Software Requirements Spcification

Disk Space Usage Monitor In Android

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Chapter 1

Introduction

1.1 Purpose

The aim of the project is to build an application software That shows the usage of memory for android mobiles.With this application the user can see the used space of memory in the disk drives of the device is displayed with user friendly a graphical interface . Later it can be upgraded as a file explorer system.

Fist we are implementing the software application in the eclipse Indigo which is a tool for android development.And the application is tested using the AVD available in the eclipse. The Eclipse includes java jdk. That is the java developer tool kit. So that it is easy to use the eclipse for developing android applications.

1.2 Scope

The scope of the application is that the user will get more interactive window for the required information about the drive. It is better than the inbuilt application for the disk space usage information. The application can be made with different views for displaying the information. The available products are paid software and they are highly expensive. So that the product will be helpful as it is user friendly.

1.3 Definitions,Acronyms & Abbreviations

1.3.1 Definitions

- **JDK**:-The Java Development Kit (JDK) is an Oracle Corporation product aimed at Java developers. Since the introduction of Java, it has been by far the most widely used Java SDK. On 17 November 2006. Sun contributed the source code to the OpenJDK.

- **Android SDK**:-The Android software development kit (SDK) includes a comprehensive set of development tools. These include a debugger, libraries, a handset emulator , documentation, sample code, and tutorials. Currently supported development platforms include computers running Linux (any modern desktop Linux distribution), Mac OS X 10.4.9 or later, Windows XP or later. The officially supported integrated development environment (IDE) is Eclipse using the Android Development Tools (ADT) Plugin, though developers may use any text editor to edit Java and XML files then use command line tools (Java Development Kit and Apache Ant are required) to create, build and debug Android applications as well as control attached Android devices (e.g., triggering a reboot, installing software package(s) remotely).

- **AVD**:- AVD is the android virtual device , which is helpful in running the application in a computer. AVD is a virtually creates a mobile device,which helps in running the application in a computer.The program running in avd seems to be like running the application in android mobile phone.

- **Ambiguity between SDK and JDK**:- The JDK forms an extended subset of a software development kit (SDK). In the descriptions which accompany its recent releases for Java SE, EE, and

ME, Sun acknowledges that under its terminology, the JDK forms the subset of the SDK which has the responsibility for the writing and running of Java programs. The remainder of the SDK comprises extra software, such as application servers, debuggers, and documentation.

1.3.2 Abbreviations

- **JDK** :-Java Development Kit
- **SDK** :-Software Development Kit
- **NDK** :-Native development kit
- **AVD** :-Android Virtual Device

1.4 References

- **Wikipedia**, *http://www.wikipedia.org/*
- **youtube**, *http://www.youtube.com*
- **android developer.com**,*http://developer.android.com/index.html*

1.4.1 Document Overview

Section 1 is an introductory chapter which explains the purpose of the project,scope and references.
Section 2 contains the overall description of the product including the product perspective.
Section 3 describes various functional requirements that are the product should have.
Section 4 describes the non-functional requirements of the product.

Chapter 2

The Overall Description

2.1 Product Perspective

The android phone include an application that only shows the details in some texts about the memory. It will be easy for the user to understand if the memory details displayed with graphical interface. This product is about a user friendly display of the details of memory.IT is aiming to show the memory details in a graph like representation.

The model we are using to implement the application is incremental model. So it can be modified as a file explorer later.

2.1.1 Product Functions

The various services offered by the device driver are given below.

- The basic function is to display how much memory is use out of total memory.
- To give warning When memory used is more Than 95 percentage
- Include different type of views like The rectangular view and cylinder view to represent the usage of memory
- Detail The usage for both phone memory and memory card.

2.1.2 User-classes and Characteristics

By user classes and characteristics we are broadly defining the users who need frequent use of this product and the various requirements of each particular user classes.

- The android mobile users are the main user of the product, so user class is very large and the usage will be important now a days because of the highly usage of memory capacity of sd cards.
- Another applications can be check the memory availability, to avoid unnecessary problems wen they try to instal with a very low memory space.

2.1.3 Operating Environment

The environment of operation has two modes in the android application building and deployment. Because the testing of application requires an avd virtual device. The virtual device can be downloaded from the Android Developers site. And the deployment of application requires a smart mobile phone that uses an android platform operating system.

Hardware Requirements

Application development is done through a computer system. And it works in a mobile phone.

- Processor:Intel P4 or above.
- RAM:512 MB
- Hard Disk:about 40 GB.

- Android Platform mobile phone.
- A memory card.

Software Requirements

The software requirements at developers side and users side are given below.

- Operating System:-the user need an operating system that supports android applications. It is better if it is Android 2.2 or above.
- developer need The Android SDK, java JDK, And different API s and AVD s according to the mobile operating system.
- An environment for creating the Application Programming Interface like JDK is required for the developers.
- A good tool for software testing is required for assuring the dependability of the system.

2.1.4 Design And Implementation Constraints

The designer needs to build the application according to the available api s. it also should work with the old android phones.

2.1.5 User Documentation

- User Manual:-The users are provided with a brief user manual which includes the method of installation and the functionality offered.

2.2 External Interface Requirements

2.2.1 User Interface

Users are provided with a graphical user interface which enables the user to access the functionality provided by the application.There will be options to swich views of the application modes.

2.2.2 Hardware Interface

The hardware interface is inbuilt in the mobile phone.

2.2.3 Software Interface

It is the interface needed to scan the memory of the device. Which helps to create the graphical interface for the user.

Chapter 3

Functional Requirements

3.1 Available services

- The available service is the graphical user interface that shows the usage of memory.

3.2 Increment Services

The services that can be incremented to the application includes..

- **Authentication**
  The application can be modified as an autherized one, then only for limited users with password protection. it can be added later.
- **Scan data**
  The application can be upgraded as scaner to analysis the type of files. and clear the memory.
- **explore**
  The application can be modified later to be as an explorer. through which the user can access any files in the memory. And do basic operations like copy,cut, paste, delete,move etc.
- **Data Updation**
  The system also provides the ability to modify the files and data stored in the device .

Chapter 4

Non-functional Requirements

4.1 Performance Requirements

The main performance requirements that the product should satisfy are,

- Speed:-The accessing sped of the application must be high. So that it can scan memory fast and show the details required .
- Ease of use:-The application must be user friendly, even if more functions are included it should be easy to use.

4.2 Safety Requirements

When the program is running the system should not be slow. The starting time of the application must be slow.

4.3 Security Requirements

The security problem mainly arises when the accessing of a computer system is not authorized. The security of data is assured by providing a login mechanism in the user interface. Whenever a user want to access a system he/she needs to provide the username and password of the target system.

When uninstalling the application, only the related files must deleted. It should not harm any other files in the system Even when running.

4.4 Software Quality Requirements

The most important quality requirements that the application should satisfy are,

4.4.1 Maintainability

Software maintenance in software engineering is the modification of a software product after delivery to correct faults, to improve performance or other attributes. A common perception of maintenance is that it merely involves fixing defects. However, one study indicated that the majority, over 80 percentage, of the maintenance effort is used for non-corrective actions (Pigosky 1997). This perception is perpetuated by users submitting problem reports that in reality are functionality enhancements to the system.

In case of our application,it can be maintain properly by updating the application.

4.4.2 Adaptability

The adaptability of the application can make it perform better. The product can be say to be adaptable if the model changes with according to the requirement of the user.

4.4.3 Reliability

A set of attributes that bear on the capability of software to maintain its level of performance under stated conditions for a stated period of time is called the reliability of that product.The product must be reliable to users. It must be user friendly.

4.4.4 Accuracy and Efficiency

The product must be accurate to the information, in our case the out put of the product must be accurate, it will make that product an efficient one. The efficiency of the product is also determined by several other conditions and state. the speed and easy of use are some of those.

Chapter 5

Conclusion

The mini project aim to implement an application for android .it requires more knowledge about the tools that can be used to implement such application.Building such an application helps to learn about the new technologies adapted to implement and design different software products. The Disk Space Usage monitor , monitors the usage of the memory in any android mobile.it can be tested in the android avd manager. And can be deployed.