

Project Proposal

Tennis Training Management System

Group 12



Aug 10, 2018

1.Introduction of the project

1.1 Background

Nowadays, as a traditional exercise, tennis has always been popular around the world. Furthermore, there is the increasing number of parents willing to send their children to play tennis as a way to strengthen their bodies. However, the players or their parents can only get oral feedback from the instructors about their performance, rather than an intuitive, visual feedback. Also, the instructors traditionally depend on their memories and experience to make the training plan, rather than according to the training data of each player historically.

1.2 Vision Statement

Our goal is to create an on-line tennis training management system to provide a platform for the tennis training center, instructors, teenager players and their parents, which will help the training centers to manage their instructors and customers, assist instructors to design scientific and reasonable training plans and to track the performance of the players, and give the players and the parents a friendly and intuitive feedback.

1.3 General Goals

- Create a course and players information system linking to the instructors so that they can view the timetable of the courses and the information of their students. The instructors can read the performance data of the players and the historical training plan to support them to design the future plan.
- Provide a series of options of training types to the instructors so that they can easily choose what they need for the next training rather than typing by themselves.
- Build an evaluation system of the players, which the instructors can use to assess the training effectiveness for each player. Then the evaluation results will help them to improve or revise the training plan.
- Add functions such as the notification reminder that the players and their parents will receive the course time and place, and also they can view the training plan. Furthermore, the players can get the feedback of their performance based on the result of evaluations in a visual and graphic format.
- Provide the joining course interface to the potential customers so that the new member of our system can choose what courses they want to take.

1.4 Optional Goals

At this part, we will present some optional functions or goals of this project, which we will achieve if we can finish the general goals early, or we will treat these functions as the area to improve in the future.

- Provide the individual training appointments that the players not only can enjoy the regular group courses but also can make a one-to-one or personalized custom group training course with the instructor they like.
- Build a tennis community that the players can share their experience on-line with their teammates or instructors. They can share their training data and the moment pictures. Also, they can publish their needs such as to find an instructor who is willing to give them some improvement advices.
- Provide the equipments shop function to the training centers that they can publish and sell the tennis equipments to their customers.

1.5 Group/Team Goals

- Front-end team: (Jiaqi Wang, Yixuan Lin)
 - Designing the user interfaces and set the uniform style for entire project.
 - Enhancing the user experience by properly organize the web pages
 - Interacting with the back-end team and display data into the pages
- Back-end team: (Siyu Wang, Chaoyi Zhou)
 - Database design and setup as well as further maintenance
 - Achieving the functional requirement and Implementing the business logic
 - Providing the API to the front-end team and giving necessary data
- Testing team: (Liling Zhang)
 - Code development and review
 - Monitoring the application performance
 - Using continuous testing tools that provide feedback

1.6 Individual Team Member Goals

- Siyu Wang: Database pattern design and setup, implements business logic using SSM, provides APIs to the front end.
- Jiaqi Wang: User interfaces design, write web pages based on the user experience, display data on the pages.
- Yixuan Lin: Responsive application interfaces design, improve webpages' performance and appropriate organize data from API based on User Acceptance Test.
- Chaoyi Zhou: Assists to build the database, writes functional APIs, interacts with front-end team.

- Liling Zhang: Fault diagnosis and testing of software for internal developed systems, support to identify and analysis reported issues.

2.Problem Statements

2.1 Problem Statements:

1. There is no such existing tennis training management system. The traditional ways that the instructors make plans are inefficient.
2. The beginners and the teenager's parents need an intuitive way to learn how their performance. Meanwhile many tennis centers need a platform to interact with their customers.
3. The beginners and the people who want to learn tennis, they have narrow way to learn which instructor is better and which type of course is suitable for them.
4. Traditionally there is no systematic and standard training outline to support the instructors to make the training plans. On the contrary, they make the training plan based on their memory and experience.
5. Without using any on-line management system or notification system, the teenager players and their parents have no idea what the next step they will be trained.
6. The current training centers lack a method to efficiently record the data of training and to trace the quality of training leading to lack of systematic training.

2.2 Methods used to infer problem statements

We inferred our problem statements in 3 stages:

1. As one of our teammates used to be a professional tennis player, some of his former teammates have their own tennis training center. So, we made a survey from them to collect the problems that they currently meet in the training management. Furthermore, we hold an on-line meeting with them to learn what functions they need if the system we will create is available for them such as they can use it to trace the performance of the players and automatically record the training data to assist the instructor to improve the quality of the courses.

2. Secondly, each teammate has made 10 calls to friends to do the individual investigation. They all show the great interesting in tennis and need a good platform to go in deeper of what they can learn and how to get closed to a professional coach to have a systematic training plan.

3. Based on the information collected from above steps, we make a list of functions that the system may realize and after the team discussion, there are 2 main features we believe that the system should have. They are (1) commonality: the system will provide a full set of tennis training skills and the relevant measures based on the

International Tennis Federation (ITF) standard. (2) Aesthetics and easy to apply: the style of web pages need to be attractive for the people and the graphic format of the performance feedback should be friendly and easy to understand.

3.Evaluation of Ideas

3.1 SWOT analysis of the project

According to the survey and the discussion, we all have a general scoping of this project, and to make sure the process of the project goes smoothly, we made a SWOT analysis of the project.

1. **S**trength

At this part, we believe that one of our advantages to do this project is we can get immediate and continuous professional support from the real tennis training centers. This will make sure that the functions we will achieve are practical and will fulfill the needs. The other one of our advantages is we can get the real data from the real tennis training scenarios to help us to intensify our business logic.

2. **W**eakness

We also discussed what weakness we may have in the progress of the implementing. The obvious one is lack of the real project experience, which leads to there might be some problems or risks that we currently do not notice. About these potential risks we all should keep a frequent and immediate communication with each other.

3. **O**pportunities

With the increasing number of people who are willing to learn tennis, there is currently no such a specific and systematic system in the real market based on our survey. This is a potential chance to create this program.

4. **T**hreats

The transformation of managing mode and teaching mode is always difficult, since most tennis training centre run on their own way and the teaching style of each instructors is different. So, it may be not easy for the instructors or the entire center to adapt such this new method in teaching. We will try to design this system based on the principle that is the system is easy to use and has a clear logic to avoid this problem.

3.2 Ideas comparison

The perspectives of team members come to an agreement for the most of the general goals. We all agree that based on the investigation previously these goals will meet the current needs. However, there were two different voices in the function designing of the training plan.

The first one is that we provide several training plan models made by professional trainers according to the standard from ITF and the instructors can choose the most suitable one from their point.

- Pros: Instructors do not need to make plan every time which can simplify the process of training.
- Cons: The fixed model may lack of flexible, which means the instructors can not make the plan based on the differences among students' condition and the differences of each training process.

The other one is that the instructors can make their own plans by selecting what type of training skills they need from the database before starting a course.

- Pros: Each plan can be customized so that it may to precisely reflect the progress of the improvement that the players have made.
- Cons: It is time-consuming for instructors to plan every detail from scratching, which may lead to a bad user experience for instructors. Moreover, it may lead to a non-systematic result for the courses.

In general, after having a long discussion, we found a way to extract the advantages of the both methods and try the best to avoid the weakness of them. That is we made a combination of the two methods. First, we will provide a general training format according to the progress of a common tennis training course, which are three main sections "Warm up", "Technical and tactical training", "physical training". And then the instructors can choose what the specific skills or programs from these three main sections they want to apply in the next training class. By this logic, we can ensure the systematicness of the training but also the instructors will have their flexibility for their training plan.

4. Team member

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