**Student Details**

| Repository Name | DBS25P144 |
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| Registration Number | 2024-CS-144 |

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| ***Project*** |  |
| Project Title | Project A: ITEC Event Management System |
| Executive Summary | The Information Technology Exhibition and Competition (ITEC) is an annual event organized by the Department of Computer Science, UET Lahore. It includes competitions, exhibitions, seminars, and non-tech events, managed by faculty and students through different committees. Currently, event management is done manually using spreadsheets, emails, and physical records, which leads to data errors, scheduling conflicts, financial tracking issues, and difficulty in managing committees. To solve these problems, a Windows Form Application using C# and MySQL are made to solve and managed these event management process. The main features are Manage ITEC Editions – Create and handle different editions like ITEC 2024,2023etc that are linking events, participants, and finances. Event Organization – Add, update, and delete or remove competitions, exhibitions, and seminars while assigning committees. Participant Registration & Fee Tracking – Register students, professionals, guest speakers, and judges, track event participation, and manage payments. Committee & Role Assignment – Assign faculty and students to different committees with different roles and responsibilities. Task Assignment & Tracking – Assign the duties for committee members. Financial Management – Record sponsorships, ticket sales, and event expenses while generating financial reports. Venue Scheduling – Allocate venues in event schedules. Event Results & Ranking – Store competition results. Automated Reports – Generate detailed reports on participants, committees, finances, and event schedules. This system will reduce manual effort, improve accuracy, and make event management easier and more efficient, ensuring a well-organized and successful ITEC event each year. |

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| **ITEC** |  |
| |  |  |  |  | | --- | --- | --- | --- | | **UI Component Name** | **Type of UI component** | **Class Attribute name,**  **Classname, attribute name** | **Linked to which database column/table** | | DASHBOARD | Button | button1, ITEC linked with itself | None | | EVENTS | Button | button2, ITEC linked with Events | itec\_events | | FINANCES | Button | button3, ITEC linked with Finances | finances | | COMMITTEES | Button | button4, ITEC linked with Committee | committees | | PARTICIPANT REGISTRATION | Button | button5, ITEC linked with Participants | participants, event\_participants | | DUTIES | Button | button6, ITEC linked with Duty | duties | | VENUES | Button | button7, ITEC linked with Venue | venues | | RESULTS | Button | button8, ITEC linked with Result | event\_results | | REPORTS | Button | button9, ITEC linked with Report | All tables | | USER LOGIN | Button | button10, ITEC linked with User | users | | EDITIONS | Button | Button11, ITEC linked with ITEC editions | itec\_editions | | |

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| **ITEC EDITIONS** |  |
| |  |  |  |  | | --- | --- | --- | --- | | **UI Component Name** | **Type of UI component** | **Class Attribute name,**  **Classname, attribute name** | **Linked to which database column/table** | | |  | | --- | | SELECT EDITION |  |  | | --- | |  | | ComboBox | combobox1, ITEC Editions | itec\_id, year | | EDITION YEAR | TextBox | textbox1, ITEC Editions | year | | THEME | TextBox | textbox2, ITEC Editions | theme | | DESCRIPTION | TextBox | textbox3, ITEC Editions | description | | |  | | --- | | ADD | | |  | | --- | | Button | | |  | | --- | | button1, ITEC Editions | | INSERT into itec\_editions | | UPDATE | Button | button2, ITEC Editions | DELETE from itec\_editions | | BACK | Button | button4, ITEC Editions | (Navigation only) | | Grid view | DataGridView | Datagridview1, ITEC Editions | itec\_editions (all columns) |   INSERT INTO itec\_editions (year, theme, description) VALUES (@year, @theme, @desc)  UPDATE itec\_editions SET year = @year, theme = @theme, description = @desc WHERE itec\_id = @id  DELETE FROM itec\_editions WHERE itec\_id = @id  SELECT itec\_id, year FROM itec\_editions  SELECT \* FROM itec\_editions ORDER BY year DESC | |

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| **EVENTS** |  |
| |  |  |  |  | | --- | --- | --- | --- | | **UI Component Name** | **Type of UI component** | **Class Attribute name,**  **Classname, attribute name** | **Linked to which database column/table** | | EVENT NAME | TextBox | textbox1, Events | event\_name | | EVENT CATEGORY | ComboBox | combobox1, Events | itec\_events.event\_category\_id → FK to event\_categories.event\_category\_id | | DESCRIPTION | TextBox | textbox2, Events | description | | EVENT DATE AND TIME | DateTimePicker | datetimepicker1, Events | event\_date | | VENUE | ComboBox | combobox2, Events | itec\_events.venue\_id → FK to venues.venue\_id | | ORGANIZING COMMITTEE | ComboBox | combobox3, Events | itec\_events.committee\_id → FK to committees.committee\_id | | ADD | Button | button1, Events | INSERT into itec\_events | | UPDATE | Button | button2, Events | UPDATE on itec\_events | | DELETE | Button | button3, Events | DELETE from itec\_events | | BACK | Button | button4, Events | Navigation only | | Grid View | DataGridView | dataGridView1, Events | Shows itec\_events joined with categories, venues, committee |   SELECT \* FROM itec\_events  SELECT event\_category\_id, category\_name FROM event\_categories  SELECT venue\_id, venue\_name FROM venues  SELECT committee\_id, committee\_name FROM committees  SELECT  e.event\_id,  e.event\_name,  ec.category\_name AS category,  e.description,  e.event\_date,  v.venue\_name AS venue,  c.committee\_name AS committee,  e.event\_category\_id, e.venue\_id, e.committee\_id  FROM itec\_events e  JOIN event\_categories ec ON e.event\_category\_id = ec.event\_category\_id  JOIN venues v ON e.venue\_id = v.venue\_id  JOIN committees c ON e.committee\_id = c.committee\_id  INSERT INTO itec\_events (event\_name, event\_category\_id, description, event\_date, venue\_id, committee\_id) VALUES (@name, @category, @desc, @date, @venue, @committee)  UPDATE itec\_events SET  event\_name = @name,  event\_category\_id = @category,  description = @desc,  event\_date = @date,  venue\_id = @venue,  committee\_id = @committee  WHERE event\_id = @id  DELETE FROM itec\_events WHERE event\_id = @id | |

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| **Participants** |  |
| |  |  |  |  | | --- | --- | --- | --- | | **UI Component Name** | **Type of UI component** | **Class Attribute name,**  **Classname, attribute name** | **Linked to which database column/table** | | PARTICIPANT NAME | TextBox | Participants, textBox1 | name | | EMAIL | TextBox | Participants, textBox2 | email | | CONTACT NUMBER | TextBox | Participants, textBox3 | contact | | INSTITUTE NAME | TextBox | Participants, textBox4 | institute | | ROLE | ComboBox | Participants, checkedListBox1 | event\_participants.event\_id | | EVENTS TO PARTICIPATE IN | CheckedListBox | Participants, checkedListBox1 | event\_participants.event\_id | | PAYMENT STATUS | ComboBox | Participants, comboBox2 | event\_participants.payment\_status\_id → FK to lookup | | ADD | Button | Participants, button1 | Inserts into participants and event\_participants | | UPDATE | Button | Participants, button2 | Updates participants table based on name | | DELETE | Button | Participants, button3 | Deletes from participants table based on name | | BACK | Button | Participants, button4 | Navigation (back to Form1) | | Grid View | DataGridView | Participants, dataGridView1 | Displays participants table |   INSERT INTO participants (itec\_id, name, email, contact, institute, role\_id) " +  "VALUES (@itec\_id, @name, @email, @contact, @institute, @role\_id)"  INSERT INTO event\_participants (event\_id, participant\_id, payment\_status\_id, fee\_amount) " +  "VALUES (@event\_id, @participant\_id, @payment\_status\_id, @fee\_amount)"  "UPDATE participants SET email=@email, contact=@contact, institute=@institute, role\_id=@role\_id " +  "WHERE name=@name"  DELETE FROM participants WHERE name=@name  SELECT \* FROM participants  SELECT value FROM lookup WHERE category = 'role'  SELECT value FROM lookup WHERE category = 'payment\_status'  SELECT event\_name FROM itec\_events  SELECT lookup\_id FROM lookup WHERE category = 'role' AND value = @value  SELECT lookup\_id FROM lookup WHERE category = 'payment\_status' AND value = @value  SELECT event\_id FROM itec\_events WHERE event\_name = @value | |

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| **Committee** |  |
| |  |  |  |  | | --- | --- | --- | --- | | **UI Component Name** | **Type of UI component** | **Class Attribute name,**  **Classname, attribute name** | **Linked to which database column/table** | | COMMITTEE NAME | TextBox | Committee, textBox1 | committee\_name | | MEMBERS (FACULTY/STUDENTS) | ComboBox | Committee, comboBox1 | Used for selecting existing committee to which members will be assigned (binds to committee\_id) | | ROLES | ComboBox | Committee, comboBox2 | committee\_members.role\_id → FK to lookup (where category = 'Role') | | COMMITTEE LIST | DataGridView | Committee, dataGridView1 | Displays committees table | | COMMITTEE MEMBERS LIST | DataGridView | Committee, dataGridView2 | Displays committee\_members with name and joined role from lookup | | ADD | Button | Committee, button1 | Adds new record to committees table | | UPDATE | Button | Committee, button2 | Updates committees.committee\_name based on selected row from dataGridView1 | | DELETE | Button | Committee, button3 | Deletes record from committees (code mistakenly refers to ID instead of committee\_id) | | ASSIGNED TO | Button | Committee, button4 | Adds member (name, role\_id) to committee\_members for selected committee | | BACK | Button | Committee, button5 | Returns to Form1 |   SELECT committee\_id, committee\_name FROM Committees  SELECT cm.member\_id, cm.name, l.value AS role  FROM CommitteeMembers cm  JOIN lookup l ON cm.role\_id = l.lookup\_id  WHERE cm.committee\_id = " + committeeId  SELECT lookup\_id, value FROM lookup WHERE category = 'Role'  INSERT INTO Committees (committee\_name) VALUES ('{name}')  UPDATE Committees SET committee\_name = '{name}' WHERE committee\_id = {id}  INSERT INTO CommitteeMembers (committee\_id, name, role\_id) VALUES (@committee\_id, @name, @role\_id) | |

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| **Duty** |  |
| |  |  |  |  | | --- | --- | --- | --- | | **UI Component Name** | **Type of UI component** | **Class Attribute name,**  **Classname, attribute name** | **Linked to which database column/table** | | COMMITTEE | ComboBox | Duty, comboBox1 | duties.committee\_id → FK to committees.committee\_id | | ASSIGNED TO | ComboBox | Duty, comboBox2 | duties.assigned\_to | | TASK DESCRIPTION | TextBox | Duty, textBox1 | duties.task\_description | | DEADLINE | DateTimePicker | Duty, dateTimePicker1 | duties.deadline | | STATUS | ComboBox | Duty, comboBox3 | duties.status\_id → FK to lookup.lookup\_id where category = 'task\_status' | | TASK LIST GRID | DataGridView | Duty, dataGridView1 | Displays all rows from duties table | | SAVE TASK | Button | Duty, button1 | Executes INSERT INTO duties | | MODIFY TASK | Button | Duty, button2 | Executes UPDATE duties | | REMOVE TASK | Button | Duty, button3 | Executes DELETE FROM duties | | BACK | Button | Duty, button4 | Navigates to Form1 |   SELECT \* FROM duties  SELECT committee\_id, committee\_name FROM committees  SELECT lookup\_id, value FROM lookup WHERE category = 'task\_status'  INSERT INTO duties (committee\_id, assigned\_to, task\_description, deadline, status\_id) " +  "VALUES (@committee\_id, @assignedTo, @taskDescription, @deadline, @status\_id)"  UPDATE duties SET committee\_id = @committee\_id, assigned\_to = @assignedTo, " +  "task\_description = @taskDescription, deadline = @deadline, status\_id = @status\_id " +  "WHERE duty\_id = @dutyId"  DELETE FROM duties WHERE duty\_id = @taskId | |

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| **Finances** |  |
| |  |  |  |  | | --- | --- | --- | --- | | **UI Component Name** | **Type of UI component** | **Class Attribute name,**  **Classname, attribute name** | **Linked to which database column/table** | | TRANSACTION TYPE | ComboBox | comboBox1, Finances | type\_id, look\_up table and finances table | | AMOUNT | TextBox | textBox1, Finances | amount, finances table | | FROM ENTITY | ComboBox | comboBox2, Finances | from\_entity\_id ,sponsors table | | TO ENTITY | ComboBox | comboBox3, Finances | |  | | --- | | to\_entity\_id, committees | | | DESCRIPTION | TextBox | textBox2, Finances | description, finances table | | DATE RECORDED | DateTimePicker | |  | | --- | | dateTimePicker1, Finances |  |  | | --- | |  | | date\_recorded, finances table | | SAVE FINANCIAL RECORD | Button | button1, Finances | INSERT operation, finances | | MODIFY EXISTING RECORDS | Button | button2, Finances | UPDATE operation, finances | | DELETE TRANSACTION | Button | button3, Finances | DELETE operation, finances | | BACK | Button | button4, Finances | navigation | | Data Grid View | DataGridView | dataGridView1, Finances | finances (joined with lookup, sponsors, committees, vendors) |   SELECT  f.transaction\_id,  l.value AS transaction\_type,  f.amount,  s1.sponsor\_name AS from\_sponsor,  v1.vendor\_name AS from\_vendor,  c1.committee\_name AS from\_committee,  s2.sponsor\_name AS to\_sponsor,  v2.vendor\_name AS to\_vendor,  c2.committee\_name AS to\_committee,  f.description,  f.date\_recorded  FROM finances f  LEFT JOIN lookup l ON f.type\_id = l.type\_id  LEFT JOIN sponsors s1 ON f.from\_entity\_type = 'Sponsor' AND f.from\_entity\_id = s1.sponsor\_id  LEFT JOIN vendors v1 ON f.from\_entity\_type = 'Vendor' AND f.from\_entity\_id = v1.vendor\_id  LEFT JOIN committees c1 ON f.from\_entity\_type = 'Committee' AND f.from\_entity\_id = c1.committee\_id  LEFT JOIN sponsors s2 ON f.to\_entity\_type = 'Sponsor' AND f.to\_entity\_id = s2.sponsor\_id  LEFT JOIN vendors v2 ON f.to\_entity\_type = 'Vendor' AND f.to\_entity\_id = v2.vendor\_id  LEFT JOIN committees c2 ON f.to\_entity\_type = 'Committee' AND f.to\_entity\_id = c2.committee\_id;  SELECT lookup\_id AS type\_id, value FROM lookup WHERE category = 'TransactionType'  SELECT sponsor\_id, sponsor\_name FROM sponsors  SELECT committee\_id, committee\_name FROM committees  INSERT INTO finances  (itec\_id, event\_id, type\_id, amount, from\_entity\_type, from\_entity\_id, to\_entity\_type, to\_entity\_id, description, date\_recorded)  VALUES (1, 1, @type\_id, @amount, @from\_entity\_type, @from\_entity\_id, @to\_entity\_type, @to\_entity\_id, @description, @date\_recorded);  UPDATE finances SET type\_id = @type\_id, amount = @amount, from\_entity\_type = @from\_entity\_type, from\_entity\_id = @from\_entity\_id, " +  "to\_entity\_type = @to\_entity\_type, to\_entity\_id = @to\_entity\_id, description = @description, date\_recorded = @date\_recorded " +  "WHERE transaction\_id = @transaction\_id;  DELETE FROM finances WHERE transaction\_id = @transaction\_id | |

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| **Venue** |  |
| |  |  |  |  | | --- | --- | --- | --- | | **UI Component Name** | **Type of UI component** | **Class Attribute name,**  **Classname, attribute name** | **Linked to which database column/table** | | Event | ComboBox | comboBox1, Venue | event\_id, event\_name from itec\_events | | Venue | ComboBox | comboBox2, Venue | venue\_id, venue\_name from venues | | Assigned Date | DateTimePicker | dateTimePicker1, Venue | assigned\_date from venue\_allocations | | Assigned Time | DateTimePicker | dateTimePicker2, Venue | assigned\_time from venue\_allocations | | Validate Scheduling Conflicts | Button | button1, Venue | Validates using query on venue\_allocations | | Save Venue Assignment | Button | button2, Venue | Inserts data into venue\_allocations | | Modify Existing Allocation | Button | button3, Venue | Updates record in venue\_allocations | | Delete Venue Assignment | Button | button4, Venue | Deletes record from venue\_allocations | | Back | Button | button5, Venue | Back to Form1 | | DataGrid | DataGridView | dataGridView1, Venue | Display data |   SELECT event\_id, event\_name FROM itec\_events;  SELECT venue\_id, venue\_name FROM venues;  SELECT va.venue\_allocation\_id, ev.event\_name, v.venue\_name, va.assigned\_date, va.assigned\_time  FROM venue\_allocations va  JOIN itec\_events ev ON va.event\_id = ev.event\_id  JOIN venues v ON va.venue\_id = v.venue\_id;  SELECT COUNT(\*) FROM venue\_allocations WHERE venue\_id={venueId} AND assigned\_date='{date}' AND assigned\_time='{time}';  INSERT INTO venue\_allocations (event\_id, venue\_id, assigned\_date, assigned\_time) VALUES ({eventId}, {venueId}, '{date}', '{time}');  UPDATE venue\_allocations SET event\_id={eventId}, venue\_id={venueId}, assigned\_date='{date}', assigned\_time='{time}' WHERE venue\_allocation\_id={id};  DELETE FROM venue\_allocations WHERE venue\_allocation\_id={id}; | |

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| **Result** |  |
| |  |  |  |  | | --- | --- | --- | --- | | **UI Component Name** | **Type of UI component** | **Class Attribute name,**  **Classname, attribute name** | **Linked to which database column/table** | | EVENT | ComboBox | comboBox1, Result | event\_id, event\_results → itec\_events | | PARTICIPANT/TEAM | ComboBox | comboBox2, Result | team\_id, event\_results → teams | | POSITION | ComboBox | comboBox3, Result | position, event\_results | | SCORE | TextBox | textBox1, Result | Score, event\_results | | REMARKS | TextBox | textBox2, Result | Remarks, event\_results | | SAVE RESULT | Button | button1, Result | (Triggers insert) event\_results | | MODIFY EXISTING RESULT | Button | button2, Result | (Triggers update) event\_results | | REMOVE A RESULT | Button | button3, Result | (Triggers delete) event\_results | | CALCULATE AND DISPLAY RANKING | Button | button4, Result | (Triggers data reload) event\_results | | BACK | Button | button5, Result | navigation | | Data Grid | |  | | --- | |  |   DataGridView | dataGridView1, Result | Shows results from all columns event\_results + itec\_events + teams |   SELECT event\_id, event\_name FROM itec\_events;  SELECT team\_id, team\_name FROM teams;  SELECT  er.result\_id,  ev.event\_id,  ev.event\_name,  t.team\_id,  t.team\_name,  er.position,  er.score,  er.remarks  FROM event\_results er  JOIN itec\_events ev ON er.event\_id = ev.event\_id  JOIN teams t ON er.team\_id = t.team\_id";  INSERT INTO event\_results  (event\_id, team\_id, position, score, remarks)  VALUES (@event\_id, @team\_id, @position, @score, @remarks);  UPDATE event\_results  SET event\_id=@event\_id, team\_id=@team\_id,  position=@position, score=@score, remarks=@remarks  WHERE result\_id=@result\_id;  DELETE FROM event\_results WHERE result\_id=@result\_id; | |

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| **Report** |  |
| |  |  |  |  | | --- | --- | --- | --- | | **UI Component Name** | **Type of UI component** | **Class Attribute name,**  **Classname, attribute name** | **Linked to which database column/table** | | Report Type | ComboBox | comboBox1, Report | not linked to DB | | Event | ComboBox | comboBox2, Report | itec\_events.event\_name | | Date Range (From) | DateTimePicker | dateTimePicker1, Report | event\_date (for event reports), date\_recorded (for finances), etc. | | Date Range (To) | DateTimePicker | dateTimePicker2, Report | event\_date (for event reports), date\_recorded (for finances), etc. | | Committee | ComboBox | comboBox3, Report | committees.committee\_name | | Display Report | Button | button1, Report | Triggers report generation from various tables | | Export as PDF | Button | button2, Report | Save as PDF | | Export as Excel | Button | button3, Report | Save as excel | | Back | Button | button4, Report | Navigates to Form1 | | Data Grid | DataGridView | |  | | --- | | dataGridView1, Report |  |  | | --- | |  | | Displays results |   SELECT DISTINCT event\_name FROM itec\_events;  SELECT p.name, p.email, p.institute, ep.event\_id, e.event\_name " +  "FROM participants p " +  "JOIN event\_participants ep ON p.participant\_id = ep.participant\_id " +  "JOIN itec\_events e ON ep.event\_id = e.event\_id " +  "WHERE e.event\_date BETWEEN @start AND @end;  SELECT f.transaction\_id, f.amount, f.type\_id, f.description, f.date\_recorded, l.value AS type " +  "FROM finances f " +  "JOIN lookup l ON f.type\_id = l.lookup\_id " +  "WHERE f.date\_recorded BETWEEN @start AND @end";  SELECT c.committee\_name, p.name AS member\_name, l.value AS role " +  "FROM committees c " +  "JOIN committee\_members cm ON c.committee\_id = cm.committee\_id " +  "JOIN participants p ON cm.participant\_id = p.participant\_id " +  "JOIN lookup l ON cm.role\_id = l.lookup\_id " +  "WHERE 1=1";  SELECT event\_name, event\_date, location, description " +  "FROM itec\_events " +  "WHERE event\_date BETWEEN @start AND @end; | |

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| **User** |  |
| |  |  |  |  | | --- | --- | --- | --- | | **UI Component Name** | **Type of UI component** | **Class Attribute name,**  **Classname, attribute name** | **Linked to which database column/table** | | Username | TextBox | textBox1, User | users.username | | Email | TextBox | textBox2, User | users.email | | Password | TextBox | textBox3, User | users.password\_hash | | Role | ComboBox | comboBox1, User | users.role\_id → roles.role\_id | | Save New User | Button | button1, User | Triggers the INSERT users | | Modify Existing User | Button | button2, User | Triggers the UPDATE users | | Remove User | Button | button3, User | Triggers the DELETE users | | Back | Button | button4, User | Navigates back to Form1 | | Grid View | DataGridView | dataGridView, User 1 | Displays: user\_id, username, email, role\_id from users |   SELECT role\_id, role\_name FROM roles;  SELECT user\_id, username, email, role\_id FROM users;  INSERT INTO users (username, email, password\_hash, role\_id) VALUES (@username, @email, @password, @role\_id);  UPDATE users SET email = @email, password\_hash = @password, role\_id = @role\_id WHERE username = @username;  DELETE FROM users WHERE username = @username; | |