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Assignment : ICT

UNIVERSITY MANAGEMENT SYSTEM PROJECT:

Code:

```cpp
#include <iostream>
#include <string>
using namespace std;

int main() {
    // Program details for three departments
    string department1Name = "CS";  // Computer Science
    short department1TotalSeats = 2;
    short department1SeatsAvailable = 2;
    float department1MinMarks = 60.0;
    short department1AcceptedStudents = 0;

    string department2Name = "SE";  // Software Engineering
    short department2TotalSeats = 3;
    short department2SeatsAvailable = 3;
    float department2MinMarks = 65.0;
    short department2AcceptedStudents = 0;

    string department3Name = "DS";  // Data Science
    short department3TotalSeats = 4;
    short department3SeatsAvailable = 4;
    float department3MinMarks = 70.0;
    short department3AcceptedStudents = 0;

    int optionChoice;
    string adminUsername = "admin123";
    string adminPassword = "adminpass";
    string inputUsername, inputPassword;

    // Start the main loop
    while (true) {
        // Display welcome message and options
        cout << "\nWelcome to the University Admission System\n";
```

```cpp
        cout << "1. Admin Access\n";
        cout << "2. Register as Applicant\n";
        cout << "3. Exit System\n";
        cout << "Please select an option: ";
        cin >> optionChoice;

        if (optionChoice == 1) {
            // Admin login
            cout << "Enter admin username: ";
            cin >> inputUsername;
            cout << "Enter admin password: ";
            cin >> inputPassword;

            if (inputUsername == adminUsername && inputPassword == adminPassword)
{

                cout << "Login successful!\n";
                int adminOption;
                // Admin menu
                cout << "\nAdmin Control Panel:\n";
                cout << "1. View Department Information\n";
                cout << "2. Add New Department\n";
                cout << "3. Logout\n";
                cout << "Select an option: ";
                cin >> adminOption;

                if (adminOption == 1) {
                    // Display department details
                    cout << "\nDepartment: " << department1Name
                         << ", Total Seats: " << department1TotalSeats
                         << ", Available Seats: " << department1SeatsAvailable
                         << ", Minimum Marks: " << department1MinMarks << "%"
                         << ", Accepted Students: " <<
department1AcceptedStudents << endl;

                    cout << "Department: " << department2Name
                         << ", Total Seats: " << department2TotalSeats
                         << ", Available Seats: " << department2SeatsAvailable
                         << ", Minimum Marks: " << department2MinMarks << "%"
                         << ", Accepted Students: " <<
department2AcceptedStudents << endl;

                    cout << "Department: " << department3Name
                         << ", Total Seats: " << department3TotalSeats
                         << ", Available Seats: " << department3SeatsAvailable
                         << ", Minimum Marks: " << department3MinMarks << "%"
```

```cpp
                            << ", Accepted Students: " <<
department3AcceptedStudents << endl;
                    } else if (adminOption == 2) {
                        // Add new department (this part is just a placeholder in
this example)
                        cout << "Adding a new department is not implemented in this
demo.\n";
                    } else if (adminOption == 3) {
                        cout << "Logging out...\n";
                        break;  // Break the loop to exit the admin section
                    } else {
                        cout << "Invalid selection. Please try again.\n";
                    }
                } else {
                    cout << "Incorrect login credentials!\n";
                }
            } else if (optionChoice == 2) {
                // Applicant registration process
                string applicantName, applicantEmail, applicantPhone, applicantID;
                short applicantMarks, mathMarks, totalMarks = 500;

                cout << "\nEnter your full name: ";
                cin >> applicantName;
                cout << "Enter your email address: ";
                cin >> applicantEmail;
                cout << "Enter your contact number: ";
                cin >> applicantPhone;
                cout << "Enter your National ID: ";
                cin >> applicantID;
                cout << "Enter your marks (out of " << totalMarks << "): ";
                cin >> applicantMarks;
                cout << "Enter your Math marks: ";
                cin >> mathMarks;

                // Calculate percentage
                float applicantPercentage = (applicantMarks / float(totalMarks)) *
100;
                cout << "Your percentage is: " << applicantPercentage << "%" << endl;

                // Select department preference
                int departmentChoice;
                cout << "Select a department to apply for:\n";
                cout << "1. " << department1Name << " - Computer Science\n";
                cout << "2. " << department2Name << " - Software Engineering\n";
                cout << "3. " << department3Name << " - Data Science\n";
```

```cpp
            cout << "Enter your choice (1/2/3): ";
            cin >> departmentChoice;

            bool isAccepted = false;
            // Apply for selected department
            if (departmentChoice == 1) {
                if (applicantPercentage >= department1MinMarks && mathMarks >= 50
&& department1SeatsAvailable > 0) {
                    department1SeatsAvailable--;
                    department1AcceptedStudents++;
                    isAccepted = true;
                    cout << "Congratulations! You have been accepted into the "
<< department1Name << " department.\n";
                } else {
                    cout << "Sorry, you cannot apply to " << department1Name <<
". ";
                    if (applicantPercentage < department1MinMarks) {
                        cout << "Your marks are not sufficient.\n";
                    } else if (mathMarks < 50) {
                        cout << "Your Math marks are not sufficient.\n";
                    } else {
                        cout << "No seats available.\n";
                    }
                }
            } else if (departmentChoice == 2) {
                if (applicantPercentage >= department2MinMarks && mathMarks >= 50
&& department2SeatsAvailable > 0) {
                    department2SeatsAvailable--;
                    department2AcceptedStudents++;
                    isAccepted = true;
                    cout << "Congratulations! You have been accepted into the "
<< department2Name << " department.\n";
                } else {
                    cout << "Sorry, you cannot apply to " << department2Name <<
". ";
                    if (applicantPercentage < department2MinMarks) {
                        cout << "Your marks are not sufficient.\n";
                    } else if (mathMarks < 50) {
                        cout << "Your Math marks are not sufficient.\n";
                    } else {
                        cout << "No seats available.\n";
                    }
                }
            } else if (departmentChoice == 3) {
```

```cpp
                if (applicantPercentage >= department3MinMarks && mathMarks >= 50
&& department3SeatsAvailable > 0) {
                    department3SeatsAvailable--;
                    department3AcceptedStudents++;
                    isAccepted = true;
                    cout << "Congratulations! You have been accepted into the "
<< department3Name << " department.\n";
                } else {
                    cout << "Sorry, you cannot apply to " << department3Name <<
". ";
                    if (applicantPercentage < department3MinMarks) {
                        cout << "Your marks are not sufficient.\n";
                    } else if (mathMarks < 50) {
                        cout << "Your Math marks are not sufficient.\n";
                    } else {
                        cout << "No seats available.\n";
                    }
                }
            } else {
                cout << "Invalid department selection.\n";
            }

            if (!isAccepted) {
                cout << "Unfortunately, your application was unsuccessful.\n";
            }
        } else if (optionChoice == 3) {
            cout << "Exiting the portal...\n";
            break;  // Exit the program by breaking out of the loop
        } else {
            cout << "Invalid selection. Please try again.\n";
        }
    }

    // Ensure proper program exit
    cout << "Thank you for using the University Admission System. Goodbye!\n";
    return 0;
}
```

Screenshot :

```cpp
1    #include <iostream>
2    #include <string>
3    using namespace std;
4
5    int main() {
6        // Program details for three departments
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8        short department1TotalSeats = 2;
9        short department1SeatsAvailable = 2;
10       float department1MinMarks = 60.0;
11       short department1AcceptedStudents = 0;
12
13       string department2Name = "SE";  // Software Engineering
14       short department2TotalSeats = 3;
15       short department2SeatsAvailable = 3;
16       float department2MinMarks = 65.0;
17       short department2AcceptedStudents = 0;
18
19       string department3Name = "DS";  // Data Science
20       short department3TotalSeats = 4;
21       short department3SeatsAvailable = 4;
22       float department3MinMarks = 70.0;
23       short department3AcceptedStudents = 0;
24
25       int optionChoice;
26       string adminUsername = "admin123";
27       string adminPassword = "adminpass";
28       string inputUsername, inputPassword;
29
30       // Start the main loop
31       while (true) {
32           // Display welcome message and options
33           cout << "\nWelcome to the University Admission System\n";
34           cout << "1. Admin Access\n";
35           cout << "2. Register as Applicant\n";
36           cout << "3. Exit System\n";
37           cout << "Please select an option: ";
38           cin >> optionChoice;
39
```

```
 31          while (true) {
 89              } else if (optionChoice == 2) {
138                  } else if (departmentChoice == 2) {
144                      } else {
146                          if (applicantPercentage < department2MinMarks) {
147                              cout << "Your marks are not sufficient.\n";
148                          } else if (mathMarks < 50) {
149                              cout << "Your Math marks are not sufficient.\n";
150                          } else {
151                              cout << "No seats available.\n";
152                          }
153                      }
154                  } else if (departmentChoice == 3) {
155                      if (applicantPercentage >= department3MinMarks && mathMarks >= 50 && department3SeatsAvailable > 0) {
156                          department3SeatsAvailable--;
157                          department3AcceptedStudents++;
158                          isAccepted = true;
159                          cout << "Congratulations! You have been accepted into the " << department3Name << " department.\n";
160                      } else {
161                          cout << "Sorry, you cannot apply to " << department3Name << ". ";
162                          if (applicantPercentage < department3MinMarks) {
163                              cout << "Your marks are not sufficient.\n";
164                          } else if (mathMarks < 50) {
165                              cout << "Your Math marks are not sufficient.\n";
166                          } else {
167                              cout << "No seats available.\n";
168                          }
169                      }
170                  } else {
171                      cout << "Invalid department selection.\n";
172                  }

174                  if (!isAccepted) {
175                      cout << "Unfortunately, your application was unsuccessful.\n";
176                  }
177              } else if (optionChoice == 3) {
178                  cout << "Exiting the portal...\n";
179                  break;  // Exit the program by breaking out of the loop
180              } else {
181                  cout << "Invalid selection. Please try again.\n";
182              }
183          }

185      // Ensure proper program exit
186      cout << "Thank you for using the University Admission System. Goodbye!\n";
187      return 0;
188 }
```