

DCCS Certificate App Documentation

Developed the application: Edis Vrtagic

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Introduction

This documentation describes the implementation and architecture of the DCCS Certificate Desktop Application. The DCCS Certificate App was developed as part of a technical task for an internship program. This documentation is intended for the technical team to review technical tasks.

App Intro

Certificate App is desktop app used for managing certificates. Application provides possibility to track issued certificates (certificate overview) but also editing certificates. By editing, it is considered that over application is possible to create, edit and remove certificate. For each certificate, there is supplier - company that can issue the certificate. Additionally, on certificate it is possible to add certificate participants, which are persons assigned to certificate.

Application itself contains:

- Home page – which is starting point of application
- Certificate Overview page – page for managing existing certificates and adding new certificates

Additionally, application has multilanguage support. That means that German and English language are available.

All of the above described functionalities are split in tasks and each task contains more details about app requirements.

Application Architecture

The DCCS Certificate App is developed as a Windows Forms application in the C# programming language. The application architecture consists of the following components:

App Main Form: The main form used for displaying and managing certificates and participants.

Certificate Overview Control: Control for displaying certificate information.

Person Control: Control for displaying information about individuals.

Supplier Control: Control for displaying information about suppliers.

Participant Control: Control for displaying information about participants.

Additionally, the UI of the application was created using the GunaUI2 package, which is available for building Windows Forms applications and includes many elements that are applied in the application.

The application utilizes a local SQL Server database for storing certificates and information about participants and individuals.

Implementation and Code Structure

The code of the Certificate App application is organized in the following structure:

AppMainForm.cs: The main application form that contains the logic for displaying and managing certificates, participants, and individuals.

CertificateOverviewControl.cs: Control for displaying certificate information and adding certificates.

PersonControl.cs: Control for displaying information about individuals.

SupplierControl.cs: Control for displaying information about suppliers.

ParticipantControl.cs: Control for displaying information about participants.

Key functionalities are implemented through methods and events in these components, and as such, the code is separated into multiple components.

Instructions for using and connecting the application to the database

1.0.0. Home page

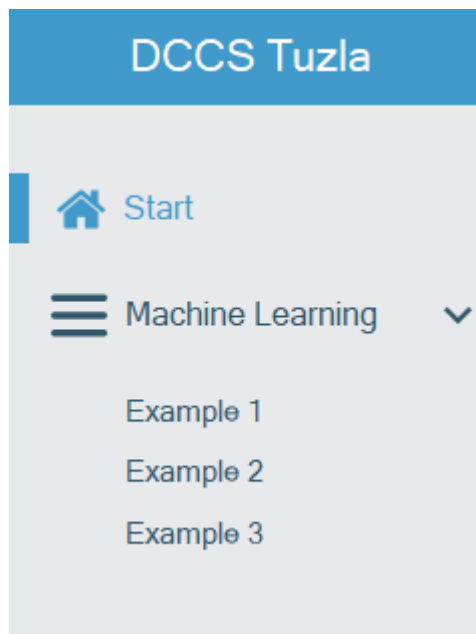
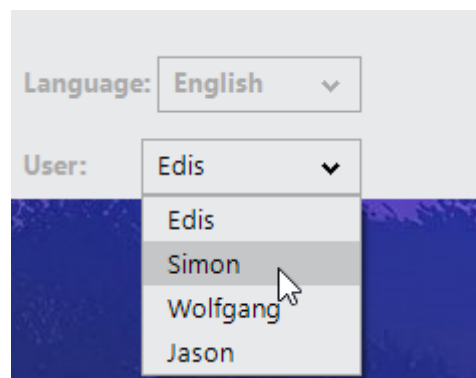
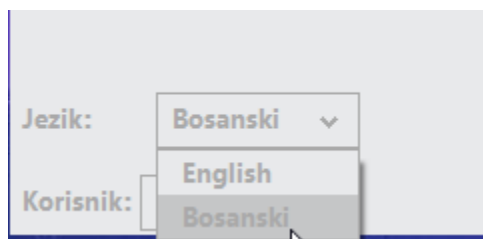


Image 1.0. Home page and dropdown menu with options

When we launch the application, we get a menu that includes the following options: Start, Machine Learning, Example 1, Example 2, Example 3. If we press Start, we get the Machine Learning submenu, which, when clicked, opens three submenus.

1.0.1. Menu for selecting language and user



Images 2.0. and 3.0. Menu for selecting language and user

If we open the dropdown menu for selecting a language, we are offered two languages, which are English and Bosnian. By choosing one of the languages, the entire application switches to that language. If we open the dropdown menu for selecting a user, we are presented with several options. If we want to work in the application and perform functionalities, we can do so by selecting one of the users.

1.0.2. List of certificates and adding new ones

New certificate				
	Supplier	Certificate type	Valid from	Valid to
	ANDEMIS GmbH, 1, Stuttgart	CCC certificate	10. 10. 2023.	15. 10. 2023.
	DAIMLER AG, 1, Berlin	Permission of Printing	16. 10. 2023.	21. 10. 2023.
	ANDEMIS GmbH, 1, Stuttgart	OHSAS 18001	22. 10. 2023.	27. 10. 2023.

Image 4.0. List of certificates

When we select Example 1 from the previous dropdown menu, we get a table with a list of added suppliers to the certificate, their names, certificate type, valid from date, and valid to date.

New certificate

Supplier

ANDEMIS GmbH, 1, Stuttgart

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Certificate type

OHSAS 18001

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Valid from

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Edit

Save

Upload

Image 5.0. Adding suppliers to the certificate

When we click on the previous 'New Certificate' button, a new dialog opens where we can add suppliers to the certificate by entering their names, selecting the certificate type, the valid from date, the valid to date, and then saving all this data to the database and the corresponding table.

1.0.3. Editing and deleting suppliers from the certificate




	Supplier	Certificate type	Valid from	Valid to
	ANDEMIS GmbH, 1, Stuttgart	CCC certificate	10. 10. 2023.	15. 10. 2023.
	DAIMLER AG, 1, Berlin	Permission of Printing	16. 10. 2023.	21. 10. 2023.

Image 6.0. Gear with options Edit and Delete

New certificate


Supplier


Certificate type

CCC certificate


Valid from


10. 10. 2023.

Valid to


15. 10. 2023.

15. 10. 2023.



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oktober 2023.

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25	26	27	28	29	30	1
2	3	4	5	6	7	8

Edit

Save

Image 7.0. Option Edit

If we click on the gear icon in the image (6.0.), a menu opens containing two options, namely 'Edit' and 'Delete.' By selecting the 'Edit' option, the same dialog as for adding new suppliers to the certificate opens, but this time with pre-filled values that we can edit as desired. After finishing the editing, we can click the 'Edit' button, and it will make the changes in the database. If we click on the gear icon in the image (6.0.), we also have another option, which is 'Delete.' By clicking on this option, we remove the supplier from the certificate.

1.0.4. Supplier for search

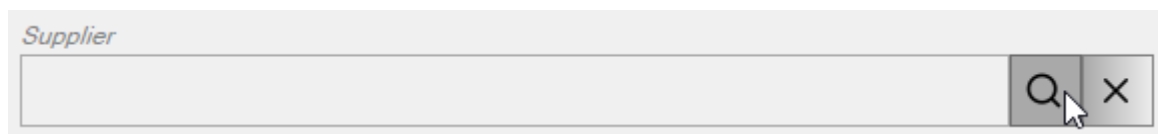


Image 8.0. Supplier for search

If we click the search button, a dialog will open where we can search for suppliers, and if we click the 'X' button next to the search, it will clear the supplier input.

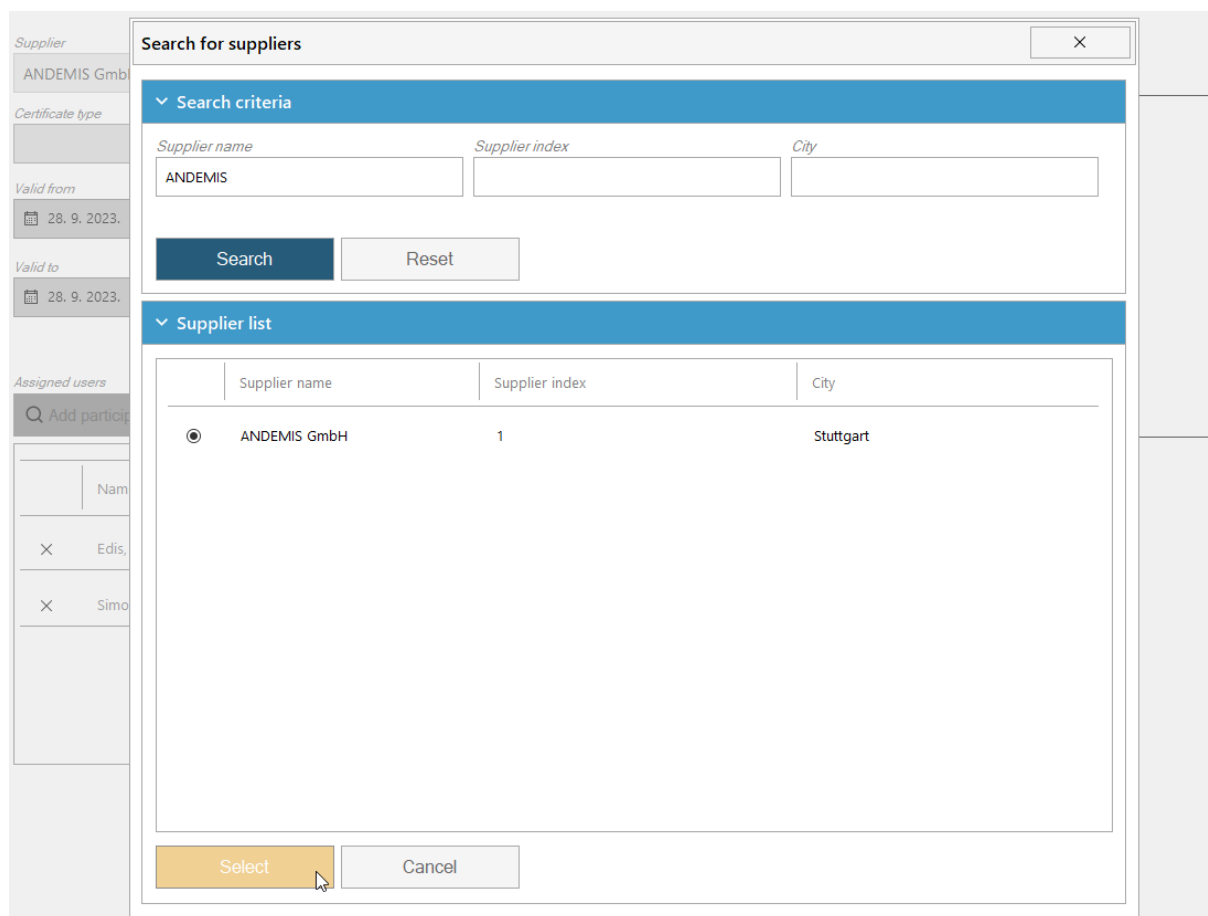


Image 9.0. Search for suppliers by criteria

When the supplier search dialog opens, we can search for them using various filters such as supplier name, supplier index, and city. If one of the suppliers is found based on the specified criteria, a list of suppliers with their information will appear. If we select a found supplier using a RadioButton and then click the 'Select' option, the supplier's name will be added to the original certificate field for addition. If we click the 'Cancel' button, the dialog closes, and by clicking the 'Reset' button, all filters are reset to empty fields. Additionally, in the upper right corner, clicking the 'X' closes the entire dialog.

1.0.5. Adding and Searching Participants

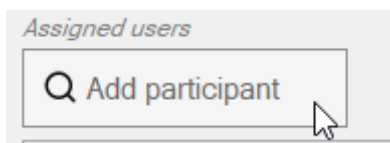


Image 10.0. Adding participants

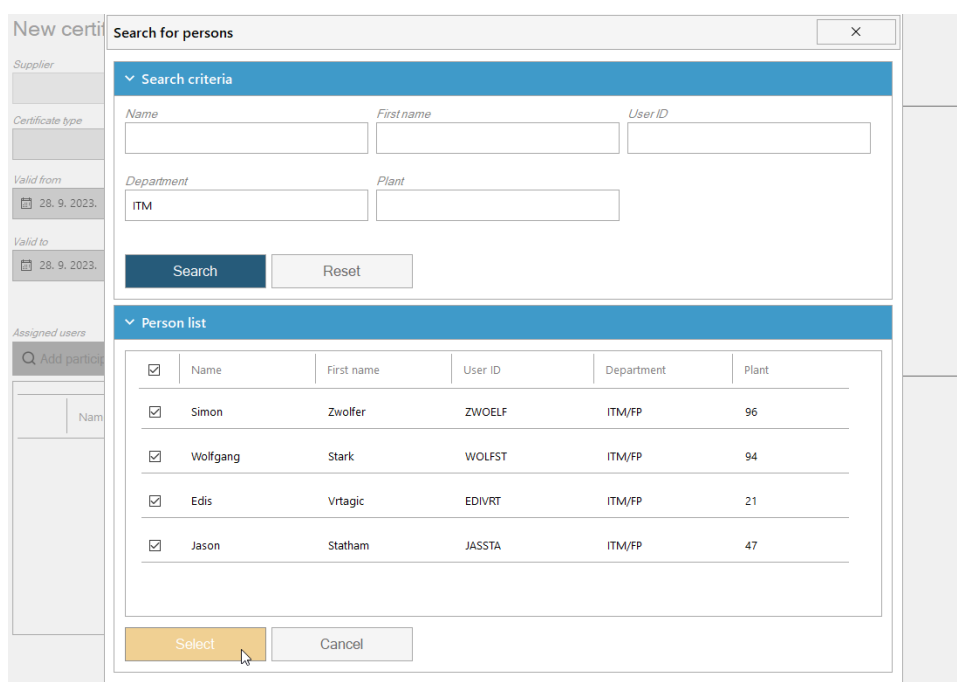


Image 11.0. Searching participants

If we click the 'Add participant' button located below adding and editing suppliers, a dialog opens where we have filters for searching individuals based on criteria such as first name, last name, user ID, department, and plant. If the criteria are met and individuals are found, we get a list of individuals that we can add to the list of participants. Here, we can individually select them using checkboxes or select all individuals at once and add them when we click the 'Select' button. If we click the 'Cancel' button, the dialog closes, and if we click the 'X' button in the upper right corner, the entire dialog closes. The 'Reset' button clears all entered filters.

Assigned users

Q Add participant

	Name	Department	E-mail
X	Simon, Zwolfer (96)	ITM/FP	simonz@mail.com
X	Wolfgang, Stark (94)	ITM/FP	wolfgangs@mail.com
X	Edis, Vrtagic (21)	ITM/FP	edisv@mail.com
X	Jason, Statham (47)	ITM/FP	jasons@mail.com

Image 12.0. List of participants

After adding individuals to the list of participants, we can see the list of all added participants, and on the left side, there is an 'X' button that, when pressed, removes a person from the list of participants.

1.0.6. Adding and Viewing Images and Adding Comments

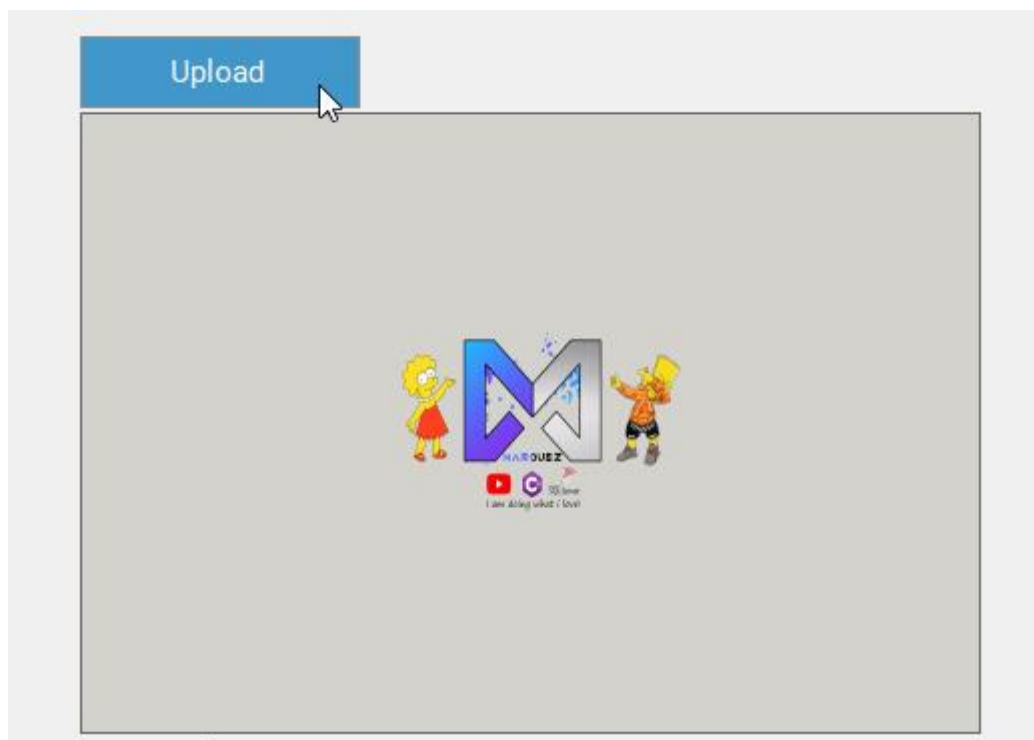


Image 13.0. Adding and Viewing Images

The option for adding an image is located in the section where we add and edit suppliers for the certificate, on the right side. In this section, when we click the 'Upload' button, a dialog opens where we can select and preview the file we want to add.

Image 14.0. Adding and Displaying Comments

The section for adding comments is also located in the part where we add suppliers to the certificate, just below all the options. When we click the 'New comment' option, a dialog opens where we can enter text as desired. After clicking the 'Comment' button, the comment is saved in the database and displayed in the dialog. This comment includes the user's name, their written comment, and it's worth noting that when selecting a user from the dropdown menu, the comment is associated with that user here as well.

1.0.7. Database schema

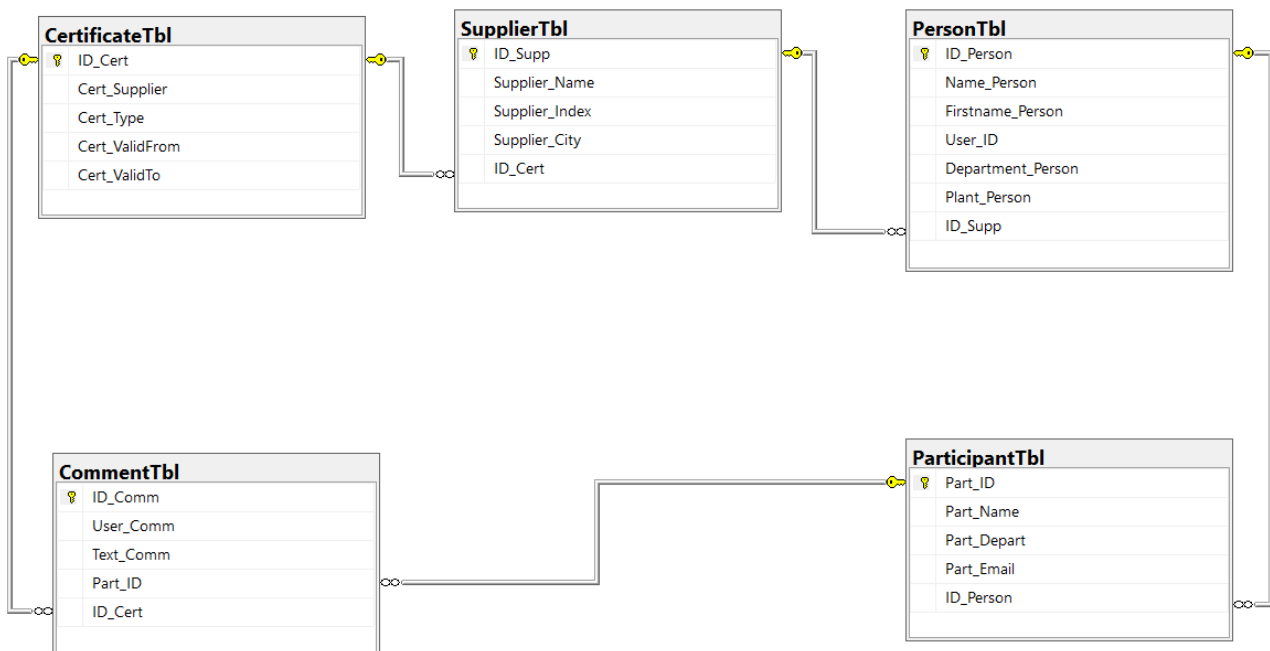


Image 15.0. Database schema

In Image 15.0, we can see the database schema, specifically a database named CertificateDB, which contains several tables: CertificateTbl, SupplierTbl, PersonTbl, ParticipantTbl, and CommentTbl. Each of these tables contains information that will be stored in them during the use of the application and the execution of specific code. Additionally, this database is relational, as can be observed in the attached diagram, where each table has its primary key and foreign key, i.e., the primary key of another table. Please note that foreign keys currently allow NULL values, and therefore, nothing is recorded in them, so this part can be modified as needed.

1.0.8. Configuration file for connecting to the database

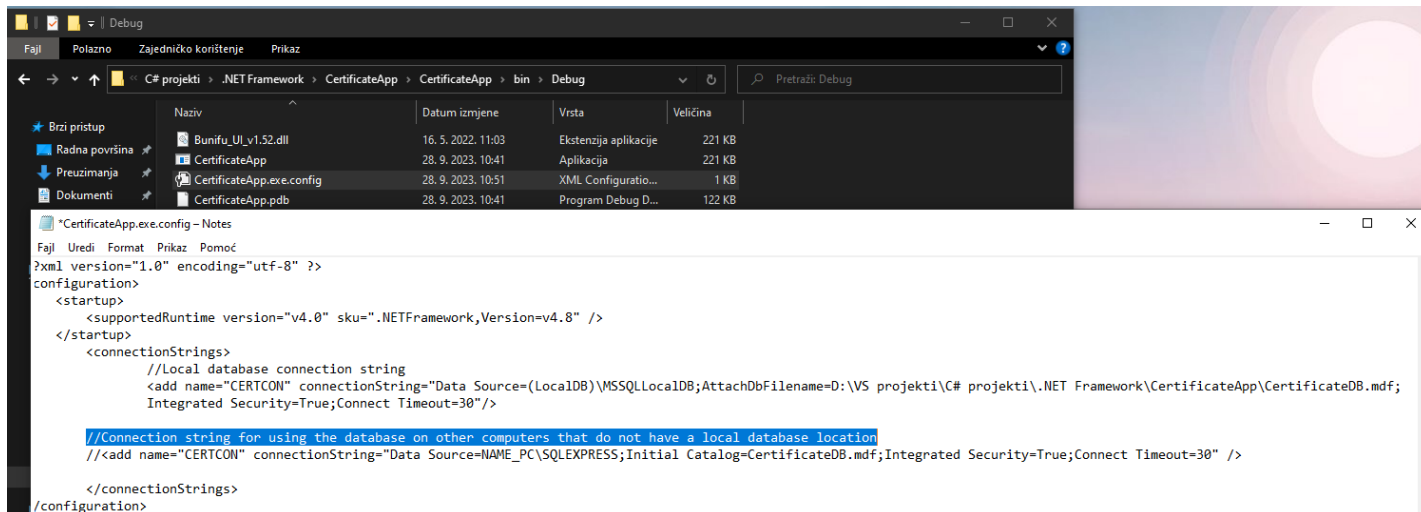


Image 16.0. Configuration file for connecting to the database

In the configuration file `CertificateApp.exe.config` located in the `bin => Debug` folder, you need to modify the database connection depending on whether you will be using a local database as in my case or connecting directly through SQL Server. In the image, you can see how to define the connection in both cases to ensure the application runs correctly.

Additionally, in some cases, when reviewing the UI of the application in Visual Studio, it may be necessary to install the GunaUI2 package, and in the application folder, there is also BunifuUI. If elements fail to load, you may need to add it manually.

1.0.9. Contact info

If you have any additional questions or uncertainties regarding the DCCS Certificate App, please contact me at the following links:

Email: edis_vrtagic@hotmail.com

Linkedin: <https://www.linkedin.com/in/edis-vrtagic22/>