

3D Password - An Authentication System

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Abstract: The 3D password authentication scheme is based on a combination of multiple sets of factors. A 3D virtual environment is presented to the user where he navigates and interacts with a multitude of objects which are present. The order in which actions and interactions are performed with respect to the objects constitutes the user's 3D password. The 3D password key space is built on the basis of the design of the 3D virtual environment and the nature of the objects selected. The advantage of the 3D password is that it can combine many existing systems of authentication, providing an extremely high degree of security to the user. Biometrics can be coupled with the 3D password to further increase the degree of security, making it extremely secure and suitable for applications in which information security is of essence.

Keywords: virtual environment, security.

I. INTRODUCTION

The purpose of this document is to present a detailed description of the 3D PASSWORDS AUTHENTICATION SYSTEM. It will explain the purpose and features of the system, the interfaces of the system, what the system will do, the constraints under which it must operate and how the system will react to external stimuli. This document is intended for both the stakeholders and the developers of the system .

The 3D passwords is a more customizable and very interesting way of authentication. Now the passwords are based on the fact of Human memory. Generally simple passwords are set so as to quickly recall them. The human memory, in our scheme has to undergo the facts of Recognition, Recalling. Once implemented and you log in to a secure site, the 3D password GUI opens up. This is an additional textual password which the user can simply put. Once he goes through the first authentication, a 3D virtual room will open on the screen.

Security can be enhanced by the fact of including Cards and Biometric scanner as input. There can be levels of authentication a user can undergo.

II. NEED OF PROJECT

The proposed system is a multi factor authentication scheme that combines the benefits of various authentication schemes. Users have the freedom to select whether the 3D password will be solely recall, biometrics, recognition, or token based, or a combination of two schemes or more. This freedom of selection is necessary because users are different and they have different requirements. Therefore, to ensure high user acceptability, the user's freedom of selection is important.

The 3D password can combine most existing authentication schemes such as textual passwords, graphical passwords, and various types of biometrics into a 3D virtual environment. The choice of what authentication schemes will be part of the user's 3D password reflects the user's preferences and requirements.

III. LITERATURE SURVEY

We have referred the following papers for our project:

1. International Conference on Advances in Communication and Computing Technologies (ICACACT) 2012 Proceedings published by International Journal of Computer Applications® (IJCA) .

2. ISO 9001:2008 Certified International Journal of Engineering Science and Innovative Technology (IJESIT) Volume 2, Issue 2, March 2013 99 Secure Authentication with 3D Password.
3. How to make a Java "3D" game? Part 1 of 5! "Getting Things Going With Rendering And Screen"
<https://www.youtube.com/watch?v=IMLB28jmKNU&spfreload=10>

IV. METHODOLOGY

A. Modules:

1. Registration: The user will register on to the site along with the details with a textual password

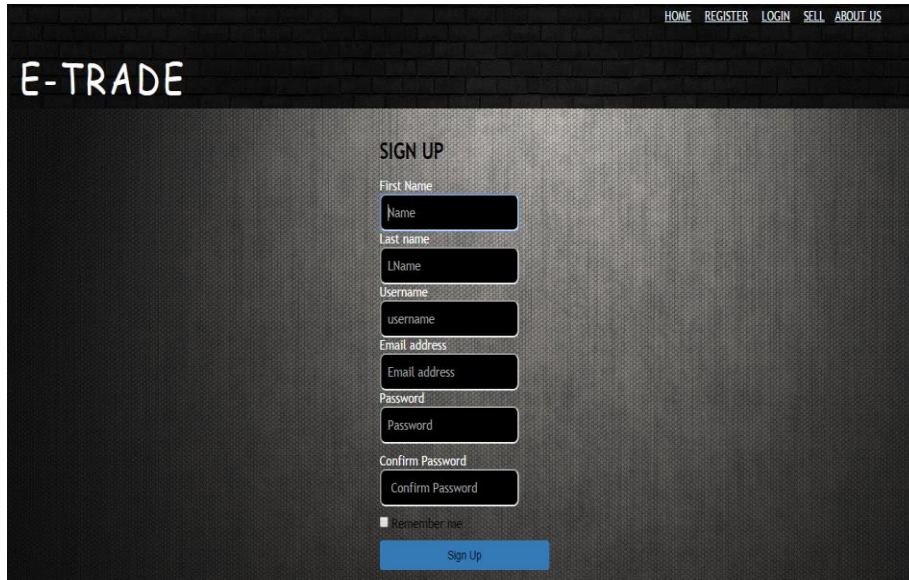
The screenshot shows a web page titled "E-TRADE" with a navigation menu at the top containing "HOME", "REGISTER", "LOGIN", "SELL", and "ABOUT US". The main content area features a "SIGN UP" form. The form includes input fields for "First Name", "Last name", "Username", "Email address", "Password", and "Confirm Password". There is a "Remember me" checkbox and a "Sign Up" button at the bottom of the form.

Figure 1: Registration

2. Logging in: The user will then log in with is username and password he used to register and authenticated the details stored in the database

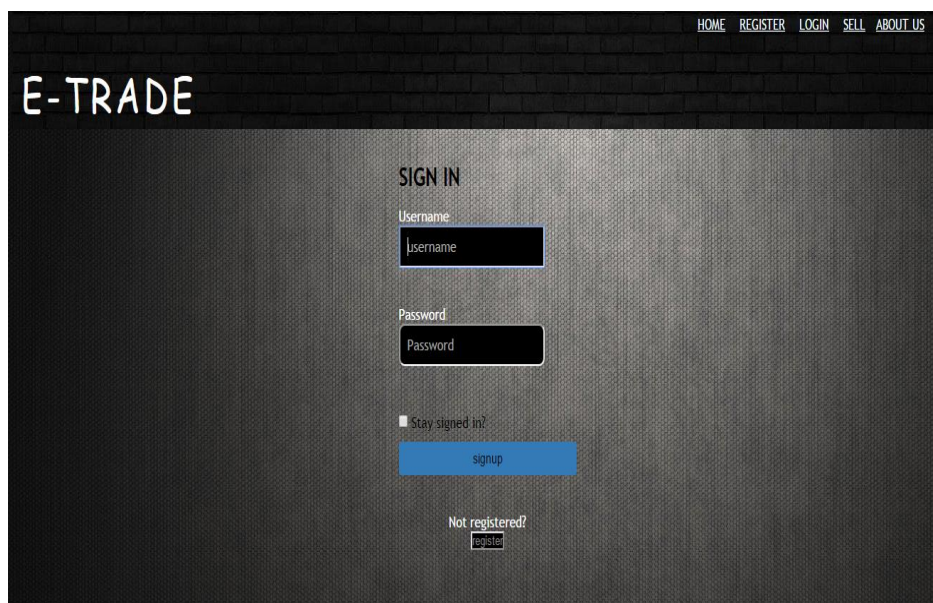
The screenshot shows the same "E-TRADE" web page with the navigation menu. The main content area features a "SIGN IN" form. The form includes input fields for "Username" and "Password". There is a "Stay signed in?" checkbox and a "signin" button. Below the form, there is a link for "Not registered?" with a "register" button.

Figure 2 Log in with textual password

3. 3d Password: As soon as the user is authenticated the 3d environment browser opens up. Here the user can walk through the scene click objects and interact with the objects.



Figure 3: 3d environment

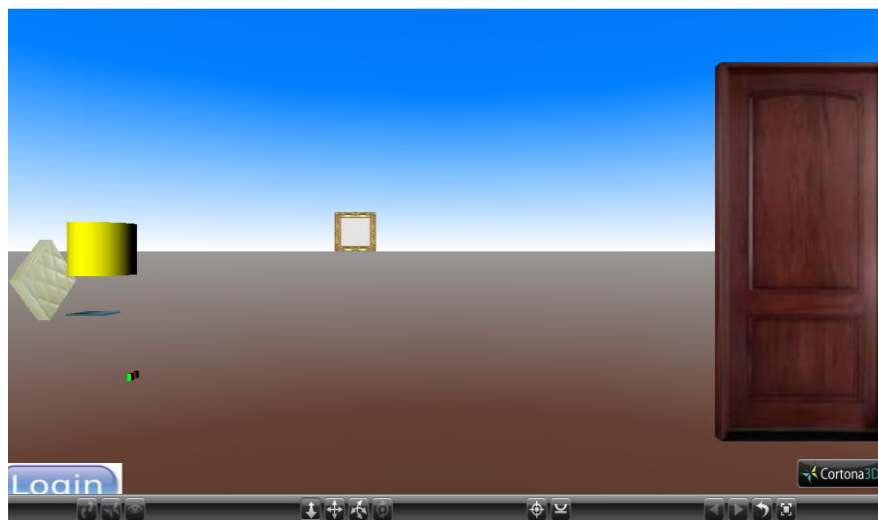


Figure 4 : Interaction with 3d objects

4. Authentication: The user will interact with the objects in a sequence which will be known only to him then after the sequence he will click on the login button which will lead to the home page of the website for the user.

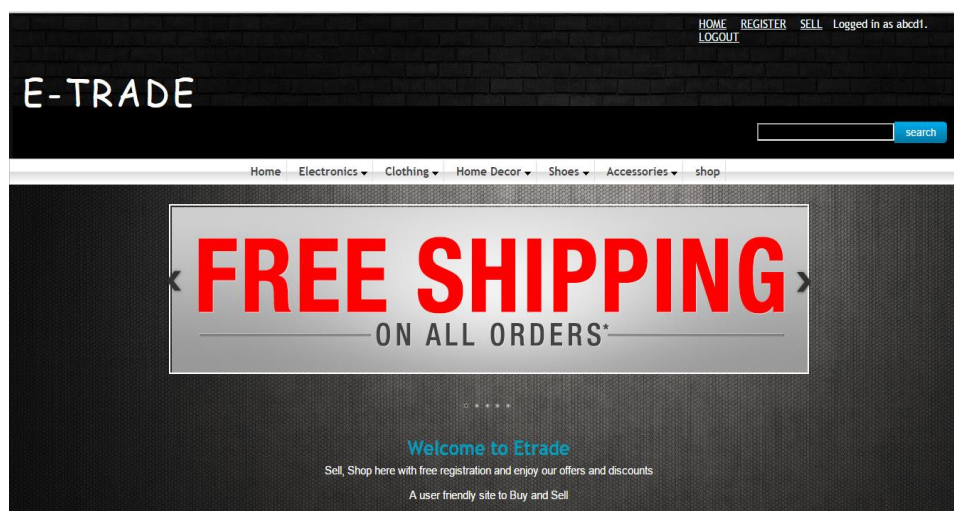


Figure 5: Home page after logging in

B. System Requirements:

Hardware Interfaces:

Server Side:

- Operating System: Windows xp.
- Processor: Pentium 3.0 GHz or higher
- RAM: 256 Mb or more
- Hard Drive: 10 GB or more

Client side:

- Operating System: Windows xp.
- Processor: Pentium III or 2.0 GHz or higher.
- RAM: 256 Mb

Software Interfaces:.

- Application: vtml ,java scripts and java applet, web browser
- Web Server: apache is a powerful Web server that provides a highly reliable, manageable, and scalable Web application infrastructure
- Web browser: with flash player plug in.

C. Designs and Figures:

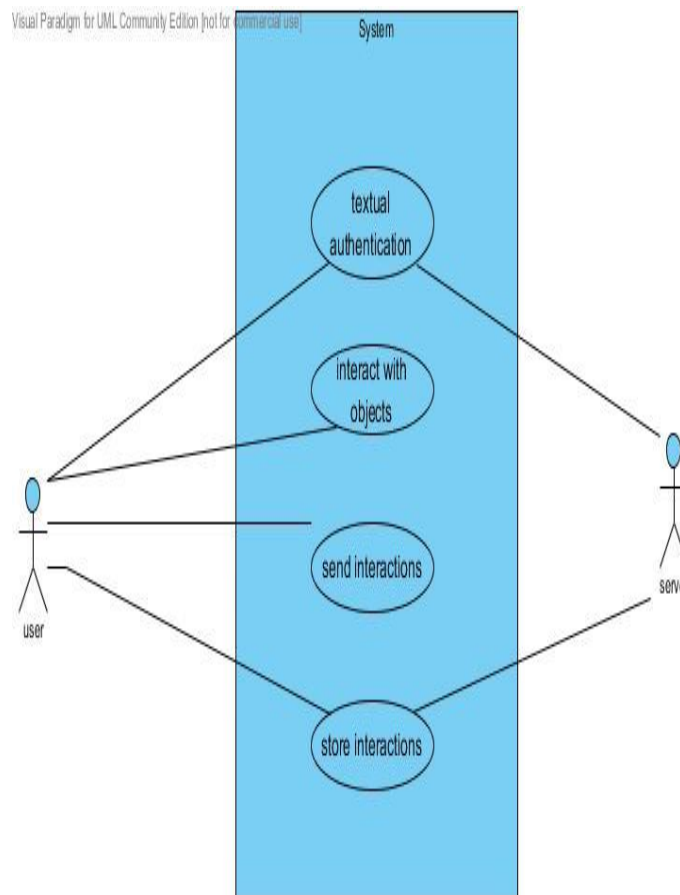


Figure 6:Use case Diagram

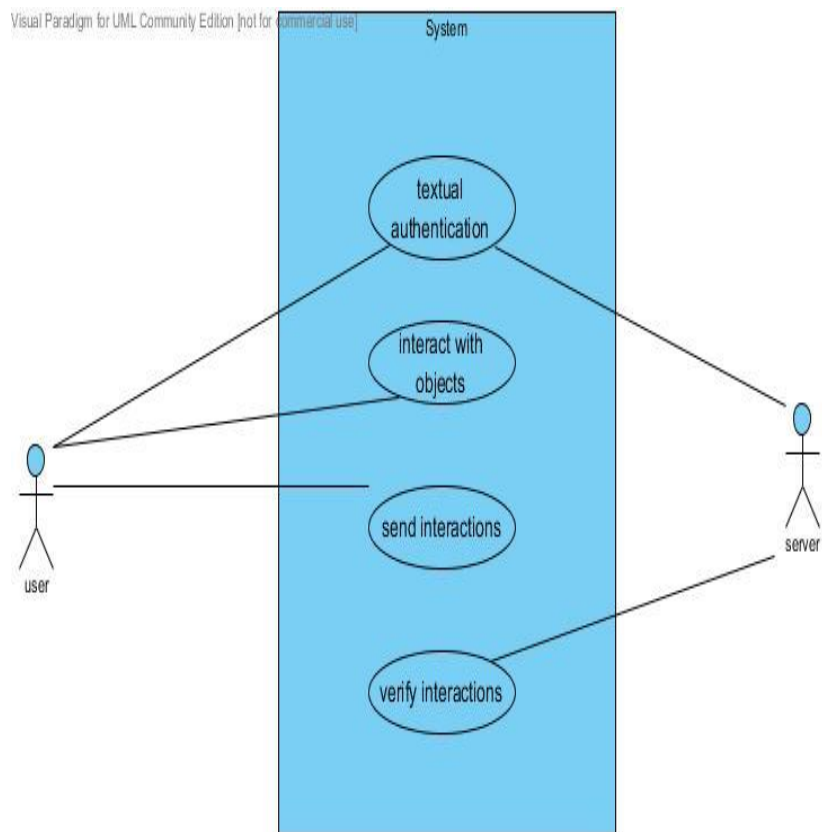


Figure :7-Use case Diagram

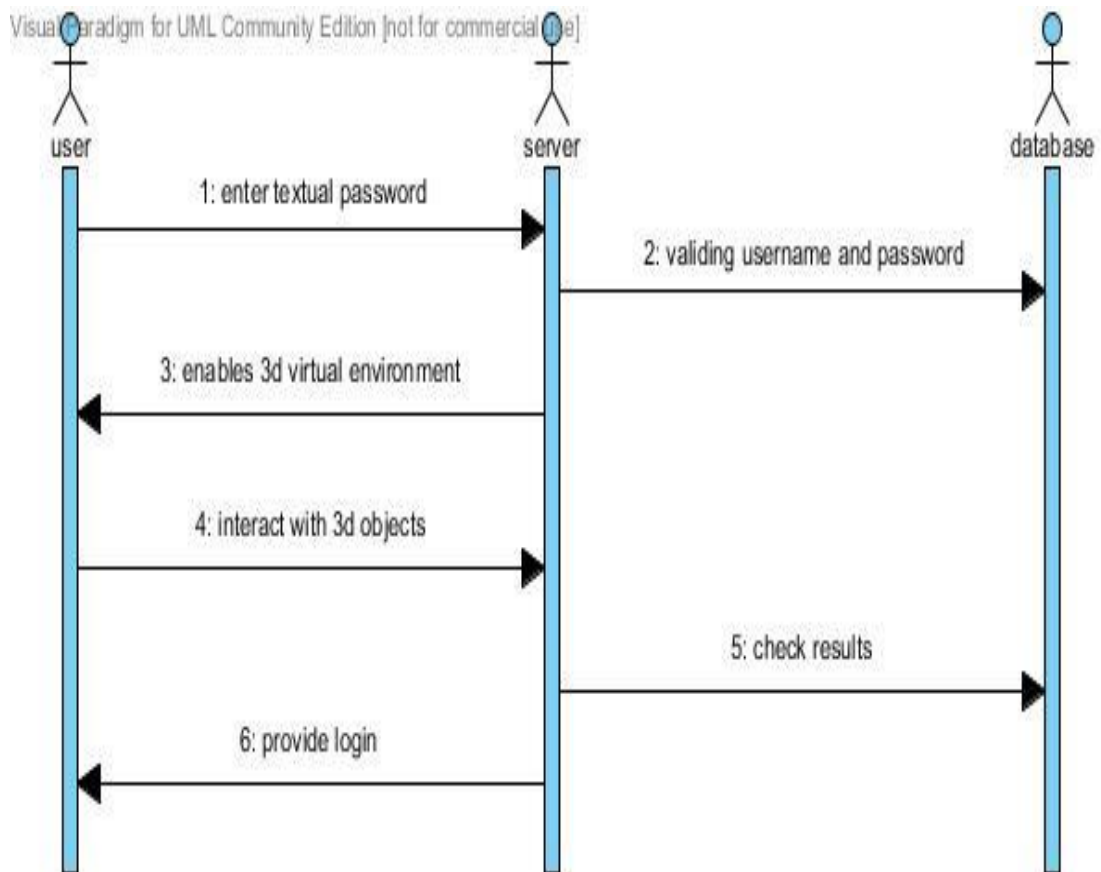


Figure 8:UML diagram

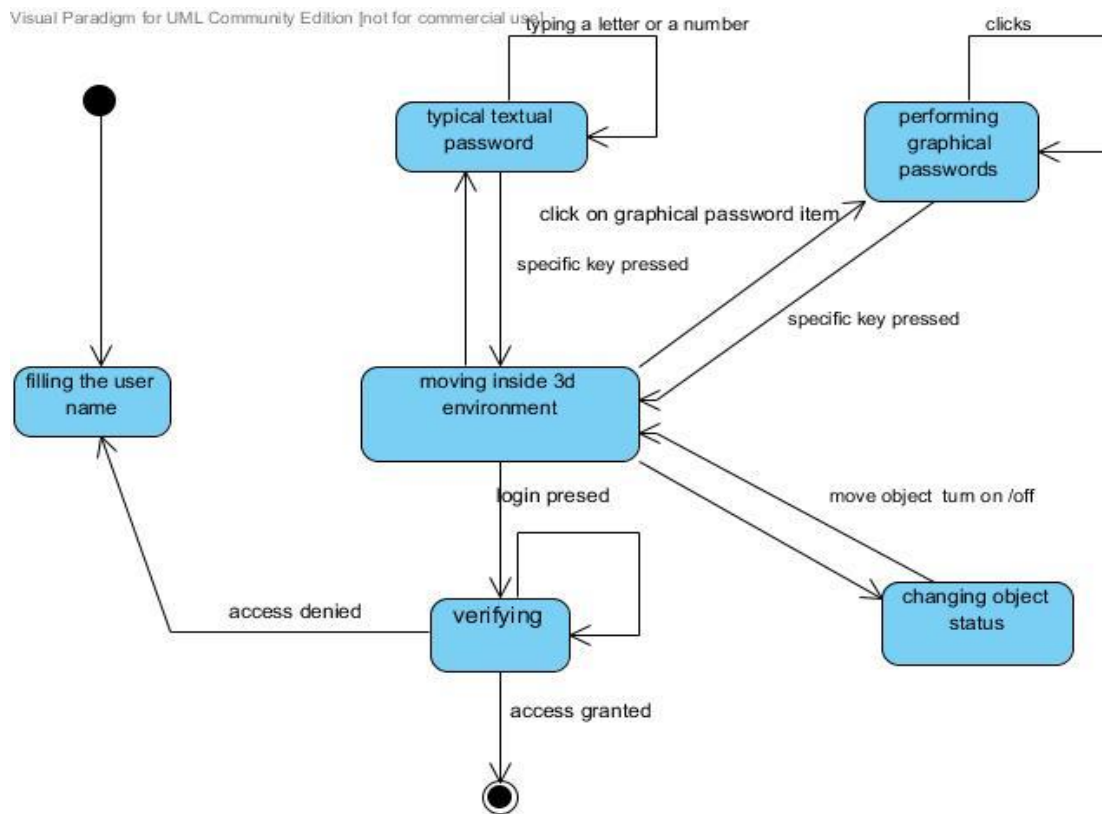


Figure 9: Flow diagram

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