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Graphical Password Authentication

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Abstract: We propose and examine the usability and security of Cued Click Point (CCP), a cued-recall graphical password technique. Users click on one point per image for a sequence of images. The next images are based on the previous click point. We present the result of an initial user study which revealed positive results. Therefore graphical password has been proposed by many researchers as an alternative to text based password Graphical passwords can be applied to workstation, web log-in applications, ATM machines, mobile devices etc. This paper presents implementation of Cued click point (CCP) graphical password which uses circular tolerance. Then it is found that CCP with circular tolerance is better as compared to CCP with rectangular tolerance.

Key words: CCP, Secret click, Graphical password.

I. INTRODUCTION

A normally password authentication has one or two level of process which is user in their username and password. This method is most commonly used in many authentication methods. But we increasing multi levels which is more secure. The first step of graphical password is user registration. Registration process have multiple levels.

The first step of registration is username, password, confirm password, secret question, mobile number, Email Id and showing five colours and showing separate value for all five colours. User remember those values correctly. The second step is displayed sixteen different images user can select anyone image, then click anywhere from the image this is a CCP (Cued Click Point) technique. Third step is displayed zero to thousand counts user set counts between zero to thousand. The last step is virtual keypad it's have five rows and five columns, user set five values. Registration successful. Then user enter username, password and after correctly complete the above procedures the login is success. In case, any one step is not valid user cannot login.

Users preferred CCP to pass points (Wiedenbeck et al., 2005), saying that selecting and remembering only one point per image was easier, and that seeing each image triggered their memory of where the corresponding point was located. We also suggest that CCP provides greater security than Pass Point because the number of images increasing the workload for attackers. JAVA is used as the front-
end tool for maintaining the database. MYSQL is used as the backend.

II. EXISTING SYSTEM

Security-sensitive environments protect their resources against unauthorized access by enforcing access control mechanisms. Text based passwords are not secure enough for such applications. User authentication can be improved by using both text passwords and structured images.

The existing system is Pass Point. It proposed passwords which could be composed of several points anywhere on an image. They also proposed a scheme with three overlapping grids, allowing for login attempts that were approximately correct to be accepted.

III. DRAWBACKS IN THE EXISTING SYSTEM

It seems obvious that some areas of a more attractive to user a click points. If this phenomenon is too strong, the likelihood that attackers can guess a password significantly increases. If attackers learn which images are being used, they can select a set likely hotspot through image processing tools or by observing a small set of users o the target image and then building an attack dictionary based on those points.

IV. PROPOSED SYSTEM

A password authentication system should encourage strong passwords while maintaining memo ability. We propose that authentication schemes allow user choice while influencing users
toward stronger password. In our system, the task of selecting weak password (which are easy for attackers to predict) is more tedious, discouraging users from making such choices. In effect, this approach makes choosing a more secure

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password the path of least resistance. Rather than increasing the burden on users, it is easier to follow the system's suggestions for a secure password a feature lacking in most schemes. In future it has greater scope. It can be used everywhere instead of text-based password. We can increase the security of this system by increasing the number of levels used, the number of tolerance squares used.

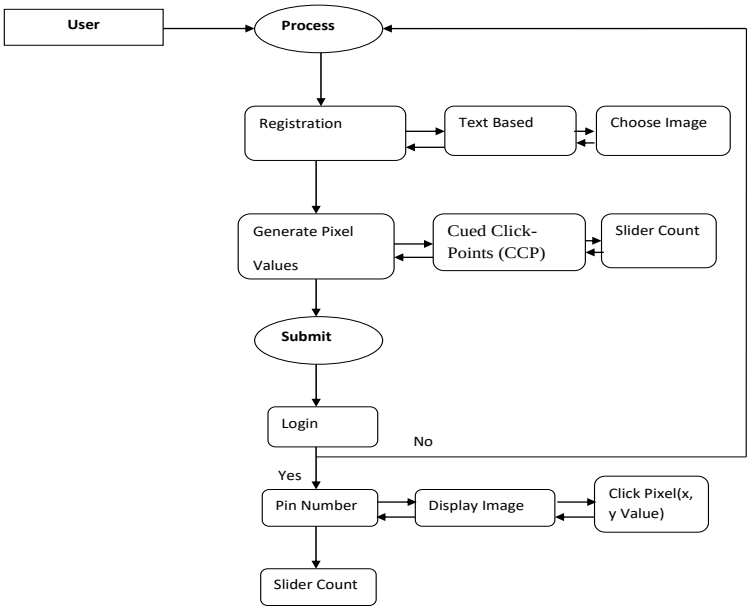

Fig 1: Proposed system

ADVANTAGES OF PROPOSED SYSTEM

- We can increase the security of this system by increasing the number of levels used, the number of tolerance square used.
- User registration increasing the number of levels used authentication.
- Include generate in pixel values randomly.
- Minimum response time.
- Efficiency CPU utilization.
- Less memory spaces.
- High reliability.
- User friendly.

V. MODULE DESCRIPTION

a. SYSTEM TESTING

The most widely used authentication process uses user ID and a password. Our authentication system can be classified under the simple authentication process which is more secure and powerful than the password-based system. This module has two field login and user registration.

b. GRAPHICAL PASSWORD

A user may have many accounts on many computers. User has to remember many passwords. Text passwords easily and user write it down. This can lead to stealing passwords to gain unauthorized access to a system. This field have increasing many levels so third party copied password is impossible.

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c. ACCESS CONTROL

The user submits user ID and an image to the system. If the images match to the one stored in the system, the user is authenticated. Images are easy to remember. It is not easy to guess images. A first-time user to register him with system by providing all his details.

VI. JAVA TECHNOLOGY

Java technology is both a programming language and a platform. The Java programming language is a high-level language that can be characterized by all of the following buzzwords; simple, architecture neutral, object oriented, portable, distributed, high performance, interpreted, multithreaded, robust, dynamic, secure. With most programming languages, you compile or interpret a program so that you can run it on your computer.

The java programming language is unusual in that a program is both compiled and interpreted. With the compiler, first you translate a program into an intermediate language called Java bytes codes. The platform independent codesinterpreted by the interpreter on the Java platform. The interpreter parsesa run each Java byte code instruction on the computer. The following figure illustrates how this works.

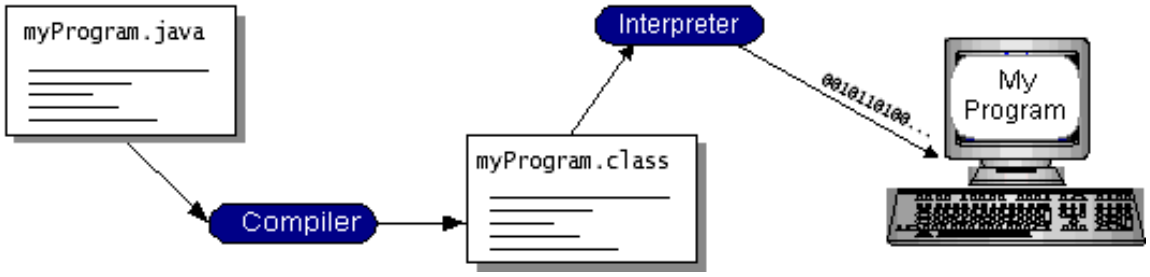

Fig 2: illustrates work

VII. JAVA PLATFORM

A platform is the hardware or software environment in which a program runs. We've already mentioned some of the most popular platform like Windows 2000, Linux, Solaris, andMacOS. Most platform can be described as a combination of the operation system and hardware. The Java platform differs from most other platforms in that it's software-only platform that runs on top of other hardware-based platforms.

The Java Platform has two components:

- The Java Virtual Machine (Java VM)
- The Java Application Programming Interface (Java API).

The Java API is a large collection of ready-made software components that provide many useful capabilities, such as graphical user interface (GUI) widgets. The Java API is grouped into libraries of related classes and interfaces; the libraries are known as pakages. The next section, what can Java Technology Do? Highlights what functionalities some of the packages in the Java API provide.

The following figure depicts a program that's running on the Java platform. As the figure shows, the Java API and the virtual machine insulate the program from the hardware.

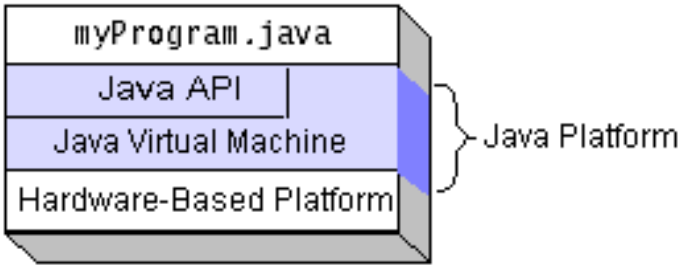

Fig 3: Java VM and API insulate the program from the hardware.

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Native code is code that after you compile it, the compiled code runs on a specific hardware platform. As a platform-independent environment, the Java platform can be a bit slower than native code. However, smart compilers, well-tuned interpreters, and just-in-time byte code compilers can bring performance close to that of native code without threatening portability.

The most common types of programs written in the programming language are applets and applications. If you're probably already familiar with applets. An applet is a program that allow it to run withina Java-enabled browser.

However, the Java programming language is not just for writing cute, entertaining applets for the Web. The general-purpose, high-level Java programming language is also powerful software platform. Using the generous API, you can write many types of programs.

An application is a standalone program that runs directly on the Java platform. A special kind of application known as a server and supports client on a network. Examples of servers are Web servers, proxy servers, mail server, and print servers. Another specialized program is a servlet. A servlet can almost be thought of as an applet that runs on the server side. Java Servlets are a popular choice for building interactive web applications, replacing the use of CGI scripts. Servlets are similar to applets in that they are runtime extensions of applications. Instead of working in browsers, though, servlets run within Java Web servers, configuring or tailoring the server. How does the API support all these kinds of programs? It does so with packages of software components that provide a wide range of functionality. Every full implementation of the Java platform gives you the following features:

The essential: Objects, strings, thread, numbers, input and output, data structures, system properties, date and time so on.

Applets: The set of conventions used by applets.

Networking: URLs, TCP (Transmission Control Protocol), UDP (User Data gram Protocol) sockets, and IP (Inter Protocol) address.

Internationalization: Help for writing programs that can be localized for users worldwide. Programs can automatically adapt to specific locales and be displayed in the appropriate language.

Security: Both low level and high level, including electronic signatures, public and private key management, access control, and certificates.

Software components: Know as JavaBeans, can plug into existing component architectures.

Object serialization: Allows lightweight persistence and communication via Remote Method Invocation (RMI).

Java Database Connectivity (JDBC): Provides uniform access to a wide range of relational databases.

The Java platform also has API's for 2D and 3D graphics, accessibility, servers, collaboration, telephony, speech, animation, and more. The following figure depicts what is included in the Java 2SDK.

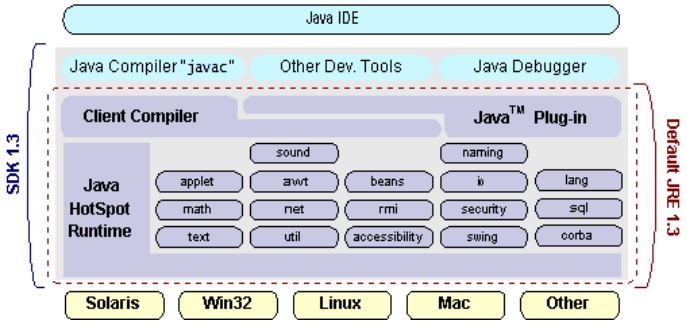

Fig 4: Java 2SDK

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JDBC:

In an effort to set an independent database standard API for Java; Sun microsystem developed Java Database Connectivity, or JDBC. JDBC offers a generic SQL database access mechanism that provides a consistent interface to a variety of RDBMSs. This consistent interface is achieved through the use of "plug-in" database connectivity modules, or drivers. If a database vendor wishes to have JDBCsupport, he or she must provide the driver for each platform that the database and Java run on.

To gain a wider acceptance of JDBC, Sun based JDBC's framework on ODBC. As you discovered earlier in this chapter, ODBC has widespread support on a variety of platforms. Basing JDBC on ODBC will allow vendors to bring JDBC drivers to market much faster than developing a completely new connectivity solution.

JDBC was announced in March of 1996. It was released for 90-days public review that ended June 8, 1996. Because of users input, the final JDBC v1.0 specification was released soon after. Then remainder of this section will cover enough information about JDBC for you to know what it is about and how to use it effectively. This is by means a complete overview of JDBC. That would fill an entire book.

JDBC GOALS

Few software pakages are designed without goals in mind, JDBC is one that, because of its many goals, drove the development of the API. These goals, in conjunction with early reviewer feedback, have finalized the JDBC class library into a solid framework database application in Java.

The goals that were set of JDBC are important. They will give you some insight as to why certain classes and information behave the way they do. The eight design goals for JDBC are as follows:

SQL Level API:

The designers felt that their main goal was to define an SQL interface for Java. Although not the lowestdatabase interface level possible, it is at a low enough level for higher-level tools and APIs to be created. Conversely, it is at a high enough level for application programmers to use it confidently. Attaining this goal allows for future tool vendors to "generate" JDBC code and to hide many of JDBC's complexities from the end user.

SQL Conformance

SQL syntax varies as you move from database vendor to database vendor. In an effort to support a wide variety of vendors, JDBC will allow any query statement to be passed through it to the underlying database driver. This allows the connectivity module to handle non-standard functionality in a manner that is suitable for its users.

JDBC must be implemental on top of common database interfaces

The JDBC SQL API must "sit" on top of another common SQL APIs. This goal allows JDBC to use existing ODBC level drivers by the use of a software interface. This interface would translate JDBC calls to ODBC and vice versa.

Provide a Java interface that is consistent with the rest of the Java system

Because of Java's acceptance in the user community thus far, the designers fell that key should not stray from the current design on the core Java system.

Keep it simple

They goal probably in all software design goal listings. JDBC is no exception. Sun felt that the design of JDBC should be very simple, allowing for only one method of completing a task per mechanism. Allowing duplicate functionality only servers to confuse the users of the API.

Use strong, static typing wherever possible

Strong typing allows for more error checking to be done at compile time; also, less error appear at runtime.

Keep the common cases simple

Because more often than not, the usual SQL calls used by the programmer are simple SELECT's, INSERT'S, DELETE's, and UPDATE's, these queries should be simple to perform with JDBC. However, more complex SQL statements should also be possible.

Java is also unusual in that each Java program is both compiled and interpreted. With a compile you translate a Java program into an intermediate language called Java byte codes the platform-independent code instruction is passed and run on the computer.

Compilation happens just once; interpretation occurs each time the program is executed. The figure illustrates how this works.

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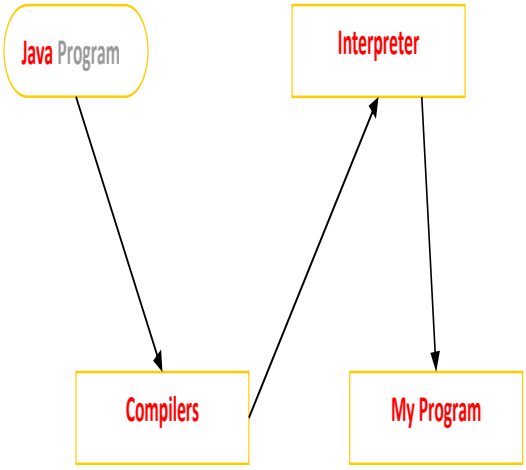

You can think of Java bytes codes as the machine code instructions for the Java Virtual Machine (Java VM). Every interpreter, whether it's a Java development tool or Web browser that can run Java applets, is an implementation of the Java VM can also be implemented in hardware.
Java bytes codes help make "write once, run anywhere". You can compile your Java program into byte codes on my platform that has a Java compiler. The byte codes can then be run any implementation of the Java VM. For example, the
same Java program can run Windows NT, Solaris, and Macintosh.

VIII. RESULT

Textual passwords are easy to guess and get password from the user and is weak to protect. This graphical password system is a type of knowledge-based authentication that attempts to leverage the human memory for visual information. A comprehensive reviewof graphical passwords is available elsewhere. Of interest herein are cued-recall click-based graphical passwords (also known as loci metric). In such system, users identify and target previously selected locations within one or more images. The images act as memory cues to aid recall. Example systems include Pass Points and Cued Click-Points (CCP).

REFERENCES

1. HousamKhalifaBashier, Lau Siong Hoe,Pang Ying Han," Graphicalpassword: Pass-Images Edge Detection"2013 IEEE 9th International Colloquium on Signal Processing and its Applications
2. Madoka Hasegawa, Yuichi Tanaka and Shigeo Kat,"A Study on an image Synthesis Method for Graphical Password "2009 International Symposium on Intelligent Signal Processing and Communication System
3. Kar-Ann Toh, Quoc-Long Tran, andDiptiSrinivasan," Benchmarking a Reduced Multivariate Polynomial patter classifier" IEEE TRANSACTION ON PATTERN ANALYSIS AND MACHINE INTELLIGENCE, VOL.26, NO.6,
4. Yang Hao, Li Changshun, Pei Lei," An improved method of image edge detection based on wavelet transform",2011 IEEE International Conference on 10-12 June 2011
5. R. Dhamija and A. Perrig," Déjà vu: A user study, using images for authenitication," Proc.9th USENIX Security Symposium, August 2000
6. Duan Qing, Li Feng-xiang, Tian Zhao-lei," An improved Method for Wavelet Thresholding Signal Denoising,"" ComputerSimulation, vol .26, no.4, pp.348-351,2009.
7. W.Campbel,K.Torkkol, and S. Balakrishnan," Dimension Reduction Techniques for Training Polynomial Network," Proc. Int" IConf. MachineLearning, June 2000.
8. SubhradeepBiwas,SudipaBiswas, Password Security system with2-way authentication ", Third International Conference Research in Computational Intelligence and Communication Network (ICRCICN).

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BIOGRAPHY

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