Application No.:

Title of Information System:Atmoscare+

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1. **Preface**

According to data from Ministry of Health and Welfare, heart disease cardiovascular disease were the second and third on the top ten causes of death in Taiwan, and mortality of patients who have cardiovascular disease rising every year. So we work with the National Health Research Institutes, developing“Atmoscare+”, the butler of risk of cardiovascular diseases, making the elder evaluate the risk of cardiovascular disease in simple where they located, and prepare for the procedure of corresponding contingency.

1. **Innovation** **Description**

With the rising of intelligent device, the way of thinking of mankind had been changed, communication as a primary purpose is no longer as usual, and with innovation in technology, the cellphone gradually evolve into important tools for transmitting message instantly. Therefore, we developed Atmoscare+ to improve people’s health, carrying out case-crossover design and logistic regression analysis to the tens of thousands of data accessing from Ministry of Health and Welfare, combining personal information of health, like: ages, genders, medical history, etc. analyzing the data of atmosphere where the user located immediately, and determine if the location has risk of cardiovascular diseases or not. Besides expecting the transmission of message in common, we provide access that inform citizens of risk of cardiovascular diseases where they are instantly, make the risk of cardiovascular diseases can be manage in a more real-time way.

1. **System Functions**

**1.Overview**

Understanding the atmosphere information where the user located, combining user’s health status, determining the degree of risk of disease in this region to user, giving advice, providing diseases knowledge and information related to medical care.

1.1 Comprehensive risk analysis

According to the tens of thousands of data from Ministry of Health and Welfare, we use SAS to do Case-crossover design and Logistic regression, combining personal information of health, like: ages, genders, medical history, analyzing the atmosphere data where the user located, and then evaluate potential risk of cardiovascular diseases where the user located.

1.2 Suggestion of risk where you are

After calculating, providing short and precise description, and alerting user how to deal with the risk where user located.

1.3 Weather information

We use “General weather forecast-one week weather forecast for counties” provided by open-data of weather information, providing temperature and status of weather to users.

1.4 Air quality information

PM 2.5 make human body inflame easily, increase possibility to get cardiovascular diseases. So we provide users with data called “instant pollution index of air quality “ from Environmental Protection Administration Yuan,R.O.C(Taiwan) that make users have a reference of occurrence rate of risk of cardiovascular diseases.

1.5 Extra hint

Integrating questions about cardiovascular diseases, F&A in type of column, let users look up information at will.

1.6 Advertisement

Acquiring fund through the advertisement related to medical care, we hope that “Atmoscare+ --- the butler of risk of cardiovascular diseases” may be kept developing perpetually

**2.Literature**

Aggregating paper about cardiovascular diseases, making users look them up at will. These paper are mainly about National Health Research Institutes, Institute of Population Sciences, and we keep them in this function that convince users of credibility of our system.

**3.Common questions**

3.1 About system

Providing some questions about our system. When users come across questions in operating, they can search this section to solve problems.

3.2 About medical care

Providing proper nouns. When users come across some incomprehensible nouns, they can search this section.

1. **System** **Features**

**1.Cross-platform design**

The system includes a web version and a version of the app on Android and iOS platform, making sure that our main users can be served on various platforms.

**2.Real-time risk evaluation**

Immediacy is one of the important matters of environmental risk assessment, ensuring that the provision of information to individual users are the latest results from cloud platform.

**3.Operating logic simplification**

Considering the complexity of the composition of the users, we simplify the procedures of operation as simple as possible, reducing the cost of learning and adaptability. At the same time we provide a reasonable amount of information on each page, allowing users to concentrate on its usage scenarios.

**4.Cross-platform retains full functionality**

App version is developed and based on web version, and using RWD(Responsive Web Design)concept to optimize each platform. In addition to making operating logic of cross-platform tend to be more together, we have a significant advantage---avoiding lots of software and service that have inconsistent in functionality and integrity on Web version and other versions. Regardless of any version, users can have similar and intact experience.

1. **System Development Tools and Techniques**

1.Web Framework: Python Django

2.Web front site: HTML5, CSS,

JavaScript

3.Server: Amazon Web Services

4.Database: SQLite 3

5.Android development: Android

Studio

6.iOS: XCode 8.0

7.Video: After Effects

8.Interface: Illustrator

1. **System** **Users**

Our users contain all ages and genders. Users only have to connect to the Internet that update the information for risk assessment, it is necessary to have a stable connection environment on the Internet. With the popularity of various smart device, our target users are those who use the mobile device; But actually, there are more the elder and cardiovascular diseases patients.

1. **System** **Environment**

1.Browser: Microsoft Edge, Mozilla Firefox, Google Chrome

2.Android operating system: Android 4.4 or newer

3.iOS operating system: iOS 9.0 or newer

1. **Conclusion**

Allowing users to get the best experience is the most important, and is also the core value of interface design and process design. The elder are the biggest user group to our service, so we improve app according to their habits in operating, and we also receive good comments as feedback through our survey.

We will make progress in development; and provide more service and better users

experience, adding in real-time alarm system to inform users when they will be about

to deal with the dramatic change of risk of cardiovascular diseases because of the

weather, and give users appropriate advice. With the popularity of wearable device, we can add into heart-beat data and analyze it, providing much more precise risk perdition.