

Design of Student Physical Fitness Monitoring Management System

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Abstract

Student physical fitness monitoring and management system includes terminal equipment and Internet management platform. One side of the terminal equipment is equipped with a first tightening belt, and the other side of the terminal equipment is equipped with a second tightening belt. The end of the first tightening belt is equipped with a lock, and the terminal equipment is equipped with monitoring system, positioning module, speed detection module, wireless communication module and data transmission module, The Internet management platform is connected to the terminal equipment through the data transmission module, and the Internet management platform is equipped with an analysis module, an evaluation module, an alarm module and a storage module. The monitoring system includes a blood pressure module, a body temperature module and a heart rate module. The analysis module and evaluation module in this design analyze and evaluate the physical signs of users, that is, it can automatically detect the physical condition of users and provide the first time security for users.

Keywords

Student, Physical Exercise, Physical Fitness Monitoring, Management System.

1. Purpose and significance of project implementation

The latest research shows that life lies in exercise, and how to exercise is very knowledgeable. Fitness and nutrition experts pointed out that people in modern cities have less and less physical labor, more and more mental labor and work pressure, and their physical functions are gradually declining according to the current life mode. Therefore, it is necessary to improve the defense ability of the whole body through exercise, including muscle, bone, and the improvement of the whole visceral system and body circulation system. Experts emphasized that scientific and appropriate exercise can enable us to have a more flexible skeleton, stronger organs, younger brains and fuller emotions, so that we can live a healthy, beautiful, happy, long life, and the most valuable thing is to stay away from disease. The Internet began in 1969 in the United States. Generally, the Internet refers to the Internet in general, and the Internet refers to the Internet in particular. This method of connecting computer networks together can be called "network interconnection". On this basis, a global Internet network covering the whole world, called the Internet, is an interconnected network structure. The Internet is not the same as the World Wide Web. The World Wide Web is just a global system based on hypertext links, and is one of the services that the Internet can provide.

However, while exercising, there are also dangers. If a sportsman suddenly gets sick or gets lost or encounters other dangers, the outside world cannot rescue him in time. However, the existing sports health monitoring system cannot automatically detect the physical condition of the user, and cannot provide immediate safety protection.

2. Project research content and problems to be solved

The purpose of this design is to solve the shortcomings of the existing technology, and put forward the monitoring and management system of students' physical fitness.

In order to achieve the above purpose, the design adopts the following technical scheme:

The student physical exercise physical fitness monitoring and management system includes a terminal device and an Internet management platform. One side of the terminal device is provided with a first tightening belt, and the other side of the terminal device is provided with a second tightening belt. The end of the first tightening belt is provided with a lock, and the terminal device is provided with a monitoring system, a positioning module, a speed detection module, a wireless communication module, and a data transmission module. The Internet management platform is connected with the terminal equipment through a data transmission module, and the Internet management platform is provided with an analysis module, an evaluation module, an alarm module and a storage module.

The monitoring system includes blood pressure module, body temperature module and heart rate module.

The blood pressure module, body temperature module and heart rate module measure the user's blood pressure, body temperature and heart rate.

The positioning module and the speed detection module carry out GPS positioning and speed monitoring for the user, and can track the user's position in real time.

The analysis module and the evaluation module analyze and judge the physical signs of users to ensure the personal safety of each user.

The alarm module and storage module can respectively alarm and backup the users who send different data information, ensuring the personal safety of users.

The second fastening belt is provided with a plurality of buttonholes, and the buttonholes are evenly and equidistantly distributed.

3. Project features and innovation points

1. The analysis module and evaluation module in this design analyze and evaluate the physical signs of users, that is, it can automatically detect the physical condition of users and provide the first time security for users.

2. The alarm module and storage module can respectively alarm and backup the users who send different data information, ensuring the personal safety of users.

3. The fitting of the buckle hole and the buckle can adjust the tightening degree of the first and second tightening belts, so that the user can wear them more comfortably.

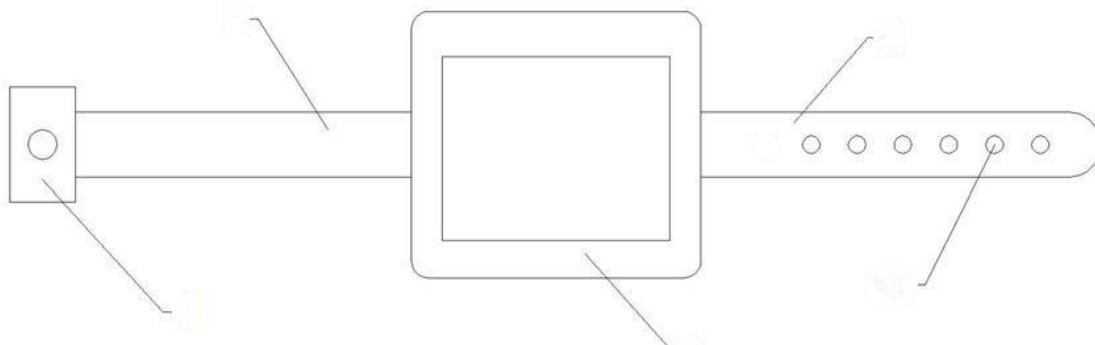


Figure 1: is the schematic diagram of the main structure of the student physical exercise physical fitness monitoring management system proposed by this design.

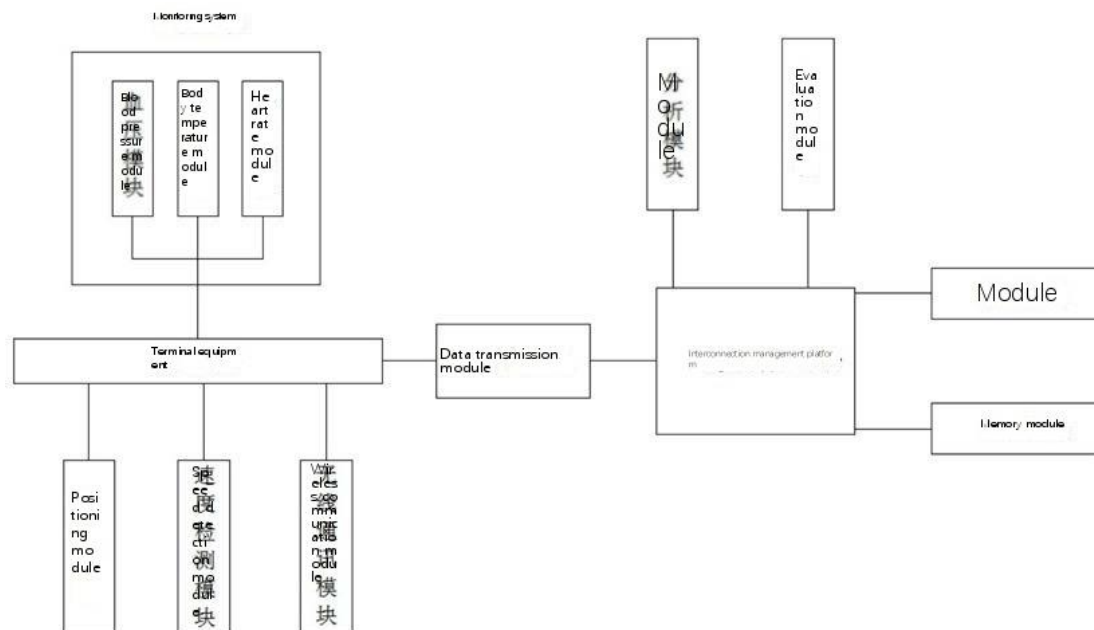


Figure 2: is the schematic diagram of the module structure of the student physical exercise physical fitness monitoring management system proposed by this design.

In the Figure: 1 terminal equipment, 2 first tightening belt, 3 second tightening belt, 31 buttonholes, 4 locks.

4. Project implementation plan

Referring to Figure 1-2, the student physical fitness monitoring and management system includes terminal device 1 and Internet management platform. One side of terminal device 1 is equipped with a first tightening belt 2, the other side of terminal device 1 is equipped with a second tightening belt 3, the end of the first tightening belt 2 is equipped with a lock 4, and terminal device 1 is equipped with a monitoring system, a positioning module, a speed detection module, a wireless communication module and data transmission module, the Internet management platform is connected with terminal device 1 through the data transmission module, and the Internet management platform is equipped with analysis module, evaluation module, alarm module and storage module.

Among them, the monitoring system includes blood pressure module, body temperature module and heart rate module. The blood pressure module, body temperature module and heart rate module measure the user's blood pressure, body temperature and heart rate. The positioning module and speed detection module conduct GPS positioning and speed monitoring for the user, and can track the user's position in real time.

Among them, the analysis module and the evaluation module analyze and evaluate the user's physical signs to ensure the personal safety of each user. The alarm module and the storage module can respectively alarm and backup the users who have sent abnormal data information to ensure the personal safety of users.

A plurality of buttonholes 31 are arranged on the second fastening belt 3, and the buttonholes 31 are evenly and equidistantly distributed. The buttonholes 31 can adjust the tightness of the first fastening belt 2 and the second fastening belt 3 by cooperating with the buckle 4, so that users can wear them more comfortably.

Example 1: The monitoring system includes blood pressure module, body temperature module and heart rate module. The blood pressure module, body temperature module and heart rate module measure the user's blood pressure, body temperature and heart rate. The positioning

module and the speed detection module carry out GPS positioning and speed monitoring for the user, and can track the user's position in real time. After the data transmission module transmits the user's information to the Internet management platform, the analysis module and the evaluation module analyze and evaluate the user's physical sign information to ensure the personal safety of each user. If no user's physical sign information is found, the alarm module does not need to be started.

Example 2: The monitoring system includes blood pressure module, body temperature module and heart rate module. The blood pressure module, body temperature module and heart rate module measure the user's blood pressure, body temperature and heart rate. The positioning module and the speed detection module carry out GPS positioning and speed monitoring for the user, and can track the user's position in real time. After the data transmission module transmits the user's information to the Internet management platform, the analysis module and the evaluation module analyze and evaluate the user's physical sign information to ensure the personal safety of each user. If the user's physical sign information is found, the alarm module and the storage module can respectively alarm and backup the user who has sent abnormal data information. It ensures the personal safety of users.

Example 3: Wrap the first fastening belt 2 and the second fastening belt 3 on the arm or leg of the user, and the buckle hole 31 and the lock buckle 4 can adjust the tightness of the first fastening belt 2 and the second fastening belt 3, so that the user can wear them more comfortably.

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Reference:

- [1] Research on Innovation of College Sports Management [J]Huang Enhong, Science and Technology Information, 2011 (32).
- [2] Scientific, humanistic and college sports management [J]Wang Benquan. Journal of Wuhan Institute of Physical Education, 2003 (04).
- [3] Analysis on the reform strategy of college sports management in the "Internet+" era [J]Zhou Hongsong. Sports Fashion, 2022 (07).
- [4] Exploration and analysis of problems related to college sports management in China [J]Cai Rui. Contemporary Sports Science and Technology, 2012 (22).
- [5] Discussion on college sports management [J]Huang Bin, Chen Qiaoyun. Zhejiang Sports Science, 1996 (02).
- [6] Discussion on the Theory and Practice of Internet Era and Sports Management Informatization [J]Yu Fang;Huang Ke. Contemporary Sports Science and Technology, 2016 (36).
- [7] Reflection on the decline of college students' physique on college sports management [J]Tang Yuenian, Contemporary Sports Science and Technology, 2017 (22).
- [8] My opinion on strengthening college sports management [J]Lu Shaoqun. Journal of Xianning University, 2006 (03).
- [9] The quality and thinking of college sports management talents [J]Wu Biqiang. Journal of Chengdu Institute of Physical Education, 2002 (01).
- [10] Development of sports management discipline in China: historical review and future strategy [J]Chen Linhui;Liu Qing. Sports and Science, 2021 (03).