

## Final Projects

### Important information.

Each project provides a module for a web system for fingerprint identification. The algorithms for performing the fingerprint verification or identification will be provided in a Dynamic-link library (DLL), which must be included in each project requiring this DLL.

All projects must be based on the last technologies for the front-end (client-side) web development. For the back-end (server-side), all projects must be based on the .NET; specifically, c# as language programming as well as Rest API or web services. As database management system, SQL express should be used. Each project should provide reports, and CRUD (create, read, update, and delete) operations over the designed database. As a fundamental requirement, all projects should be delivered in a Visual Studio's Solution, Version 2017.

### Project Summaries:

1. **[Enrique Lozada Vega] – Latent Edition.** This module should be able to capture and edit latent prints (palmprints or fingerprints). For this module, the user should upload a latent print coming from a scanner or a file on the hard drive. Also, the user can specify the region to which the latent print belongs (Thumb, Index, Middle, Ring, Pinky, or palm) and adjust the latent-print image according to brightness, contrast, crop, and so on. Additionally, the user can add or remove minutiae before upload the latent print to the system.
2. **[Ricardo Urbina Maldonado] – Verification.** This module should be able to show if there is a match between two prints (palmprints or fingerprints). For this module, the user should upload two prints and also specify the region to be compared (Thumb, Index, Middle, Ring, Pinky, or palm). For the match case, the system user will see the coincident minutiae, and if the user does click over a minutia, then both this minutia and its corresponding are highlighted.
3. **[Eduardo Luna Gutierrez] – Latent Identification.** This module should be able to show, from a given latent print (palmprints or fingerprints), a ranked list of prints matching with the given print and their corresponding people information. For this module, the user should upload a latent print, the list of minutiae and specify the region to be compared (Thumb, Index, Middle, Ring, Pinky, or palm). For each print of the ranked list, the system user will see the coincident minutiae, and if the user does click over a minutia, then both this minutia and its corresponding are highlighted.

It is important to highlight that the description provided above for each project is a brief introduction and this does not contain all functional requirements. Therefore, students should capture the user requirements before starting the programming stage of their final project. The teacher of the course will be the designated user for asking any doubt or question to capture the user requirements for the selected-final project.