

*E-learning opportunities  
for JSEC – prototype 1*

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*Characteristics of the prototype*

- ❖ Based on .NET Framework
- ❖ Enables dynamic exchange of the contents
- ❖ Maintainable
- ❖ Extendable
- ❖ Interactive and user-friendly
- ❖ Flexible for the whole curriculum
- ❖ Developing language is irrelevant

## *Required software*

- ❖ .NET Framework
  - Developing technologies:
    - ASP.NET
    - WinForms
  - Class libraries:
    - ADO.NET
  - Basic class libraries
  - Common Language Runtime
- ❖ IIS (Internet Information Services)
- ❖ SQL Server 2000

## *Three kinds of users*

- ❖ Application administrator
  - Adds and deletes courses, lecturers and students
- ❖ Course administrator (lecturer)
  - Completely administers the course(s):
  - Uses the mail as an ordinary user (inherited);
- ❖ Student
  - Uses the mail, reads and downloads all materials, participates in a forum, gets and sends assignments

## *Administration of the course*

- ❖ Sets up and deletes lectures from a zip file
  - Weak point of the prototype !
- ❖ Sends and deletes different materials
- ❖ Composes, sends and marks assignments
- ❖ Generates the final grade

## *Application development*

- ❖ Creation of the database
- ❖ Creation of the project and setting of project properties
- ❖ Creation of user classes
- ❖ Creation of main forms for interaction
- ❖ Validation of all input forms

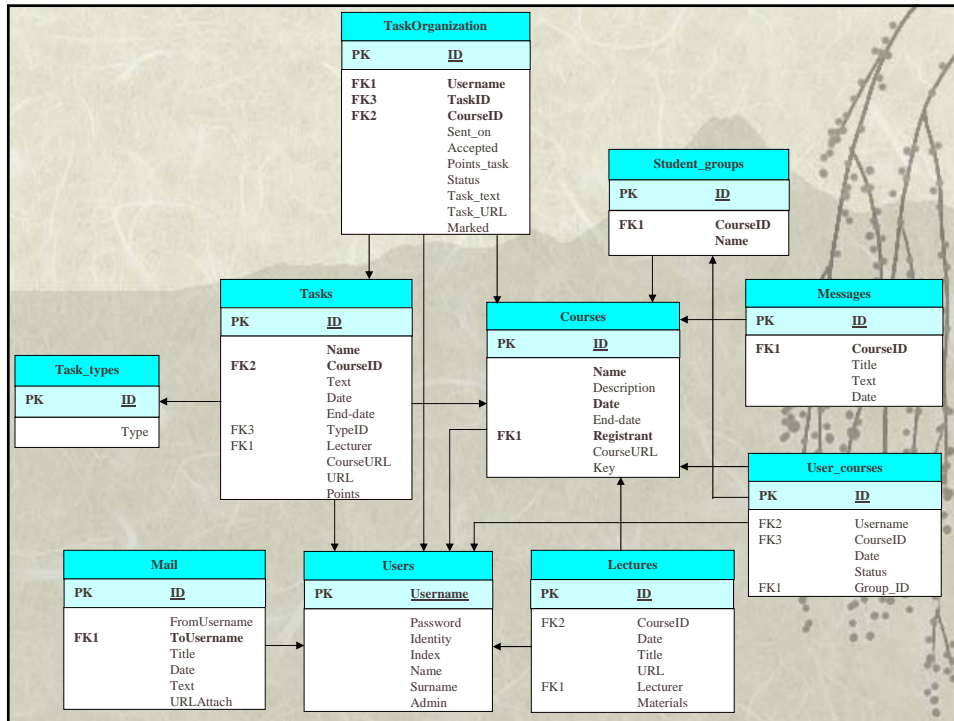
## *Current database*

- ❖ SQL Server 2000
  - Compatible with the .NET Framework
  - Powerful
  - Offers wide range of possibilities
  - Flexible

## *Advantages and disadvantages*

- ❖ Complete manipulation is done through stored procedures
  - “Clean” code: SQL statements are at one place, so their transfer in the code is not needed
  - Very fast
- ❖ Database is intuitive
  - It needs restructuring, but it works even now





## Creation of the project

- ❖ Empty project
  - Visual Studio .NET
  - Specification of all parameters:
    - server hard disk
    - IIS
- ❖ Internal setting of the properties through a standard XML file (web.config)
  - Language, state of user session, localisation and encoding of the text, application variables
  - Access to these settings is given only to the administrator

## *User classes*

- ❖ Additional classes (inherited or extended ASP.NET controls)
- ❖ Connection with the database
- ❖ Table manipulation (grid)
- ❖ Form controls
- ❖ Global variables
- ❖ Performing independent functions

## *Main forms for interaction*

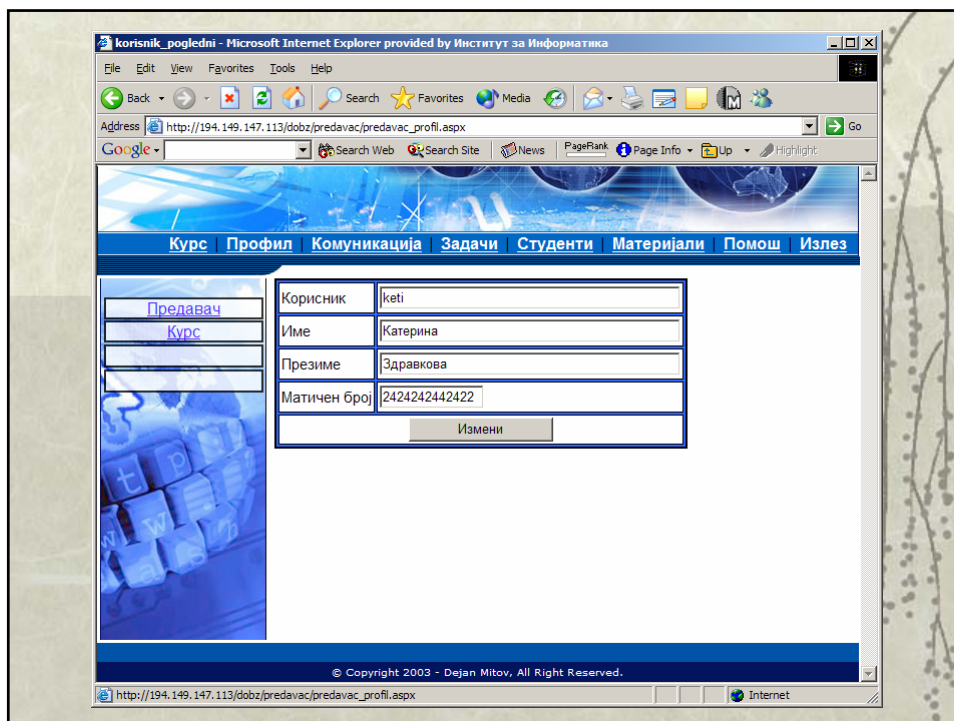
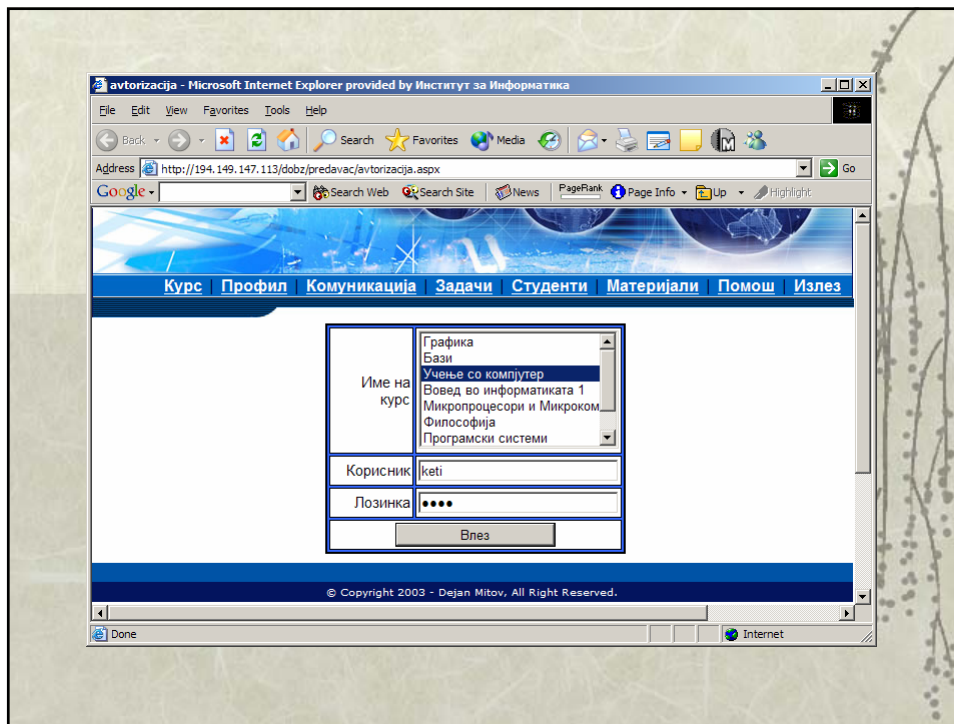
- ❖ Different part of development environment
- ❖ Main window to position the components and present the code
- ❖ Tool bar
- ❖ Window with the file list, class hierarchy and dynamic support

## *Validation of all input forms*

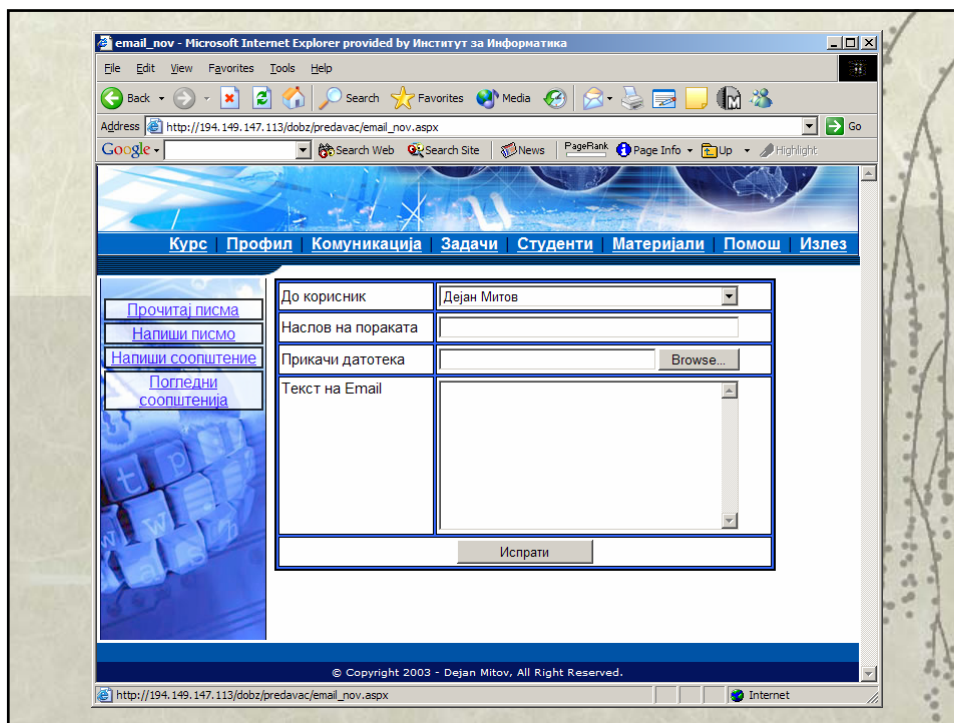
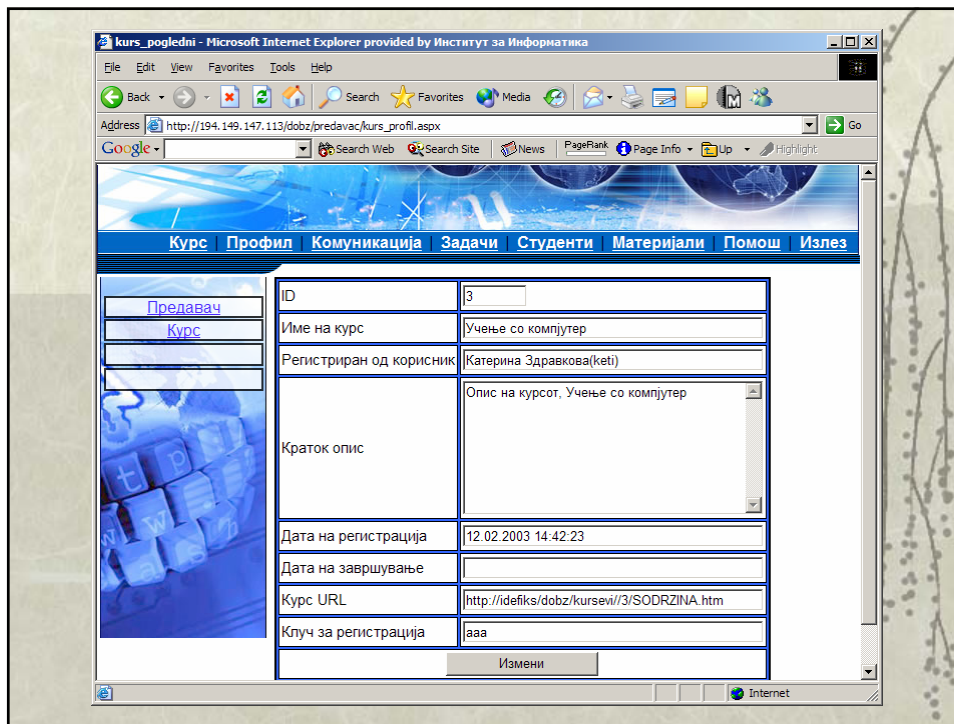
- ❖ Predicts and disables errors during data input
- ❖ Validation is made before inputs are processed
- ❖ Problem: script languages could potentially disturb validation
- ❖ Actual solution → double validation:
  - At client side (optional)
  - At server side (compulsory)

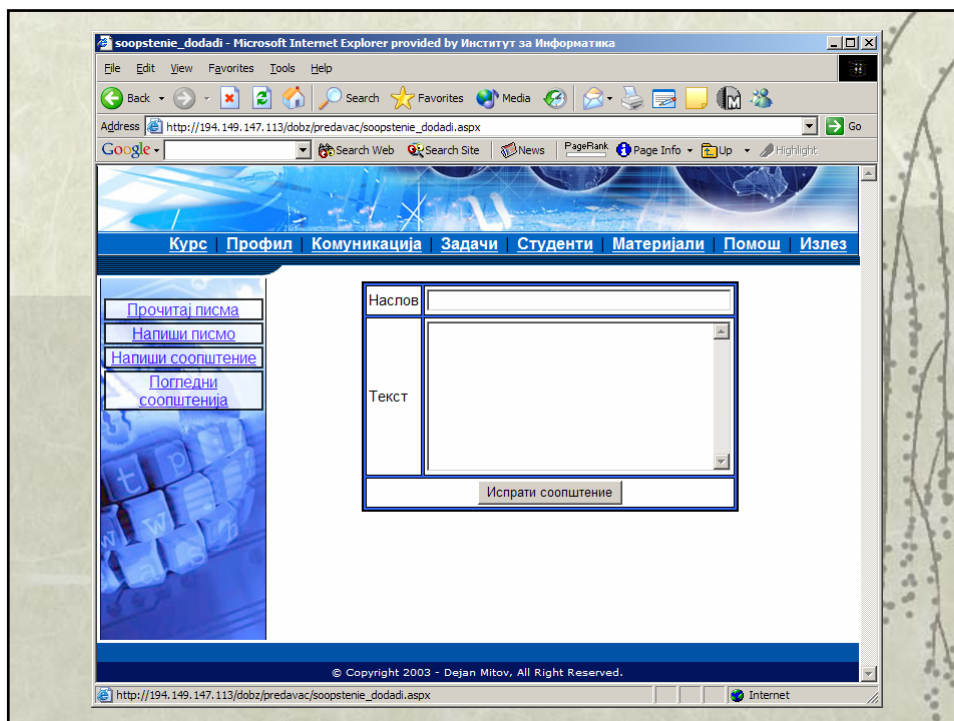
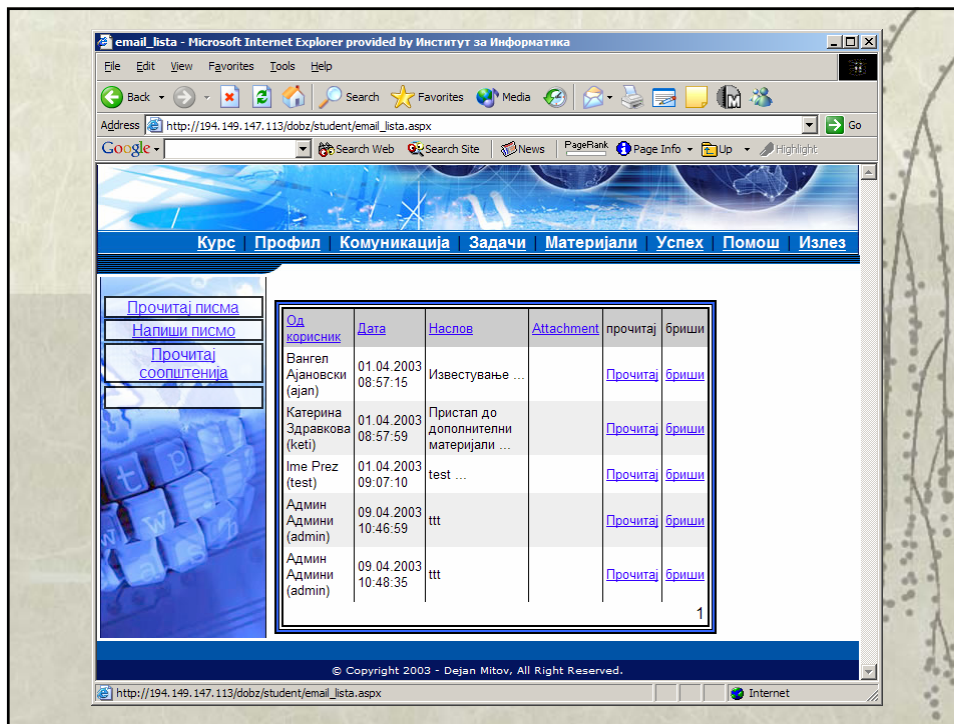
## *References*

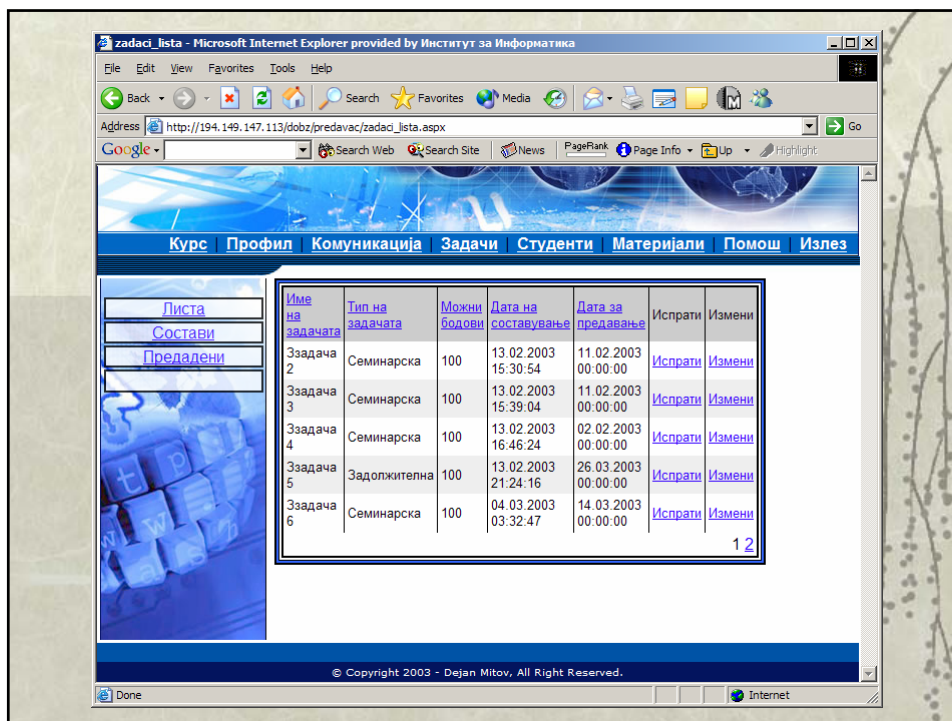
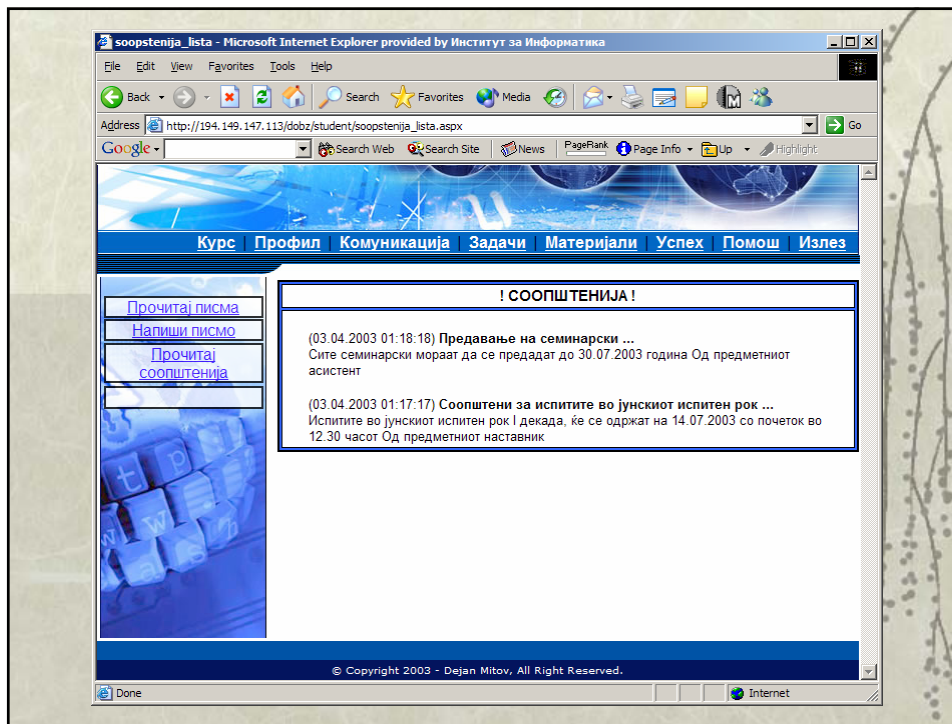
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- ❖ Mayo, J, *C# Unleashed*, Sams 2002
- ❖ Platt, D. *Develop Polished Web Form Controls the easy way with the .NET Framework*, MSDN Magazine June 2002-Vol 17/6
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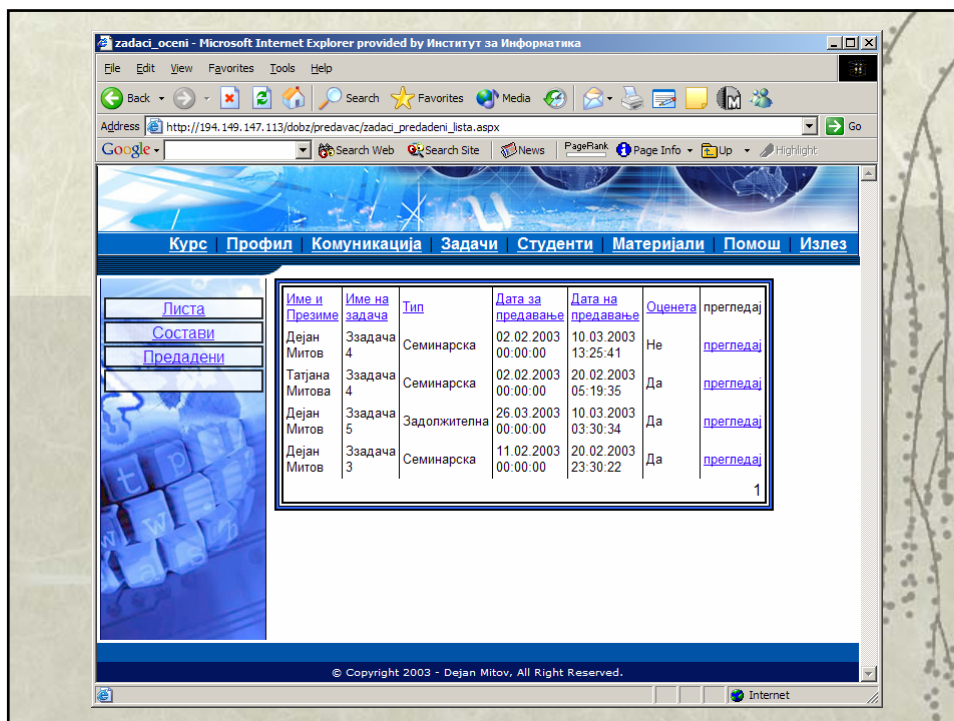
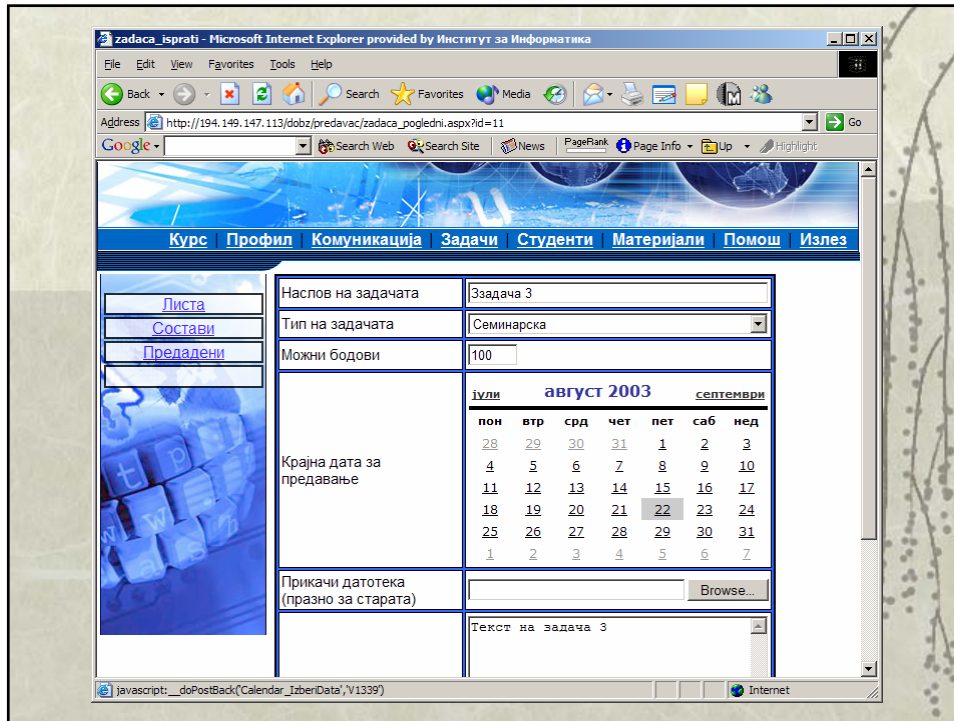




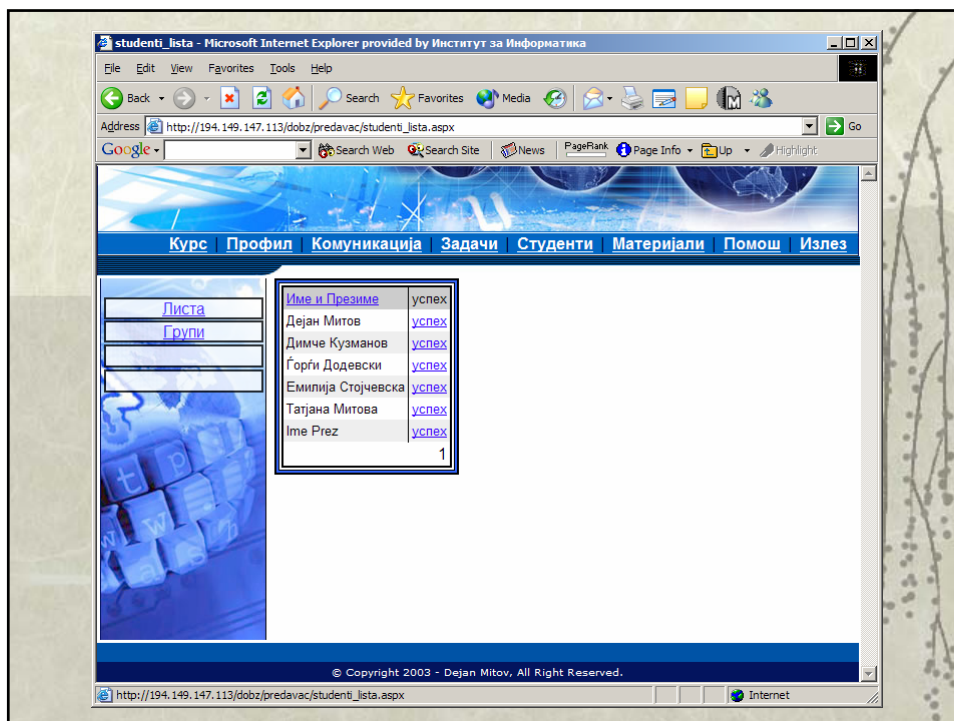
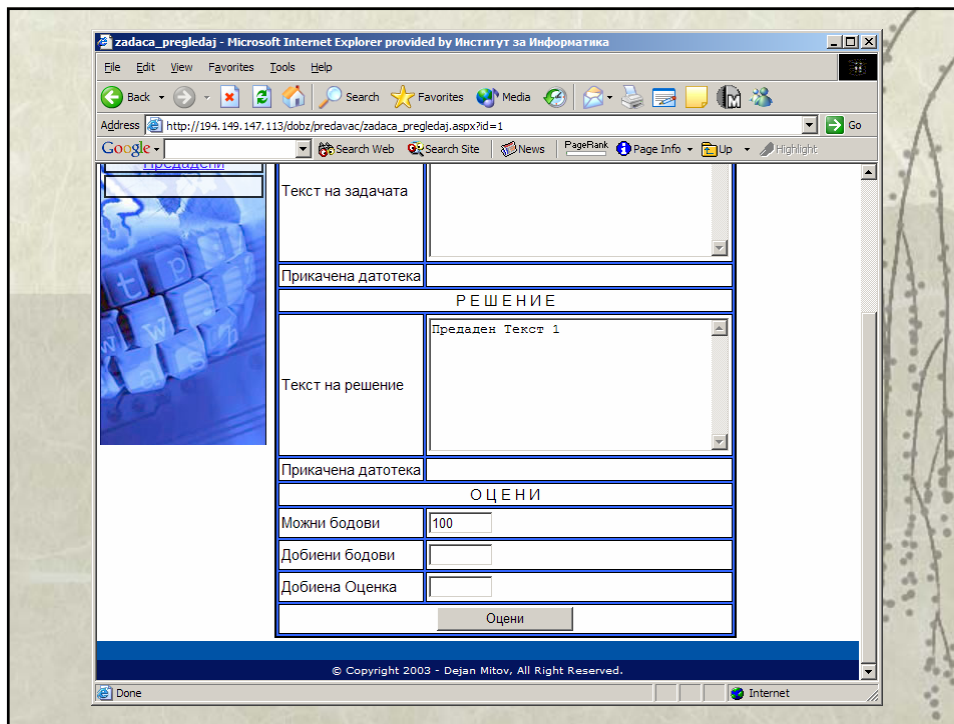












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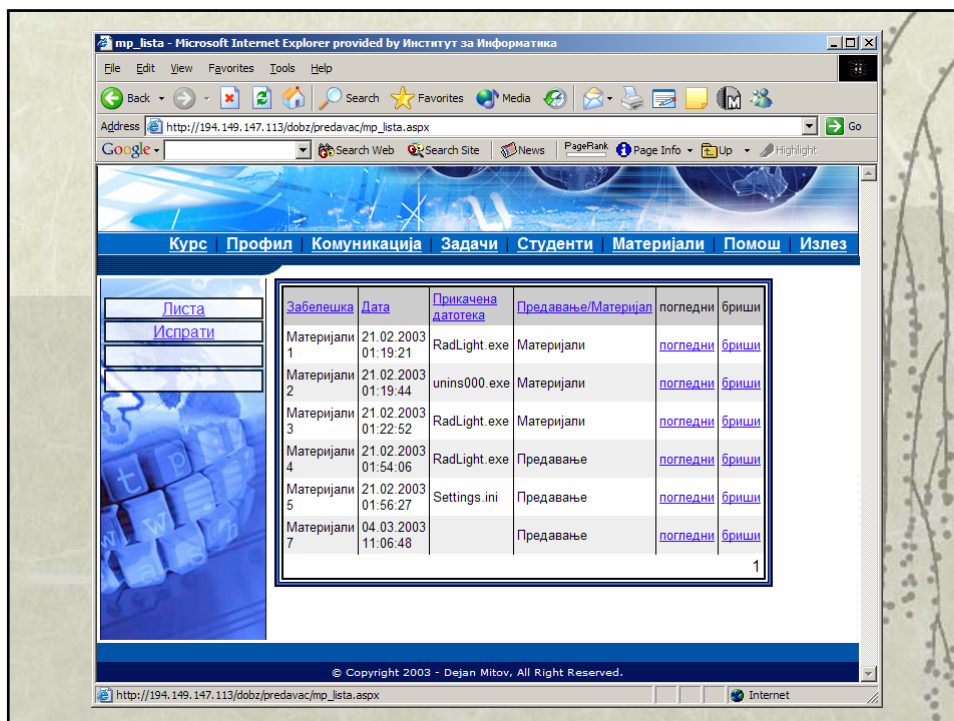
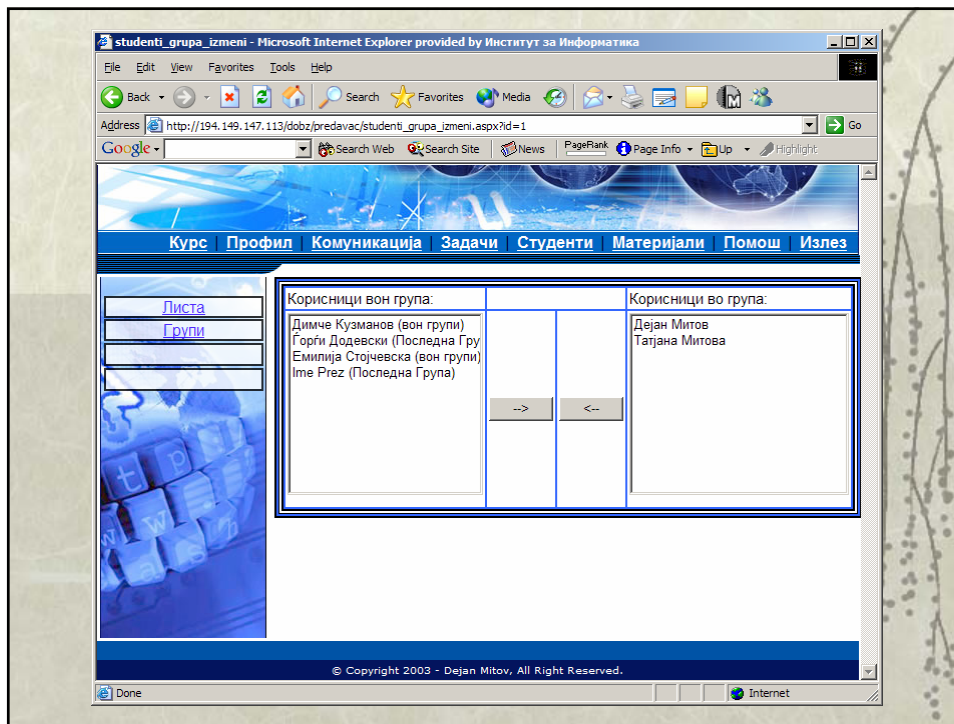
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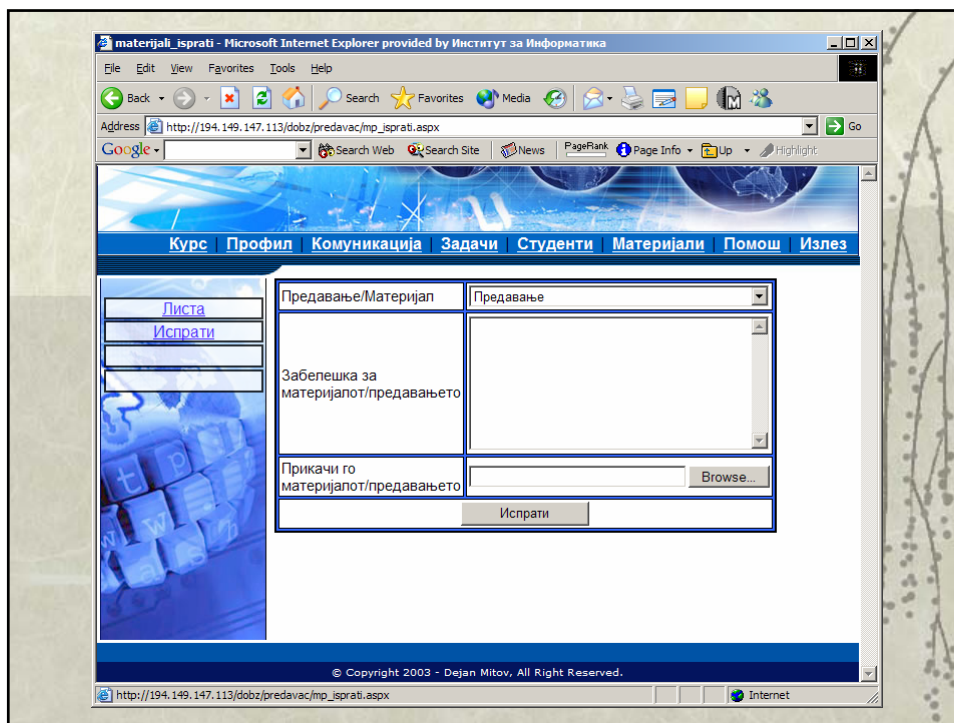
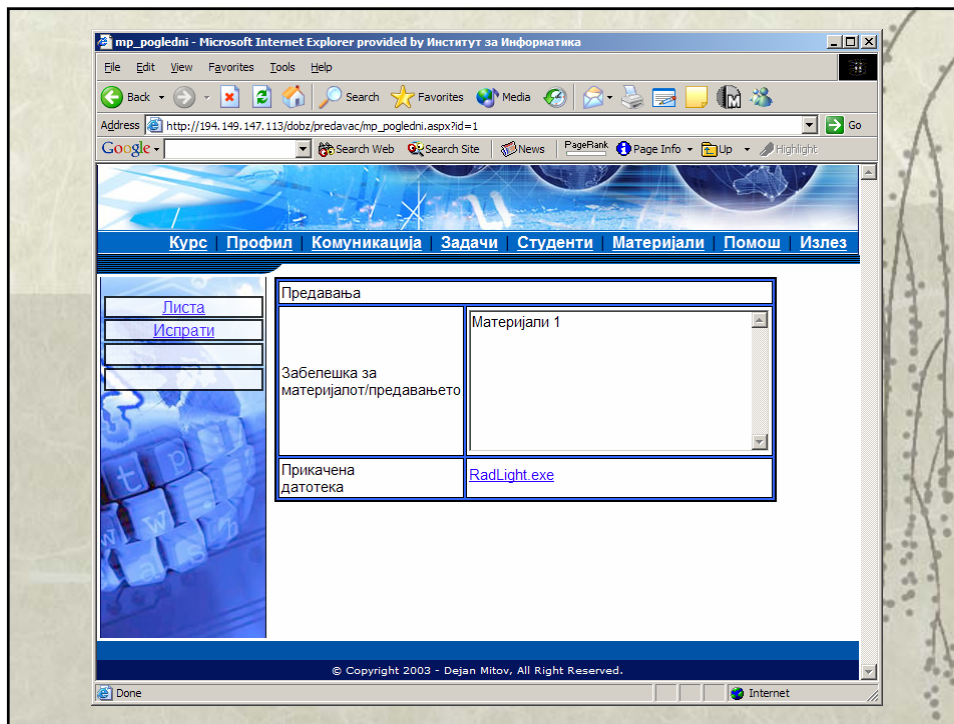
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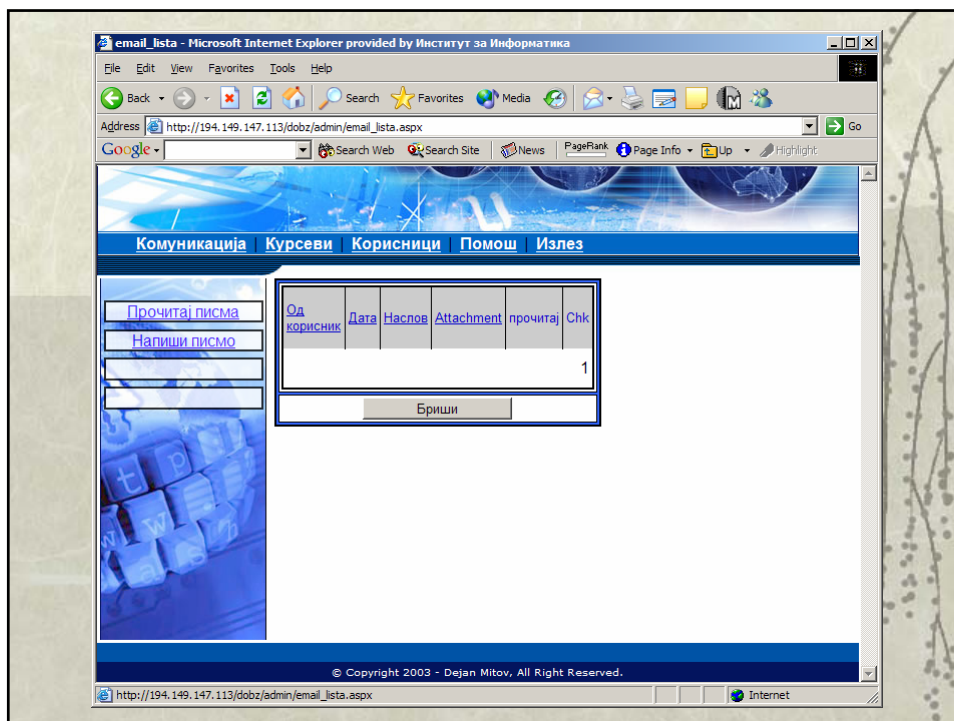
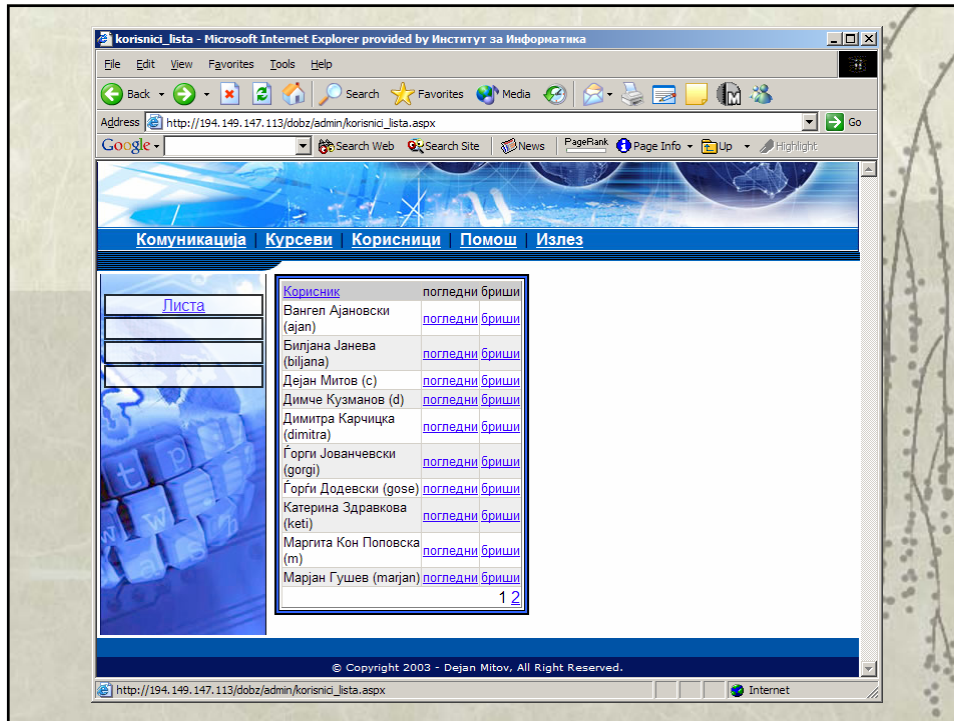
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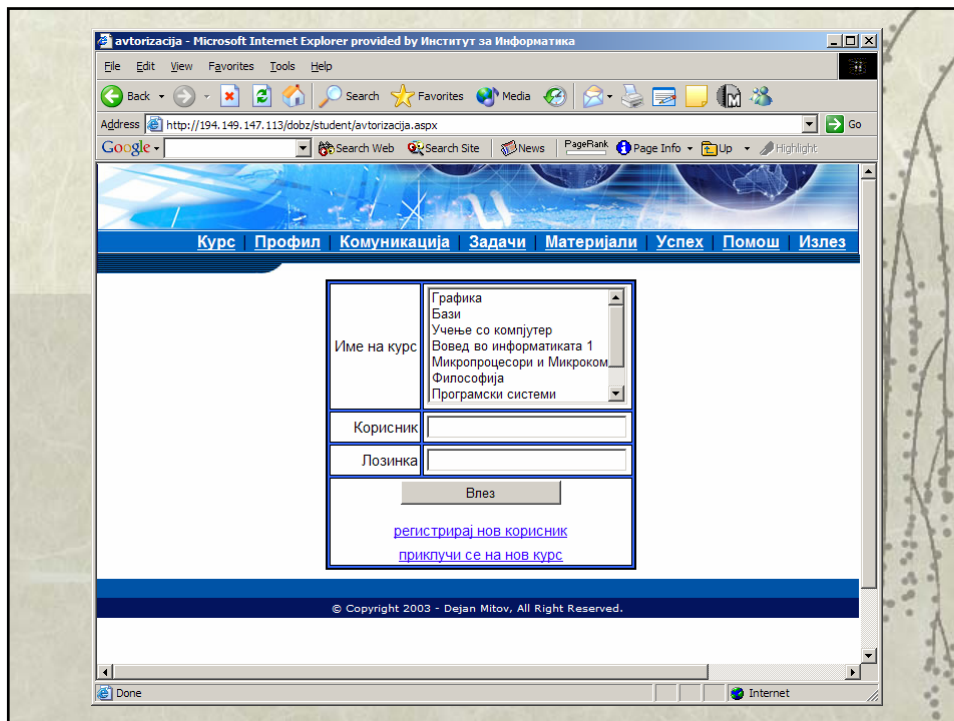
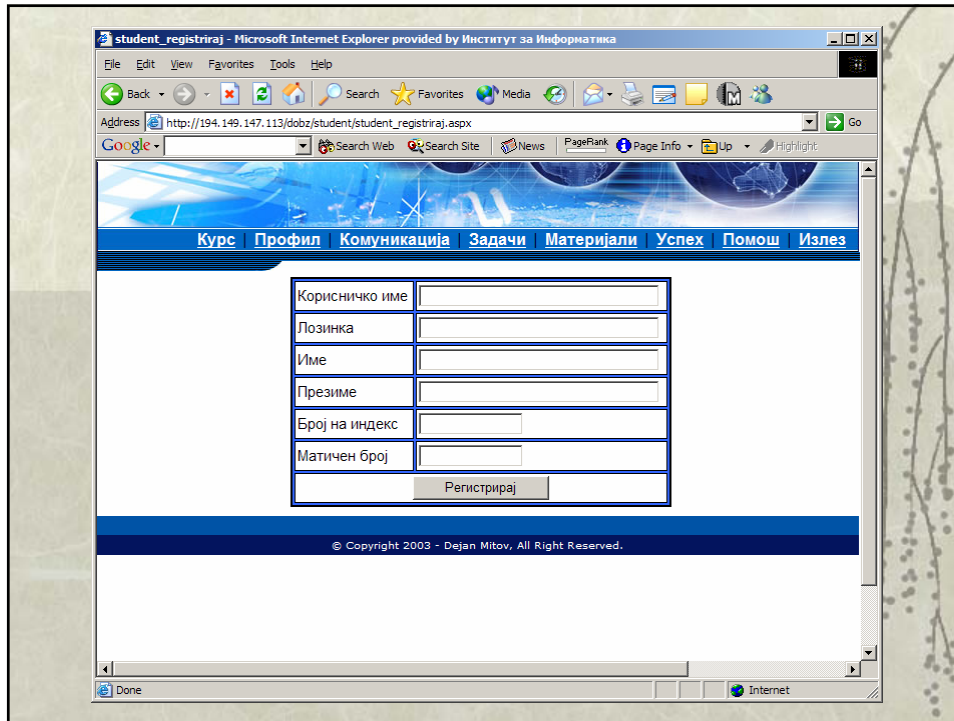
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