University of British Columbia, Vancouver
Department of Computer Science

CPSC 304 Project Cover Page

Milestone #: 4

Date: 2024/04/05

Group Number: 59

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By typing our names and student numbers in the above table, we certify that the work in the attached assignment was performed solely by those whose names and student IDs are included above. (In the case of Project Milestone 0, the main purpose of this page is for you to let us know your e-mail address, and then let us assign you to a TA for your project supervisor.)

In addition, we indicate that we are fully aware of the rules and consequences of plagiarism, as set forth by the Department of Computer Science and the University of British Columbia

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Project Summary

The application provides a platform for passionate escape room fans to engage with their favorite teams by getting information such as their performance data. Additionally, it provides escape operators a means to analyze statistics for the rooms such as user ratings that would help them in taking decisions regarding managing and developing their establishments further to build a more compelling attraction.

The following actions can be performed by a user in our final project-:

- Users can choose to log in as player, employee or viewer
- Viewers can view the existing Players and teams
- Viewers and Players can users can give and view all the ratings with comments
- Players can make and view their reservation
- Employees can add a new puzzle to an escape room along with its puzzle difficulty. If a puzzle with a given name already exists in another escape room then the system crosschecks the given puzzle difficulty with the existing difficulty of the puzzle in the system. If the puzzle difficulty matches, only the Puzzle table is updated. If the puzzle difficulty does not match, the insertion is rejected
- Employees can update the salary and position name of the jobs
- Employees can add points scored by a given team on a particular puzzle
- Employees can delete a puzzle from the system by providing the Puzzle ID. The scores for all the teams on the puzzle with the provided ID are also deleted automatically.
- Employees can insert, delete and update statuses of props for puzzles.
- Employees can view and add escape rooms.
- Employees can check all the tables in the database.
- All Users can view their profiles.
- All Users can view the maximum, minimum and average scores of teams across all the puzzles.
- All Users can view the names of teams who have average score across all puzzle greater than all other teams' average scores
- All Users can view names of teams who have played in all the Escape Rooms

Changes in the final Schema

- The attribute TeamName in the table ScoreOnPuzzle is set as a foreign key referencing Team(Name) with a cascade on delete constraint. This was implemented to guarantee that whenever a team's information is deleted from our database, all associated scores of that team are also removed.
- The cascade on delete constraint is applied to the Ename attribute in the PuzzleHas table to ensure that the information associated with the puzzle contained within a particular escape room is removed if the escape room is deleted.

- A “comment” attribute is added to the RatingGivenToAssigns table to ensure the ratings provide enough useful information to the employers, also the “date added” and “email” attributes are removed because it’s not significant.
- A “PassWord” attribute is added to the Users table. We need this attribute to do the user authentication.
- A “PositionName” attribute is added to the PositionSalary table. This is to satisfy the requirement for update in milestone 5 where the table needs to have at least two non-primary key attributes and one attribute is unique.
- Data type of “Position” in the PositionSalary table is changed from char to int. This is because we want it to be an ID of that position and we already have “PositionName” attribute.

Relational Schema

- PuzzleHas(PuzzleID, Pname , **Ename**)

PUZZLEID	PNAME	ENAME
1	Room lock	Marys Wonderland
2	Shelf lock	Fifteen reasons Vincent lied
3	Room lock	Fifteen reasons Vincent lied
4	Statue rotation	Escape Arkaham
5	Room lock	Leviathan
6	Room lock	The giggling
7	Shelf lock	The giggling
8	Treasure Puzzle	Escape Arkaham
9	Guess the Word	Leviathan

- ScoreOnPuzzle(**TeamName**, Points, **PuzzleID**)

TEAMNAME	POINTS	PUZZLEID
Let us cook	63	2
T369	73	1
T369	50	4
Dragon Slayers	100	7
The Rebels	89	6
The Rebels	100	1
The Rebels	55	3
Dragon Slayers	99	2
Dragon Slayers	90	3
Let us cook	22	7
Let us cook	45	4
The Young Blood	100	4
The New Members	99	5
The New Members	90	6
The New Members	100	3

- PuzzleDifficulty(Pname, Difficulty)

PNAME	DIFFICULTY
Room lock	4
Shelf lock	3
Statue rotation	5
Treasure Puzzle	2
Guess the Word	1

- PropHave(PropID, Name, Status, **PuzzleID**)

PROPID	NAME	STATUS	PUZZLEID
1	Lock	Intact	1
2	Statue	Damaged	4
3	Television Screen	Intact	9
4	Books	Damaged	2
5	Key	Intact	6

- Users(Name, Email, Address, PostalCode, PassWord)

NAME	EMAIL	ADDRESS	POSTALCODE	PASSWORD
User1	user1@gmail.com	1000 Bridgeport Rd	V6V A03	gsoBlRHvRHJ3e8Y
User2	user2@gmail.com	435 Cambie St	F8S 4G3	ItqHYXMBATzEHqF
User3	user3@gmail.com	4090 Wrangler Rd	T1X 0K2	RN61tTRk5aQFglt
User4	user4@gmail.com	21 Brentwood Blvd	V6S 3B8	WtENtlwQJgGCjdy
User5	user5@gmail.com	78 Hanson St	M4C 1A1	b4Qv04Xg400ORPZ

- PostalCity(PostalCode, City)

POSTALCODE	CITY
V6V A03	Vancouver
F8S 4G3	Calgary
T1X 0K2	Edmonton
V6S 3B8	Toronto
M4C 1A1	Richmond

- Employee(**Email**, Position)

EMAIL	POSITION
user1@gmail.com	1
user2@gmail.com	2
user3@gmail.com	3
user4@gmail.com	4

- PositionSalary(Position, PositionName, Salary)

POSITION	POSITIONNAME	SALARY
1	Company manager	90000
2	Front-desk	50000
3	Prop manager	70000
4	Puzzle manager	70000

- Viewer(**Email**, Age)

EMAIL	AGE
user1@gmail.com	25
user2@gmail.com	33

- PlayerPartOf(**Email**, Alias, SkillLevel, PlayingStyle, **Name**, Since)

EMAIL	ALIAS	SKILLLEVEL	PLAYINGSTYLE	NAME	SINCE
user1@gmail.com	Cool	5	Fast	Item Finder	2022-09-03T07:00:00.000Z
user5@gmail.com	Sophine	3	Careful	Let us cook	2023-10-06T07:00:00.000Z

- Fix(**Email**, **PropID**)

EMAIL	PROPID
user3@gmail.com	1
user3@gmail.com	2
user3@gmail.com	3
user3@gmail.com	4
user3@gmail.com	5

- Adjust(**Email**, **PuzzleID**)

EMAIL	PUZZLEID
user4@gmail.com	1
user4@gmail.com	2
user4@gmail.com	3
user4@gmail.com	4
user4@gmail.com	5
user4@gmail.com	6
user4@gmail.com	7
user4@gmail.com	8
user4@gmail.com	9

- Team(Name, TeamCapacity)

NAME	TEAMCAPACITY
SEN	6
The Rebels	5
T369	5
Dragon Slayers	7
Let us cook	4
The Young Blood	2
The New Members	2
Item Finder	6

- EscapeRoom(Name, Genre, Timelimit)

Name	Genre	Time limit
Mary's Wonderland	Classic	60
The giggling	Horror	75
Fifteen reasons Vincent lied	Role-play	75
Escape Arkaham	Horror	60
Leviathan	Classic	120
Me	Horror	120

- BookingMakesFor(BookingID, Time, Email, **Team**, **Room**)

Booking ID	Time	Email	Team	Room
83310	2024-05-02	joedoe12345@gmail.com	Diggers	Fifteen reasons Vincent lied
19543	2024-07-18	jimmyyang@gmail.com	Let us cook	Leviathan
58852	2024-04-10	user1@gmail.com	Have fun	Escape Arkaham
29237	2024-04-14	user2@gmail.com	LL	Leviathan
40976	2024-06-12	user1@gmail.com	YY	Mary's Wonderland
13960	2024-04-30	user1@gmail.com	OOO	Escape Arkaham
17993	2024-04-17	user1@gmail.com	Item Finder	Leviathan

- RatingGivenToAssigns(ID, **Room**, Score, Comment)

ID	Room	Score	Comment
27753	Fifteen reasons Vincent lied	5	Very good
83396	Leviathan	3	Pretty average
51083	Fifteen reasons Vincent lied	2	The puzzle designs are average but the plot does not make sense.
51198	Fifteen reasons Vincent lied	5	Nice
75357	Escape Arkaham	5	fdsa
62462	Me	5	This is so me
49737	Mary's Wonderland	2	Too easy
35177	Mary's Wonderland	4	Average, classic, but not bad
38105	Escape Arkaham	4	You will enjoy if you are a DC fan.
88061	Escape Arkaham	5	I like the second puzzle.
89576	The giggling	5	Good
94749	Me	5	Innovative!

Required SQL Queries

S.No.	Query	File	Line
1	Insert	escapeRoomService.js	50-76
2	Delete	puzzleService.js	63-74
3	Update	appService.js	320-322
4	Selection	escapeRoomService.js	176-225
5	Join	appService.js	250-252
6	Projection	appService.js	187, 199-201, 213
7	Aggregation with Group by	scoreService.js	30-37, 39-46, 48-55
8	Aggregation with Having	escapeRoomService.js	35-47
9	Nested Aggregation with group by	scoreService.js	69-83
10	Division	scoreService.js	57-67

Screenshots demonstrating the functionality

Update

<table>
<tr><td>Before</td><td>Position ID: 2
New PositionName: New position name
New Salary: New salary (integer only) Update
<table><tr><th>Position ID</th><th>Posistion Name</th><th>Salary</th></tr><tr><td>1</td><td>Company manager</td><td>90000</td></tr><tr><td>2</td><td>Front-desk</td><td>50000</td></tr><tr><td>3</td><td>Prop manager</td><td>70000</td></tr><tr><td>4</td><td>Puzzle manager</td><td>70000</td></tr></table></td></tr>
<tr><td>During</td><td>Position ID: 2
New PositionName: Escape room NPC
New Salary: 60000 Update
<table><tr><th>Position ID</th><th>Posistion Name</th><th>Salary</th></tr><tr><td>1</td><td>Company manager</td><td>90000</td></tr><tr><td>2</td><td>Front-desk</td><td>50000</td></tr><tr><td>3</td><td>Prop manager</td><td>70000</td></tr><tr><td>4</td><td>Puzzle manager</td><td>70000</td></tr></table></td></tr>
<tr><td>After</td><td>Position ID: 2
New PositionName: Escape room NPC
New Salary: 60000 Update
Updated successfully
<table><tr><th>Position ID</th><th>Posistion Name</th><th>Salary</th></tr><tr><td>1</td><td>Company manager</td><td>90000</td></tr><tr><td>2</td><td>Escape room NPC</td><td>60000</td></tr><tr><td>3</td><td>Prop manager</td><td>70000</td></tr><tr><td>4</td><td>Puzzle manager</td><td>70000</td></tr></table></td></tr>
</table>

Join

Before	**Login** Email: Enter Email Password: Enter Password Login as Viewer Login as Employee Login as Player
During	**Login** Email: user1@gmail.com Password: gsoBlRHvRHJ3e8Y Login as Viewer Login as Employee Login as Player
After (Going to the employee page)	**Database Connection Status: connected** **View Profile** View Profile **Update Salary** Position ID: 1 New PositionName: New position name New Salary: New salary (integer only) Update **Manage Puzzle and Prop** Puzzles Page Props Page **Manage Scores** Scores Page **Manage Escape Room** Manage escape room **Manage Tables** Table name: ESCAPEROOM NAME GENRE TIMELIMIT Get content

Position ID	Posistion Name	Salary
1	Company manager	90000
2	Front-desk	50000
3	Prop manager	70000
4	Puzzle manager	70000

Projection

<table>
<tr><td>Before</td><td>Table name: ESCAPEROOM
☐ NAME
☐ GENRE
☐ TIMELIMIT

Get content</td></tr>
<tr><td>During</td><td>Table name: ESCAPEROOM
☑ NAME
☐ GENRE
☑ TIMELIMIT

Get content</td></tr>
<tr><td>After</td><td>Table name: ESCAPEROOM
☑ NAME
☐ GENRE
☑ TIMELIMIT

Get content
<table><tr><th>NAME</th><th>TIMELIMIT</th></tr><tr><td>The giggling</td><td>75</td></tr><tr><td>Fifteen reasons Vincent lied</td><td>75</td></tr><tr><td>Escape Arkaham</td><td>60</td></tr><tr><td>Leviathan</td><td>120</td></tr><tr><td>Marys Wonderland</td><td>120</td></tr></table></td></tr>
</table>

Insert

<table>
<tr><td>Before</td><td>

History ratings:

ID	Room	Score	Comment
27753	Fifteen reasons Vincent lied	5	Very good
83396	Leviathan	3	Pretty average
51083	Fifteen reasons Vincent lied	2	The puzzle designs are average but the plot does not make sense.
51198	Fifteen reasons Vincent lied	5	Nice
75357	Escape Arkaham	5	fdsa
62462	Me	5	This is so me
49737	Mary's Wonderland	2	Too easy
35177	Mary's Wonderland	4	Average, classic, but not bad
38105	Escape Arkaham	4	You will enjoy if you are a DC fan.
88061	Escape Arkaham	5	I like the second puzzle.
89576	The giggling	5	Good

</td></tr>
<tr><td>During</td><td>

Rate a room

Choose a room: Me

Your rating:

5

Comments:

Innovative!

insert

</td></tr>
<tr><td>After</td><td>

History ratings:

ID	Room	Score	Comment
27753	Fifteen reasons Vincent lied	5	Very good
83396	Leviathan	3	Pretty average
51083	Fifteen reasons Vincent lied	2	The puzzle designs are average but the plot does not make sense.
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88061	Escape Arkaham	5	I like the second puzzle.
89576	The giggling	5	Good
94749	Me	5	Innovative!

</td></tr>
</table>

Selection

<table>
<tr><td>Before</td><td>
Find my previous bookings
Input includes date
Treat date as empty
Time: 2024-04-05
AND Room: Please type in the escape r
Make Query
Show All My Bookings selected by given conditions
<table><tr><th>Booking ID</th><th>Time</th><th>Email</th><th>Team</th><th>Room</th></tr></table>
</td></tr>
<tr><td>During</td><td>
(Choose either AND or OR from the dropdown box in the middle, choose whether to input the booking time, and input booking time or room or both to perform a search)
Find my previous bookings
Input includes date
Treat date as empty
Time: 2024-04-14
AND Room: Me
Make Query
Show All My Bookings selected by given conditions
<table><tr><th>Booking ID</th><th>Time</th><th>Email</th><th>Team</th><th>Room</th></tr></table>
</td></tr>
<tr><td>After</td><td>
<table>
<tr><td>30821</td><td>2024-04-14</td><td>user1@gmail.com</td><td>Item Finder</td><td>Me</td></tr>
<tr><td>46993</td><td>2024-06-24</td><td>user1@gmail.com</td><td>Item Finder</td><td>Leviathan</td></tr>
<tr><td>85369</td><td>2024-06-13</td><td>user1@gmail.com</td><td>Item Finder</td><td>Leviathan</td></tr>
<tr><td>72105</td><td>2024-07-10</td><td>user1@gmail.com</td><td>Item Finder</td><td>Mary's Wonderland</td></tr>
<tr><td>19592</td><td>2024-10-24</td><td>user1@gmail.com</td><td>Item Finder</td><td>Leviathan</td></tr>
</table>
Find my previous bookings
Input includes date
Treat date as empty
Time: 2024-04-14
AND Room: Me
Make Query
Show All My Bookings selected by given conditions
<table><tr><th>Booking ID</th><th>Time</th><th>Email</th><th>Team</th><th>Room</th></tr><tr><td>30821</td><td>2024-04-14</td><td>user1@gmail.com</td><td>Item Finder</td><td>Me</td></tr></table>
</td></tr>
</table>

Aggregation with Having

Before	**Escape Room with High Average Ratings** Select all rooms with rating greater to or equal than: 5 Get the rooms Room Average Rating
During	**Escape Room with High Average Ratings** Select all rooms with rating greater to or equal than: 4 Get the rooms Room Average Rating
After	**Escape Room with High Average Ratings** Select all rooms with rating greater to or equal than: 4 Get the rooms Room | Average Rating The giggling | 5 Fifteen reasons Vincent lied | 4 Me | 5 Escape Arkaham | 4.66666666666667

Delete

Before	Puzzle Page **Show Puzzle** Puzzle Name | Puzzle ID | Escape Room Name | Puzzle Difficulty Room lock | 1 | Marys Wonderland | 4 Shelf lock | 2 | Fifteen reasons Vincent lied | 3 Room lock | 3 | Fifteen reasons Vincent lied | 4 Statue rotation | 4 | Escape Arkaham | 5 Room lock | 5 | Leviathan | 4 Room lock | 6 | The giggling | 4 Shelf lock | 7 | The giggling | 3 Treasure Puzzle | 8 | Escape Arkaham | 2 Guess the Word | 9 | Leviathan | 1 Scores Page

Show Scores

Team Name	Score	Puzzle ID
Let us cook	63	2
T369	73	1
T369	50	4
Dragon Slayers	100	7
The Rebels	89	6
The Rebels	100	1
The Rebels	55	3
Dragon Slayers	99	2
Dragon Slayers	90	3
Let us cook	22	7
Let us cook	45	4
The Young Blood	100	4
The New Members	99	5
The New Members	90	6
The New Members	100	3

During

Delete Puzzle

Puzzle ID: 4

delete

After

Delete Puzzle

Puzzle ID: 4

delete

Delete successfully!

Puzzle Page

Show Puzzle

Puzzle Name	Puzzle ID	Escape Room Name	Puzzle Difficulty
Room lock	1	Marys Wonderland	4
Shelf lock	2	Fifteen reasons Vincent lied	3
Room lock	3	Fifteen reasons Vincent lied	4
Room lock	5	Leviathan	4
Room lock	6	The giggling	4
Shelf lock	7	The giggling	3
Treasure Puzzle	8	Escape Arkaham	2
Guess the Word	9	Leviathan	1

Scores Page

<table>
<tr><td></td><td>

Show Scores

Team Name	Score	Puzzle ID
Let us cook	63	2
T369	73	1
Dragon Slayers	100	7
The Rebels	89	6
The Rebels	100	1
The Rebels	55	3
Dragon Slayers	99	2
Dragon Slayers	90	3
Let us cook	22	7
The New Members	99	5
The New Members	90	6
The New Members	100	3

</td></tr>
</table>

Aggregation with Group by

<table>
<tr><td>Before</td><td>

Show Teams And Scores

Maximum Minimum Average

TeamName	Score

</td></tr>
<tr><td>During</td><td>

To get the maximum score of each team

Show Teams And Scores

Maximum Minimum Average

TeamName	Score

To get the minimum score of each team

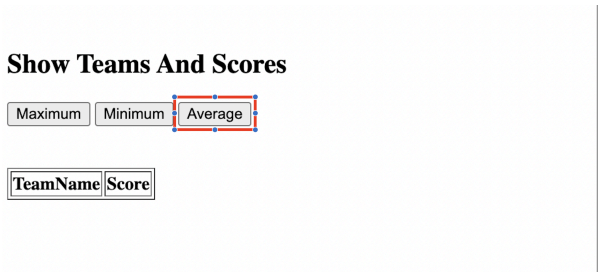
Show Teams And Scores

Maximum Minimum Average

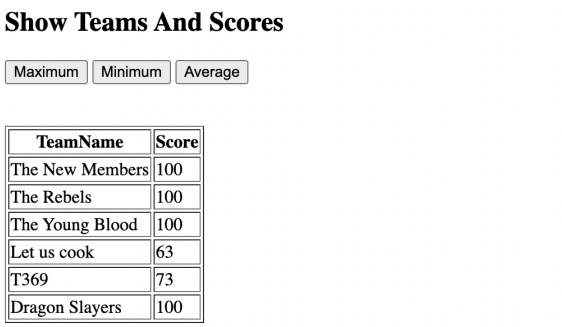
TeamName	Score

</td></tr>
</table>

<table>
<tr>
<td></td>
<td>To get the average score of each team

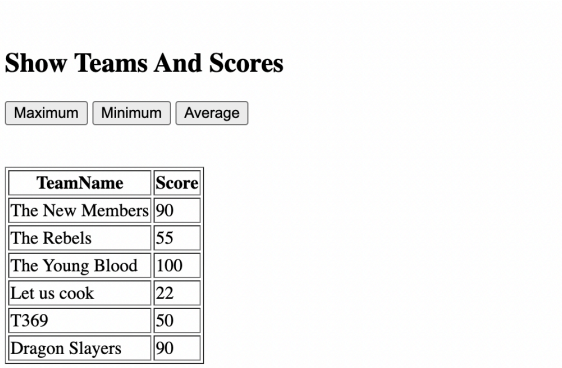


</td>
</tr>
<tr>
<td>After</td>
<td>Results for maximum score of each team



TeamName	Score
The New Members	100
The Rebels	100
The Young Blood	100
Let us cook	63
T369	73
Dragon Slayers	100

Results for minimum score of each team



TeamName	Score
The New Members	90
The Rebels	55
The Young Blood	100
Let us cook	22
T369	50
Dragon Slayers	90
</td>
</tr>
</table>

	Results for average score of each team **Show Teams And Scores** Maximum Minimum Average TeamName | Score The New Members | 96.33333333333333 The Rebels | 81.33333333333333 The Young Blood | 100 Let us cook | 43.333333333333336 T369 | 61.5 Dragon Slayers | 96.33333333333333

Nested Aggregation with Group by

Before	**Team Leaders** Names of Teams who have average score across all puzzle greater than all other teams average scores Find Teams TeamName
During	**Team Leaders** Names of Teams who have average score across all puzzle greater than all other teams average scores Find Teams TeamName

After	**Team Leaders** Names of Teams who have average score across all puzzle greater than all other teams average scores Find Teams TeamName The New Members Dragon Slayers

Division

Before	**Teams who have played in all Escape Rooms** Find Teams TeamName
During	**Teams who have played in all Escape Rooms** Find Teams TeamName
After	**Teams who have played in all Escape Rooms** Find Teams TeamName SEN T369