**Software Design & Architecture Lab**

**Assignment No.1**



**Session: 2021**

**Submitted by:**

**Wali Muhammad 2021-SE-39**

**Submitted to:**

**Dr. Zeeshan Ramzan**

Department of Computer Science, New Campus

**University of Engineering and Technology Lahore, Pakistan**

**Lab Task Description**

**Make Detailed use cases of all the functions described in the following scenario:**

We will be designing a simple Learning Management System. The system will allow students to sign-in to their accounts. Students can register in more than one subject in one semester while admin will offer the semester and subjects in that semester. Students can view their DMC while Teacher can add results. Students can view their dues summary while exam branch can edit, generate the dues. Administrators can update and change the account information of both teachers and students.

**Actors**

1. Students

2. Admin

3. Teacher

4. Exam Branch

**Use Case**

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| --- | --- |
| Use Case Number | User Case Description |
| **UC-1** | Sign in |
| **UC-2** | Register a Course |
| **UC-3** | Offer Semester and Courses |
| **UC-4** | View DMC |
| **UC-5** | Add Result |
| **UC-6** | Views Dues Summary |
| **UC-7** | Generates Dues |
| **UC-8** | Edit Dues |
| **UC-9** | Update Account Information of Teacher |
| **UC-10** | Update Account Information of Student |

**Use Case -1**

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| --- | --- |
| Name | Sign In |
| **Primary Actor** | Student |
| **Goal** | As a student I can Sign into Learning Management System |
| **Trigger** | Students go to LMS portal. Student enters Email, Password. Student click on sign-in button. |
| **Pre-conditions** | * Student must be connected to internet. * Student must have a supported browser. * Student must have a valid username. * Student must have a password. |
| **Post-conditions** | * Student successfully signed in. |
| **Basic Flow** | * Student opens browser. * Student search “LMS” * Student select the right LMS of institute * Student enters username and password * Student clicks on “Sign-in” button. |
| **Main success scenario** | * Student opens LMS on browser. * Student enters his/her username right. * Student enters his/her password right. * Student clicks sign-in button. |
| **Alternate flow** | No Alternate flow |
| **Qualities** | **Security**   * Student must be authorized to sign in. * Student must have valid username and password to sign-in. |
| **Exceptions** | * Students have no Internet connection. * Student have no supported browser. * Student might have not opened the right Learning Management System of the institute or university. * Students have no username or password. * Student is not a valid user. * Student enters wrong username or password. * Username or password cannot be authenticated by LMS. * Student is restricted/blocks by administrator. |
| **Solutions** | * Student must have a stable internet connection. * Student must have a supported browser installed. * Student must open the right Learning Management System of the institute. * Student must have valid username and password. * Student must enter right username and password. * Student must click on “Sign-in” button. * Student must not be restricted by admin. |

**Use Case -2**

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| Name | Register a Course |
| **Primary Actor** | Student |
| **Goal** | As a student I can Register a course in Learning Management System. |
| **Trigger** | Students selects the course and clicks “Register” button. |
| **Pre-conditions** | * Student must be connected to internet. * Student must have a supported browser. * Student must signed in to LMS. * Course must be offered by admin. * Student searched the valid offered course. |
| **Post-conditions** | * Student successfully registered in course. |
| **Basic Flow** | * Student signed into the Learning Management System * Student goes to Courses Section * Student searches the course. * Student clicks on “Register” button. |
| **Main success scenario** | * Student opens LMS on browser. * Student successfully signed-in. * Student is allowed to register into course. * Student clicks the searched course “Register” button. |
| **Alternate flow** | No Alternate flow |
| **Qualities** | **Security**   * Student must be authorized to sign in. * The course must be offered by admin before register. |
| **Exceptions** | * Students have no Internet connection. * Student have no supported browser. * Student might have not opened the right Learning Management System of the institute or university. * Student have not signed-in successfully * Student have not searched the right course * Student have not paid fees. * Student have not cleared prerequisite course. * Student is not allowed to register into course. |
| **Solutions** | * Students must have Internet connection. * Student must have supported browser. * Student must have open the right Learning Management System of the institute or university. * Student must signed-in successfully * Student must search the right course * Student must pay fee before register in course * Student must cleared prerequisite course. * Admin allow user to register into course. |

**Use Case -3**

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| Name | Offer Semester and Courses |
| **Primary Actor** | Admin |
| **Goal** | As an admin I want to offer a semester and the courses. |
| **Trigger** | Enter the course credentials then click offer semester. Admin click offer subjects to offer subjects/course in semester |
| **Pre-conditions** | * Student must signed-in. * Admin must have privileges to offer course. * Admin enter the course credentials and then click “Offer semester/course” button |
| **Post-conditions** | * Admin successfully offered a Semester/Course. |
| **Basic Flow** | * Admin enters username and password for sign-in. Admin goes to offers course section. Admin enters the course credentials. Admin clicks “Offer Semester/Course” |
| **Main success scenario** | * Admin signed in successfully. * Admin goes to offer course section. * Admin enters the course credentials and then click “offer Semester/Course” button. |
| **Alternate flow** | No Alternate flow |
| **Qualities** | **Security**   * Admin must have privileges to offer Semester/Course. * Semester/Course Id, Name and Credit hours must valid. |
| **Exceptions** | * Admin have no Internet connection. * Admin have not signed in successfully. * Admin have no privilege to offer course. * Admin have violated semester/course id, course credit hours credentials or have not entered all of the credentials. |
| **Solutions** | * Admin must have Internet connection. * Admin must signed in successfully. * Admin must have no privilege to offer semester/course. * Admin must enter all valid credentials of semester/course * The LMS must show the violated credentials in errors. |

**Use Case -4**

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| Name | View DMC |
| **Primary Actor** | Student |
| **Goal** | As a student I should be able to view DMC |
| **Trigger** | Students go to LMS portal. Student successfully signed-in. Student clicks “View DMC” |
| **Pre-conditions** | * Student must be connected to internet. * Student must successfully signed-in. |
| **Post-conditions** | * Student successfully view DMC. |
| **Basic Flow** | * Student signed into the Learning Management System * Student clicks on View DMC. |
| **Main success scenario** | * Student opens LMS on browser. * Student successfully signed-in. * Student clicks on View DMC |
| **Alternate flow** | No Alternate flow |
| **Qualities** | **Security**   * Student must be authorized to sign in. * Student must have valid username and password to sign-in. |
| **Exceptions** | * Students have no Internet connection. * Student have no supported browser. * Student might have not opened the right Learning Management System of the institute or university. * Students have not successfully signed-in * Student does not click on View DMC |
| **Solutions** | * Student must have a stable internet connection. * Student must have a supported browser installed. * Student must open the right Learning Management System of the institute. * Student must click on View DMC |

**Use Case -5**

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| Name | Add Result |
| **Primary Actor** | Teacher |
| **Goal** | As a teacher I can add result |
| **Trigger** | Teacher clicks on “Add result” button to add result |
| **Pre-conditions** | * Student must be connected to internet. * Student must have a supported browser. * Teacher must signed-in successfully. * Teacher must go to “Add Result” * Teacher must have privileges to add result. |
| **Post-conditions** | * Student successfully added result. |
| **Basic Flow** | * Student successfully signed-in, Student goes to “Add Result” Section. |
| **Main success scenario** | * Student opens LMS on browser. * Student enters his/her username. * Student enters his/her password. * Student clicks sign-in button. * Student successfully signed-in. |
| **Alternate flow** | No Alternate flow |
| **Qualities** | **Security**   * Teacher must be authorized to sign in. * Teacher must be able to add result. * Only the course teacher can add its course result. |
| **Exceptions** | * Teacher have no Internet connection. * Teacher have no supported browser. * Teacher might have not opened the right Learning Management System of the institute or university. * Teacher have no valid username or password. * Teacher have not successfully signed-in. * Teacher has no privileges to add result * Teacher try to add result on wrong place |
| **Solutions** | * Teacher must have a stable internet connection. * Teacher must have a supported browser installed. * Teacher must open the right Learning Management System of the institute. * Teacher must have valid username and password. * Teacher must enter right username and password. * Teacher must successfully signed-in. * Teacher must have privileges to add result * Teacher must add result on right place |

**Use Case -6**

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| --- | --- |
| Name | View Dues Summary |
| **Primary Actor** | Student |
| **Goal** | AS a student I can view dues summary |
| **Trigger** | Students go to LMS portal. Student successfully signed-in. Student clicks on “View Dues Summary” |
| **Pre-conditions** | * Student must be connected to internet. * Student must have a supported browser. * Student must be valid user. * Student successfully signed-in * Student must click on “View dues summary” |
| **Post-conditions** | * Student successfully view dues summary. |
| **Basic Flow** | * Student opens LMS on browser and then sign-in. Student successfully signed-in. Student click on “View Dues Summary” |
| **Main success scenario** | * Student opens LMS on browser. * Student enters his/her username and password. * Student successfully signed-in. * Student click on “View Dues Summary” |
| **Alternate flow** | No Alternate flow |
| **Qualities** | **Security**   * Student must be authorized to sign in. * Student must have valid username and password to sign-in. |
| **Exceptions** | * Students have no Internet connection. * Student have no supported browser. * Student might have not opened the right Learning Management System of the institute or university. * Student must not be valid user. * Student have not successfully signed-in * Student have not click on “View dues summary” |
| **Solutions** | * Student must have a stable internet connection. * Student must have a supported browser installed. * Student must open the right Learning Management System of the institute. * Student must be valid user. * Student must successfully signed-in * Student must click on “View dues summary” |

**Use Case -7**

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| Name | Generate Dues |
| **Primary Actor** | Exam Branch |
| **Goal** | Exam Branch wants to Generate Dues |
| **Trigger** | Click on Generate Dues |
| **Pre-conditions** | * Exam Branch must be connected to internet. * Exam Branch but open LMS on browser * Exam Branch must have a valid account to sign-in * Exam Branch must have privileges to generate Dues. |
| **Post-conditions** | * Exam Branch successfully Generate Dues. |
| **Basic Flow** | * Exam Branch Person open LMS and then sign-in. Goes to Generate Dues. Clicks “Generate Dues” |
| **Main success scenario** | * Exam Branch opens LMS on browser. * Exam Branch enters valid username and password * Exam Branch successfully signed-in. * Exam Branch move to Dues Section |
| **Alternate flow** | No Alternate flow |
| **Qualities** | **Security**   * Exam Branch must have valid username and password to sign-in. * Exam Branch must be authorized to sign in. * Exam Branch must have privileges to Generate Dues |
| **Exceptions** | * Exam Branch have no Internet connection. * Exam Branch have no supported browser. * Exam Branch might have not opened the right Learning Management System of the institute or university. * Exam Branch have no username or password. * Exam Branch is not a valid user. * Exam Branch enters wrong username or password. * Username or password cannot be authenticated by LMS. * Exam Branch have not moved to Generate Dues.   Exam Branch have not admin privileges to generate dues. |
| **Solutions** | * Exam Branch must have Internet connection. * Exam Branch must have supported browser. * Exam Branch must have open the right Learning Management System of the institute or university. * Exam Branch have a valid username and password. * Username or password cannot be authenticated by LMS. * Exam Branch must move to Generate Dues.   Exam Branch must have admin privileges to generate dues. |

**Use Case -8**

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| Name | Edit Dues |
| **Primary Actor** | Student |
| **Goal** | Exam Branch can Edit Dues |
| **Trigger** | Click on Edit Dues on Dues Section |
| **Pre-conditions** | * Exam Branch must be connected to internet. * Exam Branch but open LMS on browser * Exam Branch must have a valid account to sign-in * Exam Branch must have privileges to Edit Dues. * Exam Branch already have added Dues which the Exam Branch wants to edit |
| **Post-conditions** | * Exam Branch successfully Edits Dues. |
| **Basic Flow** | * Exam Branch Person open LMS and then sign-in. Goes to Generate Dues. Clicks “Edits Dues” |
| **Main success scenario** | * Exam Branch opens LMS on browser. * Exam Branch enters valid username and password * Exam Branch successfully signed-in. * Exam Branch move to Dues Section |
| **Alternate flow** | No Alternate flow |
| **Qualities** | **Security**   * Exam Branch must have valid username and password to sign-in. * Exam Branch must be authorized to sign in. * Exam Branch must have privileges to Generate Dues |
| **Exceptions** | * Exam Branch have no Internet connection. * Exam Branch have no supported browser. * Exam Branch might have not opened the right Learning Management System of the institute or university. * Exam Branch have no username or password. * Exam Branch is not a valid user. * Exam Branch enters wrong username or password. * Username or password cannot be authenticated by LMS. * Exam Branch have not moved to Dues Section. * Exam Branch have not admin privileges to edit dues. * The dues does not exists or the Exam Branch have not added the Dues yet |
| **Solutions** | * Exam Branch must have Internet connection. * Exam Branch must have supported browser. * Exam Branch must open the right Learning Management System of the institute or university. * Exam Branch must have a valid username or password. * Exam Branch must enters right username or password. * Exam Branch must move to Dues Section. * Exam Branch must have admin privileges to edit dues. * The dues must exist or the Exam Branch have added the Dues already |

**Use Case -9**

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| --- | --- |
| Name | Update Account Information of Teacher |
| **Primary Actor** | Administrator |
| **Goal** | As an admin, admin can update account information of teacher |
| **Trigger** | Admin go to LMS portal. Admin successfully signed-in. Add goes to Teacher Account Information. |
| **Pre-conditions** | * Admin must be connected to internet. * Admin must have a supported browser. * Admin must successfully signed-in |
| **Post-conditions** | * Admin successfully update teacher account information. |
| **Basic Flow** | * Admin enters his/her username and password and click sign-in. Admin successfully signed-in. Admin moves to Teacher Account Information. Admin click “Update Account information” button. Admin updates account information and press save button. |
| **Main success scenario** | * Admin opens LMS on browser. * Admin successfully signed-in. * Admin moves to Teacher account information |
| **Alternate flow** | No Alternate flow |
| **Qualities** | **Security**   * Admin must be authorized to sign in. * Admin can update account information |
| **Exceptions** | * Admin have no Internet connection. * Admin have no supported browser. * Admin enters wrong username or password. * Username or password cannot be authenticated by LMS. * Admin have not successfully signed-in * Admin did not goes to update account section. * Admin have no privileges to update teacher account information. * Admin have not click “update account information” or admin have not click “save” button after updating account information |
| **Solutions** | * Admin have Internet connection. * Admin have supported browser. * Admin must enters right username or password. * Username or password cannot be authenticated by LMS. * Admin must successfully signed-in * Admin must go to update account section. * Admin must have privileges to update teacher account information. * Admin must click “update account information” or admin have click “save” button after updating account information |

**Use Case -10**

|  |  |
| --- | --- |
| Name | Update Account Information of Student |
| **Primary Actor** | Administrator |
| **Goal** | As an admin, admin can update account information of student |
| **Trigger** | Admin go to LMS portal. Admin successfully signed-in. Add goes to Student Account Information. |
| **Pre-conditions** | * Admin must be connected to internet. * Admin must have a supported browser. * Admin must successfully signed-in |
| **Post-conditions** | * Admin successfully update student account information. |
| **Basic Flow** | * Admin enters his/her username and password and click sign-in. Admin successfully signed-in. Admin moves to student Account Information. Admin click “Update Account information” button. Admin updates account information and press save button. |
| **Main success scenario** | * Admin opens LMS on browser. * Admin successfully signed-in. * Admin moves to Student account information |
| **Alternate flow** | No Alternate flow |
| **Qualities** | **Security**   * Admin must be authorized to sign in. * Admin can update account information |
| **Exceptions** | * Admin have no Internet connection. * Admin have no supported browser. * Admin enters wrong username or password. * Username or password cannot be authenticated by LMS. * Admin have not successfully signed-in * Admin did not goes to update account section of student. * Admin have no privileges to update teacher account information. * Admin have not click “update account information” or admin have not click “save” button after updating account information |
| **Solutions** | * Admin have Internet connection. * Admin have supported browser. * Admin must enters right username or password. * Username or password cannot be authenticated by LMS. * Admin must successfully signed-in * Admin must go to update account section of student. * Admin must have privileges to update teacher account information. * Admin must click “update account information” or admin have click “save” button after updating account information |

**THE END**