# Security features in interactive information systems

**Irma-Delia Rojas-Cuevas[1], José-Rafael Mendoza-Vázquez[2], Raquel Mauricio García[3]**
Instituto Tecnológico de Puebla, [1]Departamento de Sistemas y Computación.
[2]Departamento de Metal Mecánica, [2]División de Estudios de Postgrado e Investigación,
[3]Departamento de Desarrollo Académico.
Av. Tecnológico 420 Col Maravillas, Puebla, Puebla, México
jrmendoza@inaoep.mx

Abstract - Interactive systems are now capable of handling large amounts of information. For some systems as the systems of teacher-student mentoring is important to ensure the confidentiality of this information due to his personal character. Therefore, this paper presents different methods to ensure data security in tutoring system information: the main data are stored in a database encrypted so that if one has unauthorized access to the system, data cannot be seen. A method of separating a database into tables of information by categories of users to ensure data privacy and preventing any unauthorized access is presented. To access the information system through the address bar has coded using an algorithm that has no option to reverse, ensuring that it can be decrypted and before any modification is completely lost the link.

## 1. Introduction

Due to technological advances, changes have been raising about the Mexican's personal information, by this reason the Constitution of the United Mexican States [1] has suffered a series of changes, following the direction of first world countries. One of these changes ensure the protection of personal data and privacy of individuals. In the case of public and private universities there is great concern about the low performance and dropout students [2], why it seeks to provide an escort during their stay in college, for this have been created tutoring systems, in such systems is assigned a teacher (tutor) to a group of students (students) to guide them, for that the student must follow a process that involves providing information that support the academic tutor in order to monitoring and supervision of their students, that information is reflected in documents containing personal data are saved in a server. For this reason it needs to ensure the confidentiality of the database system tutorials. In this paper we present some strategies to protect information provided by the tutor, so as to ensure the confidentiality and availability of it only by authorized personnel. In this document will discuss protection strategies tutoring logic to the system developed for the Instituto Tecnológico de Puebla. Within the protection logic will present the issues in the areas of prevention and recovery.

## 2. Background

In the informatica area can point to two main sources that threaten the security, natural disasters such as fires, floods, earthquakes and human threats that may come from sources such as malicious employees who don't know the system and can do to fail it, or malicious threats can come from internal or external sources[3]. It also identifies three stages to a threat that is before, during and after an attack by what mechanisms should be used for prevention, detection and recovery [3]. One mechanism of prevention most used is cryptography, some of the algorithms used in this area are: one-way hash functions, symmetric cryptography, asymmetric cryptography, digital signatures, digital certificates, etc. [4][5].