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JUDUL: PERSONAL DATA MANAGEMENT

SESI PENGAJIAN: 2007/2008

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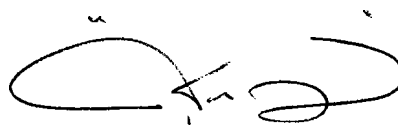
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[^] Tesis dimaksudkan sebagai Laporan Projek Sarjana Muda (PSM)

PERSONAL DATA MANAGEMENT

HARTINI BINTI OTHMAN


**This report is submitted in partial fulfillment of the requirement for the
Bachelor of Information and Communication Technology (Networking)**

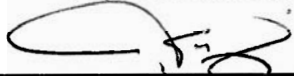
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ABSTRACT

The project is known as Personal Data Management (PDM). This java application is purposely developed for user to help in securing their files and to manage their files folder and removable drive. PDM system can be use for user to encrypt file into unreadable cipher text. The encrypted file would remain encrypted even its location has been transferred to other location and can only be decrypt back to normal via the system. PDM system also provides function to change the features or preferences for folder and removable drive. The features mention here are the icon, background image, text color and info. The system was developed after through some analysis on current system problems like weak of file security, lack of function and not user-friendly. After the analysis, the project then continues with the system designation, implementation and finally testing to test either the system achieve those objectives and requirements defined in planning phase.

ABSTRAK

Projek ini dinamakan sebagai *Personal Data Managemant* (PDM) iaitu pengurusan data peribadi. Aplikasi java ini dibina bertujuan untuk membantu pengguna dalam menjaga keselamatan fail dan juga untuk pengurusan *file folder* dan gajet mudah alih. Sistem PDM ini boleh digunakan pengguna untuk mengubah fail mereka kepada fail yang tidak boleh dibaca untuk tujuan keselamatan. Fail ini akan tetap berada dalam keadaan sedemikian walaupun lokasinya diubah sehinggalah fail tersebut menjadi normal semula dengan menggunakan system ini. Sistem PDM juga menyediakan fungsi-fungsi untuk mengubah ciri-ciri *folder* dan gajet mudah alih seperti gambar ikon, gambar latar belakang, tulisan berwarna dan info. Sistem ini dibina setelah melalui beberapa masalah yang telah dianalisis ke atas system sedia ada seperti kelemahan dalam keselamatan fail, kekurangan fungsi dan tidak cukup efisien. Selepas analisis, projek kemudian diteruskan dengan rekabentuk system, pelaksanaan dan diakhiri dengan pengujian system untuk menguji sama ada sistem memenuhi objektif serta keperluan yang hendak dicapai yang telah dirancang dalam fasa pelan.

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CHAPTER I

INTRODUCTION

1.1 Project Background

Personal computer may contains a lot of data included the personal and privacy data like work sheet, personal photo, assignments and projects. Usually users will separate all of data in certain folder like images folder, music folders, and video folders in order to arrange them for easily daily use. Some of them may use system security by putting password on certain documents like Microsoft word documents in order to secure them from outsiders.

The project of Personal Data Management (PDM) system will have several main functions for users to manage, arrange and secure their files and folder on personal computers. First of all, the system will provide the function to encrypt any files included music, photos, images and documents file and able to decrypt those files back to normal without any damages or changes to the files. The encrypted files will be remained encrypted even transferred to any location in computer or to removable drives. The files can only turn back to normal if decrypted by the PDM system.

The other feature of the PDM system is the management of the folders. Using the system users can easily change their icons, backgrounds, and text color of folders and make its more attractive and easy to recognize. The system also can be

use to manage folders on external data storages like pen drives and external hard disk. Same as folder management, system will provide the same function for removable drive. Means, user can easily change their removable drives preferences like icon, background image and text color same as folder management.

1.2 Problem Statement

All files kept in personal computer without proper security enhancement may be easily access by intruders with just simply several clicks on certain folder in My Computer. Users may use the folder option to hide their certain folder in order to secure them by making them invisible to other users. Operating system like Microsoft Window XP do offers encryption on folders and files by changing the partition into NTFS files system first. NTFS also provides advanced features such as file and folder permissions, encryption, disk quotas, and compression. However, the encrypted folders and files will be automatically become normal if transfer into other location like in external data storage like pen drive or external hard disk.

Some encryption algorithm are just able to encrypt certain documents with specific length and become unavailable if use to other data format. Especially the images files, most encryption algorithm able to encrypt them into cipher format but fail to decrypts them back to normal. One encryption algorithm should be provide which able to encrypt variety files of music, image, and others documents format.

Folder like My Documents, My Computer, Control Panel, and Recycle Bin have specific image icon to differentiate them and easily recognize by users with just a glance. Somehow new folders created are just in default yellow color and differentiate just by its unique name. The background also is just in dull white color without any other images to make its looks more interesting to view. Some knowledge users will take alternative way to change the icon, background and text color of folder by modify certain configuration files. Some of them may use freeware or shareware that are available in internet for the same purpose. Somehow, most

applications are lack of functions by just perform only certain function like changing the icons folder and not together with background and text color.

1.3 Objectives

Several design goals or objectives are defined in the early phase of planning to make the system more useable and meet most of users' requirements and also as the main guidelines in creating the PDM project. Below are the objectives that have been highlight.

1.3.1 To provide security on variety files on personal computer

Much algorithm can function properly on certain files which are simple and in small size like .txt and .doc format files and become worst when use on other files format like music and images files. To solve the problems an appropriate encryption using java algorithm will be use as the method to encrypt files in computer. The encryption should be able to encrypt files into cipher text and make it unreadable users. The encryption algorithm must be able decrypt the encrypted files back to normal files. Besides, the encryption algorithm should be able to encrypt variety files type like photos, images, music, movie, and any other files formats.

1.3.2 To provide folder management

Folder management in the system will provide the function of changing local folder into system folder. Once become system folder, PDM system then can continue with the process of changing its behaviors like icon, background image, text color and info. Folder here can be from any location include in external data storage or pen drive except CD ROM.

1.3.3 To provide the function of hiding folder

Hiding a folder can be easily done to local folder but difficult to system folder. Once after a local folder becomes a system folder, the hidden function automatically become disabled. To hide the system folder user then will has to use the manual way by typing certain command in Command Prompt. To solve this problem PDM system will provide specific a function to hide or unhide the system folder as user wishes.

1.3.4 To provide removable drive management

Same as folder management, PDM system can be use to change the preferences of users' removable drive. Preferences here included the icon, background image and text color. Removable drive can be pen drive and external hard disk except CD ROM.

1.3.5 To secure the login process

Textfield for password entered will be configured to hide the alphabets with “*” marks. Besides specific java encryption algorithm will be use to secure the login process. The encryption will encrypt the password entered by user and securely kept it in cipher text. Decryption process of encrypted password will be done while the login process occurred to check either the password entered is true or not.

1.3.6 To create a user-friendly system

Users do not have to manually type command or edit some configuration files in managing files and folders. All of user need is just several clicks to change their bored and dull folder into the interesting one. Same as encryption methods, users may just have several clicks to encrypt files without hesitate in typing the path or files names as other encryption system needs. By using the Java SDK 5.0, the PDM system will be more user-friendly with it GUI-based design. Besides, the systems will be enhanced with ToolTips features which appears each time users point to any object available in system to make it more understandable or as detailed information to users.

1.4 Scopes

PDM system will combine all processes of data management in one system. The system is best for personal users and completed with password features to secure the system from other unauthorized users. The password features will be designed to accept until three times of failure password entry and more than that will cause the system will automatically close. As for security reason, the password entry will be in asterisk (*) mark and the password will be kept encrypted in computer.

The system is use to improve the other applications which use black and white command prompt and some several commands to perform its functions. By turning into GUI application, the system will be more user-friendly and users do not need to memorize all commands as needed in MS-DOS (Microsoft Disk Operating System) base application.

For the application folder management of changing the folder features, some of them are lack of functionality and has limited resources of images. As for improvement, the system will all needed functions changing the icon, background,

and text color of folder. Besides the system will allow users to have more resources of icons images and backgrounds pictures others than the system will provides.

1.5 Project Significance

The PDM system more or less could help users to secure files on personal computers via encryption method and also with password base system. Users then do not need to hide their files by making them as hidden files or even to locate the files on certain location that others might never expected. The most important is the encrypted files will still remain encrypt even if its have been transfers to any other location. By using the system, users are not limited to only secure their files of documents like .doc, and .txt but also the others files like images and music.

System folder then can be more interesting with various image icons, backgrounds and coloring text by changing its features via the system. Users also can use the system on folders in removable drives. The system will be most helpful to those users who do not like in working with configurations files or being annoyed to remember some commands needed in changing their folders features.

1.6 Expected Output

As what has been planed and decide on planning phase, the system would be Java base application and be more user friendly with GUI design. The system should has operational function of encryption to encrypt variety files and must able to decrypt them back to normal without any changes. Besides, the system will provide all needed function in changing folder features in short times without much procedures as the manual methods needed. The existing of the system will definitely replace the using of commands and also the white and black MS DOS.