

Week 5 Final Presentation

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CST499: Capstone for Computer Software Technology

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Development of ABC University's Online Course Registration System

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Software Requirements Specification (SRS)

- Solidify the stakeholder requirements into distinct functionality requirements
 - Functional requirements
 - Nonfunctional requirements
 - And constraints
- Defines execution and how it should be performed
- Provides an answer to a problem statement
- Helps to manage customer expectations
- Defines deliverables for development

SRS in Action (ABCU Online Course Registration)

- Defines the purpose of the program
- Identifies functionality
- Establishes how this to be achieved
- Details how the program will be utilized

1.1 Purpose

The ABC University online course registration web-based application is a platform that enables students to register for courses using an online interface. It will allow students to browse through the course registry and sign up for courses or be added to a waiting list without having to visit the physical campus.

2.2 Product Functions

- The main purpose of the project is to provide an online resource for course registration for students through ABC University web application.
- Browse course availability.
- Enroll in courses.
- Registered users can view enrollment status and subscribe to a waiting list updates.
- Students enrolled in courses can manage courses to add or drop courses.

2.5 Design and Implementation Constraints

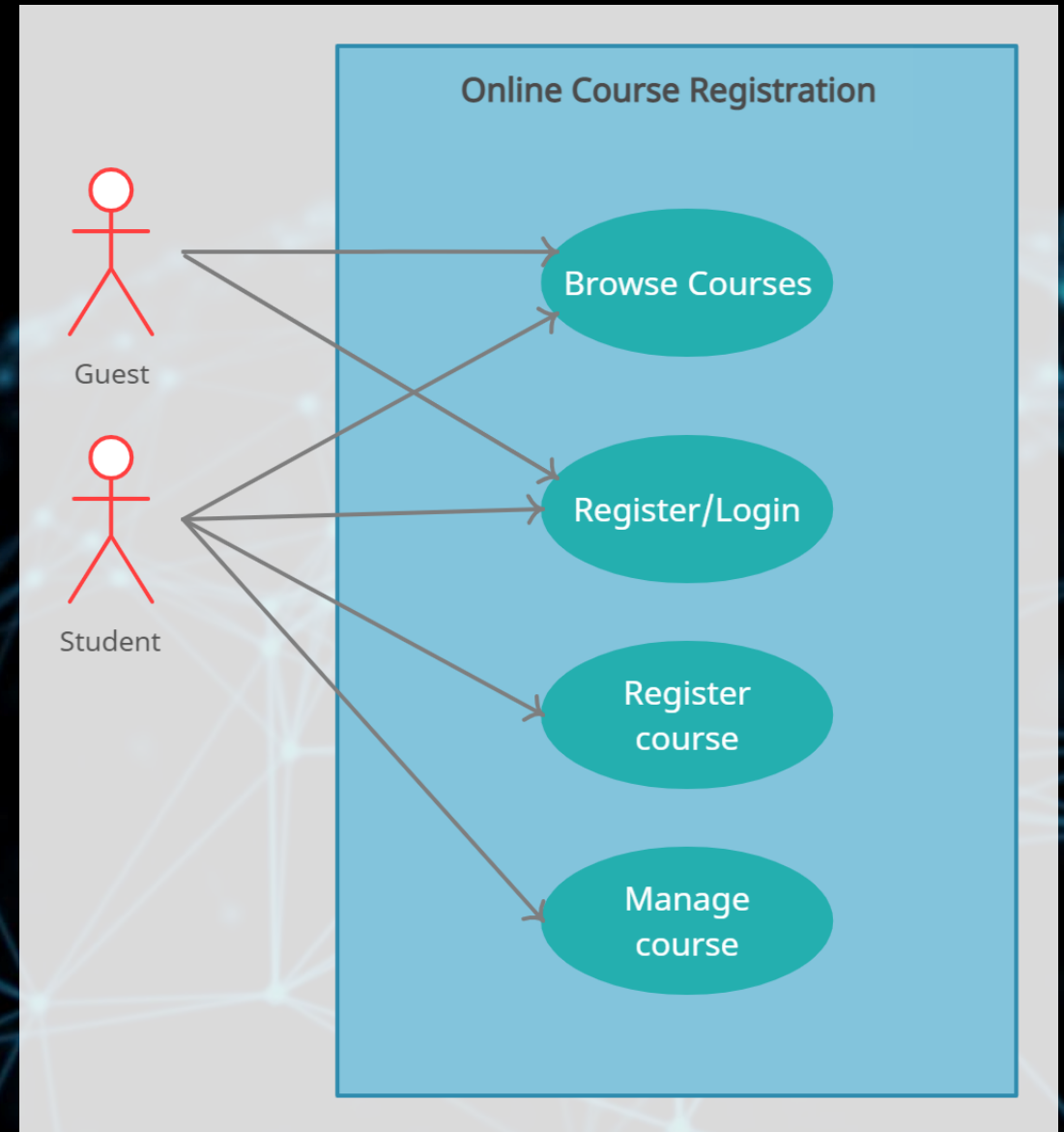
ABC University's web application provides an online catalog available to potential students to view and enroll in courses via the internet. They can add courses to their semester which will display to a profile page. Students can edit their courses through their profile page to drop courses. Compliance to best practices within IEEE recommendation will be adhered to as well as in accordance with Americans with Disabilities Act to accommodate all users.

3.1 User Interfaces

- Landing Page
- Registration Page
- Login Page
- Profile Page
- Enrollment/Course viewing Page

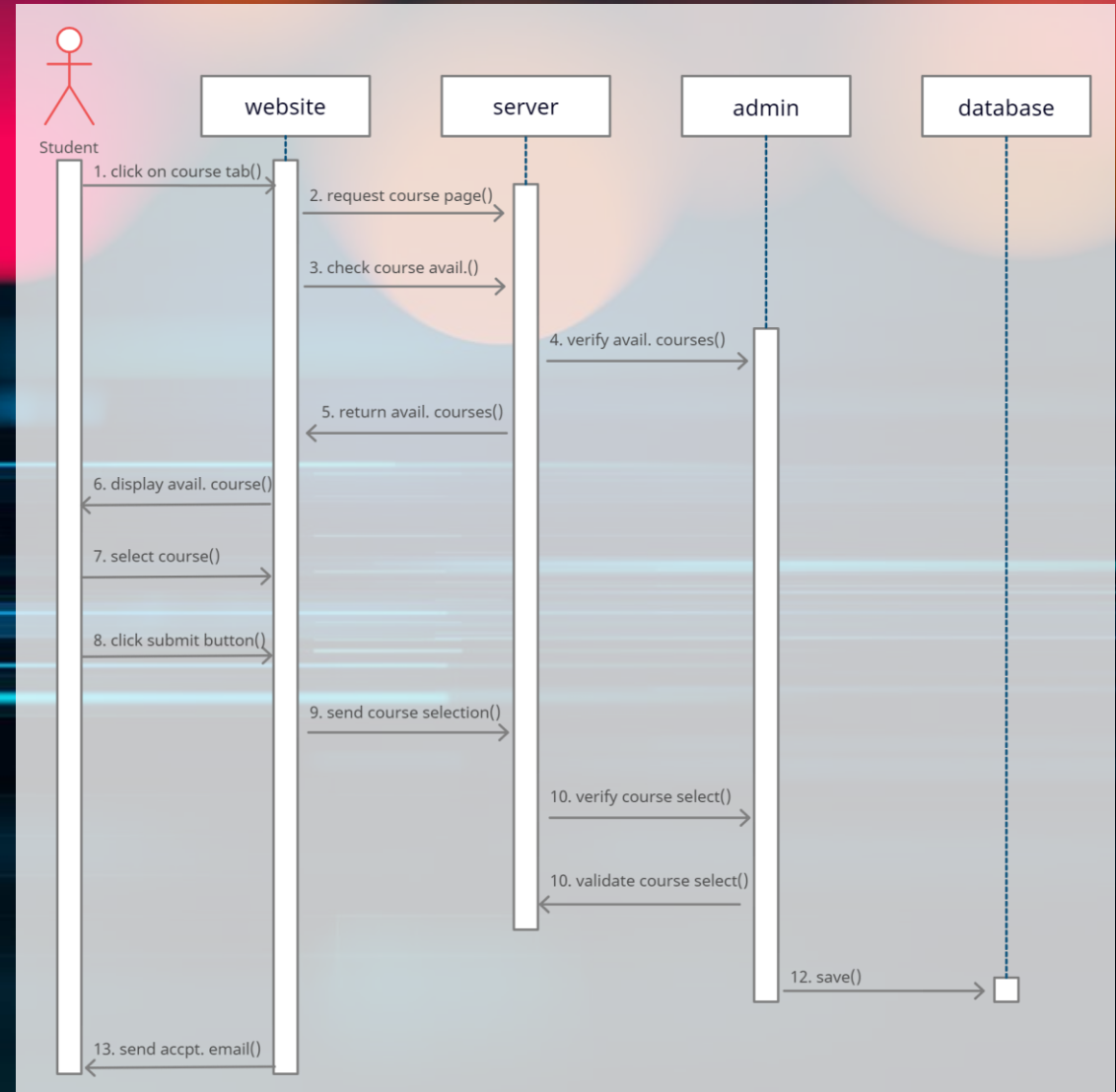
UML Design Model

- Analysis Models
 - Scenario-based
 - Class Models
 - Behavioral Models
 - Flow Models
- Illustrates design functionality
 - Use Cases (Shown on the right)
 - Class Diagrams
 - Sequence Diagrams
 - Data Flow Diagrams



UML Design Model (continued)

- Scenario-Based Models
- Behavioral Models
- User perspective
- Interaction perspective
- Class Models
- Flow Models
- Relational perspective
- Data manipulation perspective



ABC University Registration Page



Student Registration

Student Registration

Student Name:

Student Registration Number:

Email:

Password:

Already registered? [Login](#)

© 2021 Online Course Registration

ABC University Login Page



Please Login

Enter Email:

Enter Password:

Not registered? [Registration](#)

© 2021 Online Course Registration

Web Page Development

- User interfaces are created:
 - Registration page
 - Login page
 - Enrollment page
 - Enrollment history page
- Focused on functionality

Web Page Development (continued)

- Fulfills functionality required
 - Users can register as a student
 - Students can browse course availability
 - Students can enroll in a selected course
 - Students can manage enrollment

ABC University

Course Enrollment Page

Welcome: Robert Barquin

- [Enroll for Course](#)
- [Enroll History](#)
- [My Profile](#)
- [Logout](#)

Student Name

Student Registration Number

Department

Semester

Course

© 2021 Online Course Registration

Welcome: Robert Barquin

- [Enroll for Course](#)
- [Enroll History](#)
- [My Profile](#)
- [Logout](#)

Enroll History

Enroll History

#	Course Name	Department	Semester	Enrollment Date	Action
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Database Construction

- Class Diagrams aid in creation of database classes and related attributes

The screenshot shows a database management interface with a 'Navigator' pane on the left and a main query editor. The 'Navigator' pane shows a tree view of the 'courseregistration' database, with 'Tables' expanded to show 'course', 'department', 'enrollment', 'semester', and 'students'. The 'students' table is selected. The main query editor shows a SQL query: `SELECT * FROM courseregistration.students;`. Below the query, a 'Result Grid' displays the data for the 'students' table.

studentRegistrationNo	email	password	studentName	department	semester	cgpa	creationdate	updateDate
0123	rab123@gmail.com	qwerty	Robert Barquin	HULL	HULL	HULL	2021-09-10 02:09:28	HULL
HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL

The screenshot shows the same database management interface, but with the 'enrollment' table selected in the 'Navigator' pane. The main query editor shows a SQL query: `SELECT * FROM courseregistration.enrollment;`. Below the query, a 'Result Grid' displays the data for the 'enrollment' table.

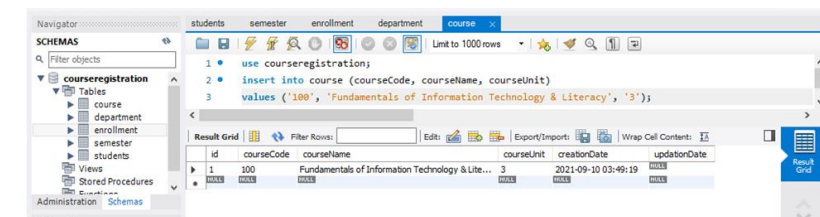
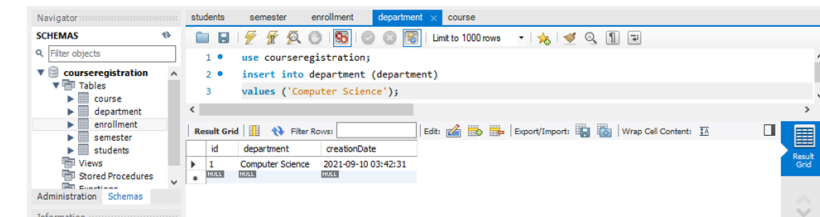
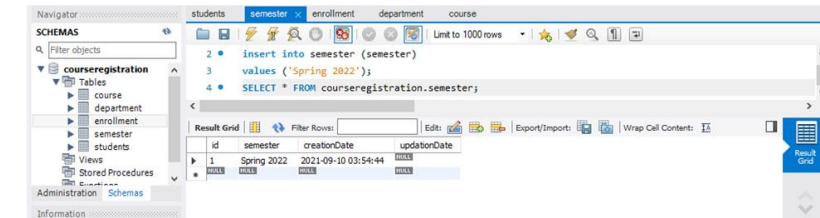
id	studentRegistrationNo	department	semester	course	enrollDate
HULL	HULL	HULL	HULL	HULL	HULL

- Students
- Course
- Department
- Semester
- Enrollment

Database Construction (continued)

Class attributes

- Student: studentRegistrationNo, email, password, studentName, department, semester, cgpa, creationDate, updationDate
- Course: id, courseCode, courseName, courseUnit, creationDate, updationDate
- Department: id, department, creationDate
- Semester: id, semester, creationDate, updationDate
- Enrollment: id, studentRegistrationNo, department, semester, course, enrollDate



Frontend Coding

- Titles: Page Identifiers
 - Student Registration, Login, Enrollment, and Enrollment History
- Header
 - Provides username when logged in
- Footer
 - Provides copyright for website on all pages
- Menu Bar
 - Provides navigational links to course enrollment, enrollment history, and profile pages
 - Provides logout option
- User input fields

```
tion  Go Run Terminal Help
student-regist
logout.php enroll.php check_avail.php menubar.php index.php footer.php
student-registration.php
<body>
<?php include('header.php');?>
if($_SESSION['login']!=''){include('menubar.php');}?>
class="content-wrapper">
<div class="container">
<div class="row">
<div class="col-md-12">
<h1 class="page-head-line">Student Registration </h1>
</div>
<div class="row">
<div class="col-md-3">
</div>
<div class="col-md-6">
<div class="panel panel-default">
<div class="panel-heading">
Student Registration <br><br>
</div>
<div class="panel-body">
<form name="dept" method="post">
<div class="form-group">
<label for="studentname"> Student Name: </label>
<input type="text" class="form-control" id="studentname" name="studentname">
<br><br>
</div>
<div class="form-group">
<label for="studentRegistrationNo"> Student Registration Number: </label>
<input type="text" class="form-control" id="studentRegistrationNo" name="studentRegistrationNo">
<span id="user-availability-status1" style="font-size:12px;">
<br><br>
</div>
<div class="form-group">
<label for="email"> Email: </label>
<input type="email" class="form-control" id="email" name="email" placeholder="Email Address">
<br><br>
</div>
<div class="form-group">
<label for="password"> Password: </label>
<input type="password" class="form-control" id="password" name="password">
<br><br>
</div>
<button type="submit" name="submit" id="submit" class="btn btn-default">
<p> Already registered?<a href="index.php"><b> Login </b></a></p>
</form>
</div>
</div>
</div>
```


Backend Coding

Database connections

- Uploads
 - Registered student information
 - Student enrollment
 - Enrollment management
- Queries
 - Student login
 - Course catalog search
 - Course availability Search
 - Enrollment history

```
File Edit Selection View Go Run Terminal Help
enroll.php - Visual S...
config.php logout.php enroll.php X check_avail.php menubar.php index.php footer.php er
C: > xampp > htdocs > enroll.php
22 <body>
23 <title>Course Enrollment</title>
24 <h1 class="page-head-line"> ABC University </h1>
25 <h2 class="page-head-line"> Course Enrollment Page </h2>
26 <?php include('header.php');?>
27 <?php if($_SESSION['login']!=""){
28     include('menubar.php');
29 }
30 ?>
31 <?php $sql=mysqli_query($bd, "SELECT * FROM students WHERE studentRegistrationNo='".$_SESSION['login']."' ");
32 $cnt=1;
33 while($row=mysqli_fetch_array($sql))
34 ?>
35 <div class="panel-body">
36     <form name="dept" method="post" enctype="multipart/form-data">
37         <div class="form-group">
38             <label for="studentName">Student Name </label>
39             <input type="text" class="form-control" id="studentName" name="studentName" value="<?php echo htmlentities($row['studentName']);?>" />
40             <br><br/>
41         </div>
42
43         <div class="form-group">
44             <label for="studentRegistrationNo">Student Registration Number </label>
45             <input type="text" class="form-control" id="studentRegistrationNo" name="studentRegistrationNo" value="<?php echo htmlentities($row['studentRegistrationNo']);?>" />
46             <br><br/>
47         </div>
48
49         <div class="form-group">
50             <label for="department">Department </label>
51             <select class="form-control" name="department" required="required">
52                 <option value="">Select Department</option>
53                 <?php
54                 $sql=mysqli_query($bd, "select * from department");
55                 while($row=mysqli_fetch_array($sql))
56                 ?>
57                 <option value="<?php echo htmlentities($row['id']);?>"><?php echo htmlentities($row['department']);?></option>
58             </select>
59         </div>
60
61         <div class="form-group">
62             <label for="semester">Semester </label>
63             <select class="form-control" name="sem" required="required">
64                 <option value="">Select Semester</option>
65                 <?php
66                 $sql=mysqli_query($bd, "select * from semester");
67                 while($row=mysqli_fetch_array($sql))
68                 ?>
69                 <option value="<?php echo htmlentities($row['id']);?>"><?php echo htmlentities($row['semester']);?></option>
70             </select>
71         </div>
72     </form>
73 </div>
```

References:

- Pressman, R. S., & Maxim, B. R. (2015). *Software engineering: A practitioner's approach* (8th ed.). Retrieved from <https://www.vitalsource.com>
- Sommerville, I. (2016). *Software engineering (10th ed.)*. Retrieved from <https://www.vitalsource.com>.
- Tsui, F., Karam, O., & Bernal, B. (2018). *Essentials of software engineering* (4th ed.). Jones & Bartlett Learning.
- Wills, M. (2019). *(ISC)2 SSCP Systems security certified practitioner: Official study guide* (2nd ed.). John Wiley & Sons.