and flexibility. Scrum can be applied to both project management and development. There are three roles in a Scrum Team: Product Owner, Scrum Master, and Development Team. Product Owner represents the stakeholders and organizes the product backlog that includes the goals of the product. Scrum Master coaches the team and ensures adherence to Scrum principles. The Development Team consists of three to nine members responsible for meeting the goals and increments of the product. Scrum Team plans a sprint to meet the chosen goals of the product backlog. The team works to achieve their chosen goals during a sprint. Once the sprint is completed, the Scrum Team inspect the results and plan for the next sprint. Cycles of sprints continue until every goal listed in the product backlog is achieved. Scrum is well-suited for projects that are expected to change requirements frequently.

SOFTWARE PROCESS MODEL:

In the true posture project, after the requirements are determined, the product backlog will be created by the scrum team. Then the sprints will be divided into eight main parts. The sprints are respectively:

1) **Image Processing and Its Algorithm Design**
2) **Database Design for User Data and User's Progress**
3) **Design and Registration System**
4) **Cloud Computing for Premium Members**
5) **Area Selection and Posture Correctness**
6) **Progress Tracking**
7) **Polishing the App**
8) **Releasing**

Image Processing and Its Algorithm Design:

In this sprint, the team members will work on image processing for the user's workout video for 4 weeks. The first task will be determining the body joints. After that, the main point is evaluating the correctness of the exercise with respect to joint angles and general posture. These outcomes must be designed to be implemented in the app and user interface. If a team member has a lack of qualification about this topic, the member must be trained.

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Database Design for User Data and User's Progress:

In this sprint, the database will be created for the user's data and progress. The database must be created to meet the main properties. The time reserved for this sprint is 2 weeks.

Design and Registration System:

Firstly, the registration screen will be designed and check the user information on the database. The other task for this sprint is creating an environment for general app structure including area selection, exercise section, and progress tracking. There will be 2 weeks for this sprint.

Cloud Computing for Premium Members:

There will be some users who do not have a device that has enough power to handle image processing. In this sprint, in 3 weeks, the team will create a cloud computing system for these users. The system must be created to be seen as it's working on the user's phone.

Area Selection and Posture Correctness:

After creating the general structure of the app, in this sprint, first, the target area section part will be created. A user selects an exercise area, and then the program shows the proper form via a video, after that, the program will evaluate the user's posture correctness, both form and timing, and send a feedback to the user by using the algorithms. There will be 2 weeks for this sprint.

Progress Tracking:

The team will create a progress tracking section in the app to show the users' statistical comparison in 1 week. It includes posture correctness. The user must be able to see exercise recordings.

Polishing the App:

In this sprint, for 1 week, the team will focus on polishing the app. This includes resolving any bugs, optimizing performance, and making minor improvements to enhance the user experience.

Releasing:

In this final sprint, the team will complete the final preparations for the app's launch. The app will be deployed to iOS and Android marketplaces. After all tests have been successfully completed and any in-app bugs have been resolved, final checks will be conducted to ensure the app is ready for public release.

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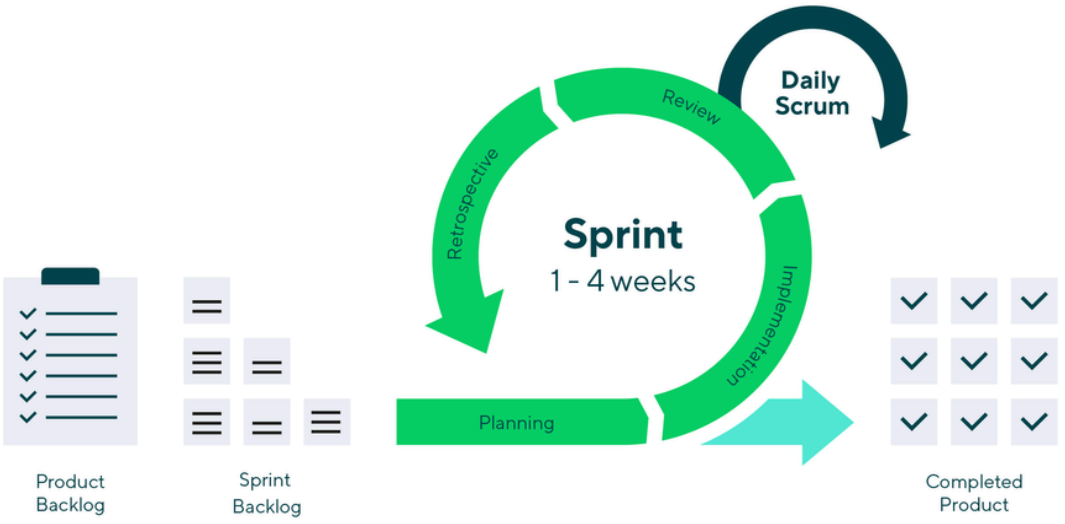

REASONS TO CHOOSE THIS MODEL:

Scrum is favored by our project teams for its agile principles, enabling flexible and customer-centric development. The True Posture project requires a flexible framework that is adaptable to customer's changing needs. The scrum model is chosen to meet four main objectives:

Reduced Risk: By using the scrum, the project is divided into meaningful parts. With this property of scrum, the team will work on sprints to reach the complete product and each sprint will be evaluated separately. The project contains image processing for the customers. The scrum framework allows our team to reduce the risk that comes with using image processing. It enables us to work on the things before it is too harmful to the project and to be better with feedback.

Continuous Improvement: Scrum encourages continuous reflection and improvement through regular retrospectives. Our team has the opportunity to identify what went well, and what could be improved, and take action to enhance our processes in the next sprint. Also, the scrum framework enables our team to be controlled and open to each other.

Faster Delivery to Market: By dividing the project into sprints, different sprints can be handled by scrum teams at the same time. This enables the team to release the product sooner.

Transparency and Stakeholders: Thanks to Scrum, stakeholders can see the progress of the project transparently. Through daily and other meetings it keeps stakeholders informed about the team's progress, challenges, and quantity of work performed. Additionally, depending on feedback from stakeholders, changes to our application can be made much more quickly and precisely.

The team prefers to use the Scrum framework over other process models such as the Waterfall Model. There will be huge costs if our team uses Waterfall when there is a mistake in the project. Since feedback is delayed until the last parts receiving it in the Waterfall Model is significantly more detrimental in terms of time lost; however, Scrum is more beneficial in terms of time and costs. It has become our first choice as it reduces costs. Also, there will not be regular meetings in the Waterfall to check the team's condition.

Project GitHub Account

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