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Final Project: Graphs and Test Cases

**Edit Project Method:**

1. if (projectPagePNumBox.Text == "")

2. return "please enter Project Number";

3. conn.Open();

4. if (flag == 1)

5. String upDateProject = ("UPDATE Project SET description = '" + projectDesc +

"', dueDate = '" + projectDueDates +

"', prjPhase = '" + projectPhase +

"', deliverables = '" + projectDeliverables +

"', hoursNeeded = " + projectHours +

", prjStatus = '" + projectStatus +

"' WHERE prjNo = '" + projectNum + "';");

6. MySqlCommand cmd = new MySqlCommand(upDateProject, conn);

7. Console.WriteLine(ex.Message);

8. cmd.ExecuteNonQuery();

return "Project Changed";

9. else if (flag == 0)

10. return "FLAG PASSED INCORRECT VALUE";

11. string prj = null;

String getPrjDup = "SELECT prjNo FROM Project WHERE prjNo = '" + projectNum + "';";

12. MySqlCommand cmd1 = new MySqlCommand(getPrjDup, conn);

13. Console.WriteLine(ex.Message);

14. MySqlDataReader reader = cmd1.ExecuteReader();

15. while (reader.Read())

16. prj = reader.GetString("prjNo");

17. reader.Close();

18. if (prj != null)

19. return "Duplicate Project";

20. String addProject = ("INSERT INTO Project (prjNo, prjLeader, description, prjPhase, dueDate, deliverables, hoursNeeded, prjStatus)" +

"VALUES ('" + projectNum + "', " + "'" + eID + "', '" + projectDesc + "', '" + projectPhase + "', '" + projectDueDates + "', '" + projectDeliverables + "', '" + projectHours + "', '" + projectStatus + "');");

21. MySqlCommand cmd = new MySqlCommand(addProject, conn);

22. Console.WriteLine(ex.Message);

23. cmd.ExecuteNonQuery();

return "Project Added";

GRAPH HERE

Edge Coverage:

(1, 2)

(1, 3, 4, 5, 6, 8)

(1, 3, 4, 5, 6, 7)

(1, 3, 4, 9, 10)

(1, 3, 4, 9, 11, 12, 13)

(1, 3, 4, 9, 11, 12, 14, 15, 16, 15, 17, 18, 19)

(1, 3, 4, 9, 11, 12, 14, 15, 16, 15, 17, 18, 20, 21, 22) Can’t test, program will catch the first invalid connection

(1, 3, 4, 9, 11, 12, 14, 15, 16, 15, 17, 18, 20, 21, 23)

**EditMyHours Method:**

1. empHours = -1;

2. empHours = int.Parse(hoursBox.Text);

3. Console.WriteLine(ex.Message);

4. if (empHours >= 0)

5. return "Invalid Input";

6. conn.Open();

7. MySqlCommand cmd = new MySqlCommand("UPDATE Employee SET hoursAvail = '" + empHours + "'WHERE employeeID = '" + this.eID + "';", conn);

8. Console.WriteLine(ex.Message);

9. Console.WriteLine(cmd.ExecuteNonQuery());

conn.Close();

return "Hours Updated";

GRAPH HERE

Edge Coverage:

(1, 2, 3)

(1, 2, 4, 5)

(1, 2, 4, 6, 7, 8)

(1, 2, 4, 6, 7, 9)

**EditVacation Method:**

1. conn.Open();

string dupId = null;

String getVacDup = "SELECT employeeID FROM Vacation WHERE employeeID = '" + eID + "' AND startDate = '" + startDate + "';";

2. MySqlCommand cmd1 = new MySqlCommand(getVacDup, conn);

3. Console.WriteLine(ex.Message);

4. MySqlDataReader reader = cmd1.ExecuteReader();

5. while (reader.Read())

6. dupId = reader.GetString("employeeID");

7. if (dupId != null)

8. conn.Close();

return "Duplicate Vacation";

9. MySqlCommand cmd = new MySqlCommand("INSERT into Vacation VALUES(" + eID + ", '" + startDate + "','" + endDate + "');", conn);

10. Console.WriteLine(ex.Message);

11. Console.WriteLine(cmd.ExecuteNonQuery());

conn.Close();

return "Vacation Days Created";

GRAPH HERE

Edge Coverage:

(1, 2, 4, 5, 6, 5, 7, 8)

(1, 2, 4, 5, 6, 5, 7, 9, 11)

(1, 2, 3)

(1, 2, 4, 5, 7, 9, 11) Can’t test, infeasible path, program will catch the first invalid connection

**GetAdmin method:**

1. Boolean isAdmin = false;

int result = 0;

conn.Open();

2. MySqlCommand cmd = new MySqlCommand("SELECT admin FROM Employee WHERE employeeID = '" + this.eID + "';", conn);

3. Console.WriteLine(ex.Message);

4. MySqlDataReader reader = cmd.ExecuteReader();

5. while (reader.Read())

6. result = reader.GetInt16("admin");

7. conn.Close();

8. if(result == 1)

9. isAdmin = true;

10. return isAdmin;

GRAPH HERE

Edge Coverage:

(1, 2, 3)

(1, 2, 4, 5, 6, 5, 7, 8, 9, 10)

(1, 2, 4, 5, 6, 5, 7, 8, 10)

**Login Method:**

1. conn.Open();

string getLogin = "SELECT employeeID FROM Employee WHERE email = '" + email + "' AND pssword = '" + password + "';";

2. MySqlCommand cmd = new MySqlCommand(getLogin, this.conn);

3. Console.WriteLine(ex.Message);

4. MySqlDataReader reader = cmd.ExecuteReader();

5. while (reader.Read())

6. eID = reader.GetInt16("employeeID");

7. if (eID == null)

8. Console.WriteLine ("Not valid login");

9. Console.WriteLine("Logged in");

10. conn.Close();

return eID;

GRAPH HERE

Edge Coverage:

(1, 2, 3)

(1, 2, 4, 5, 6, 7, 8, 10)

(1, 2, 4, 5, 6, 7, 9, 10)

Test Cases

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Test Case ID | Method | Test Path | Pre Conditions | Input | Expected Output | Result |
| 1 | EditProject | (1, 2) | in db: eID = 1 | “”, ””, ””, ””, ”” , 0, ””, 1, 0 | "please enter Project Number" |  |
| 2 | EditProject | (1, 3, 4, 5, 6, 8) | in db: eID = 1, projectNum = 1 | “1”, ””, ””, ””, ”” , 0, ””, 1, 1 | "Project Changed" |  |
| 3 | EditProject | (1, 3, 4, 5, 6, 7) | Connection to db invalid | “1”, ””, ””, ””, ”” , 0, ””, 1, 1 | Exception ex |  |
| 4 | EditProject | (1, 3, 4, 9, 10) | in db: eID = 1, | “2”, ””, ””, ””, ”” , 0, ””, 1, -1 | "FLAG PASSED INCORRECT VALUE" |  |
| 5 | EditProject | (1, 3, 4, 9, 11, 12, 13) | Connection to db invalid | “2”, ””, ””, ””, ”” , 0, ””, 1, 0 | Exception ex |  |
| 6 | EditProject | (1, 3, 4, 9, 11, 12, 14, 15, 16, 15, 17, 18, 19) | in db: eID = 1, projectNum = 1 | “1”, ””, ””, ””, ”” , 0, ””, 1, 0 | "Duplicate Project" |  |
| 7 | EditProject | (1, 3, 4, 9, 11, 12, 14, 15, 16, 15, 17, 18, 20, 21, 23) | in db: no projectnum = 3, eID = 1 | “3”, ””, ””, ””, ”” , 0, ””, 1, 0 | "Project Added" |  |
| 8 | EditMyHours | (1, 2, 3) | in db: eID = 1 | “eight”, 1 | Exception ex |  |
| 9 | EditMyHours | (1, 2, 4, 5) | in db: eID = 1 | “-12”, 1 | "Invalid Input" |  |
|  | EditMyHours | (1, 2, 4, 6, 7, 8) | Connection to db invalid | “1”, 1 | Exception ex |  |
|  | EditMyHours | (1, 2, 4, 6, 7, 9) | in db: eID = 1 | “2”, 1 | "Hours Updated" |  |
|  | EditVacation | (1,2,4,5,6,5,7,8) | in db: 1, 1/1/20, 1/3/20 | “1/1/20”, “1/2/20”, 1 | “Duplicate Vacation” |  |
|  | EditVacation | (1,2,4,5,6,5,7,9,11) | in db: eID = 1 | “2/1/20”, ”2/2/20”, 1 | “Vacation Days Created” |  |
|  | EditVacation | (1,2,3) | Connection to db invalid | “2/1/20”, ”2/2/20”, 1 | Exception ex |  |
|  | GetAdmin | (1, 2, 3) | Connection to db invalid | 1 | Exception ex |  |
|  | GetAdmin | (1, 2, 4, 5, 6, 5, 7, 8, 9, 10) | in db: eID = 2, admin = 1 | 2 | true |  |
|  | GetAdmin | (1, 2, 4, 5, 6, 5, 7, 8, 10) | in db: eID = 1, admin = 0 | 1 | false |  |
|  | Login | (1, 2, 3) | Connection to db invalid | “”, ”” | Exception ex |  |
|  | Login | (1, 2, 4, 5, 6, 7, 8, 10) | not in db | “sevenwonders@yahoo.com”, “password” | null |  |
|  | Login | (1, 2, 4, 5, 6, 7, 9, 10) | in db: email = testing@yahoo.com, pssword = pword, eID = 1 | “testing@yahoo.com”, “pword” | 1 |  |