



BOWLINGALLEY @TERPZONE

PROJECT_0504_10

Group members:

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MISSION STATEMENT:

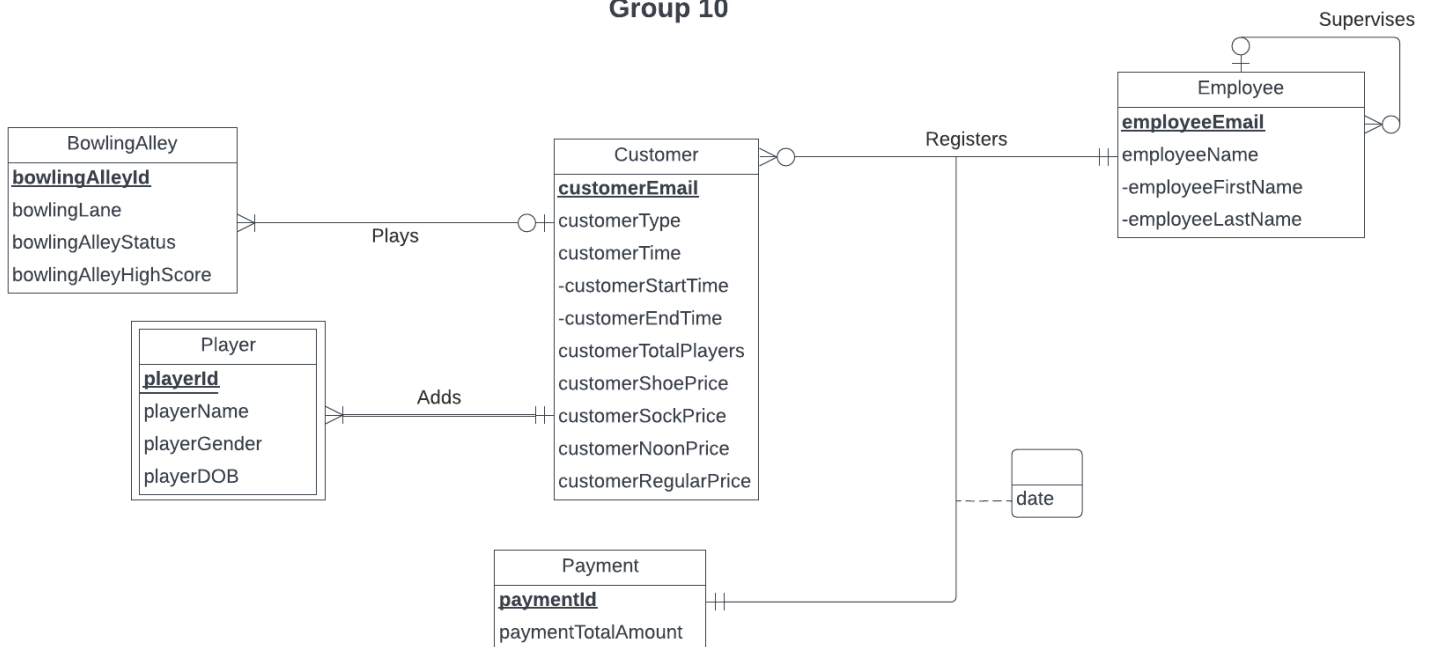
"To provide valuable insights and optimize the overall bowling experience for both customers and employees at Terpzone, we aim to establish a comprehensive database for the bowling alley. Our goal is to enhance operational efficiency seamlessly by integrating customer profiles, employee records, pricing structures, and transactional data at Terpzone."

MISSION OBJECTIVES:

- To analyze peak rush hours for service planning.
- To leverage database insights to differentiate student, staff and general public demographics for target marketing.
- Compare player engagement metrics between weekends and weekdays to optimize scheduling and promotional activities for enhanced customer experience.
- Determine the predominant age group of players, frequently visiting TerpZone BowlingAlley

ERD (ENTITY RELATIONSHIP DIAGRAM)

BowlingAlley @Terpzone ERD by
Group 10



RELATIONAL SCHEMA

- Employee(employeeEmail, employeeFirstname, employeeLastName, employeeEmailSupervisor)
- Customer(customerEmail, customerType, customerStartTime, customerEndTime, customerTotalPlayers, customerShoePrice, customerSockPrice, customerNoonPrice, customerRegularPrice)
- Payment(paymentId, paymentTotalAmount)
- Player(playerId, playerName, playerGender, playerDOB, customerEmail)
- BowlingAlley(bowlingAlleyId, bowlingLane, bowlingAlleyStatus, bowlingAlleyHighScore, customerEmail)
- Registers(customerEmail, employeeEmail, paymentId, date)

BUSINESS RULES:

[R1] When a supervisor is supervising the employee(s), the supervisor's information cannot be deleted from the database.

[R2] When a supervisor is supervising the employee(s), the supervisor's information cannot be updated in the database.

[R3] When a customer is playing in the bowling alley, the customer can be deleted from the database.

[R4] When a customer is playing in the bowling alley, the customer can be updated in the database.

[R5] When a customer is deleted from the database, the players should be deleted from the database as well.

[R6] When a customer is updated in the database, the player's information should be changed in the database accordingly.

[R7] When the date is registered for the payment by the employee for the customer; the employee, the customer and the payment cannot be deleted from the database.

[R8] When the date is registered for the payment by the employee for the customer; the employee, the customer and the payment cannot be changed in the database.

REFERENTIAL INTEGRITY ACTIONS:

Relation	Foreign Key	Base Relation	Primary Key	Business Rule	ON DELETE	Business Rule	ON UPDATE
Employee	employeeEmailSupervisor	Employee	employeeEmail	R1	NO ACTION	R2	NO ACTION
Player	customerEmail	Customer	customerEmail	R3	CASCADE	R4	CASCADE
BowlingAlley	customerEmail	Customer	customerEmail	R5	CASCADE	R6	CASCADE
Registers	customerEmail	Customer	customerEmail	R7	NO ACTION	R8	NO ACTION
Registers	employeeEmail	Employee	employeeEmail	R7	NO ACTION	R8	NO ACTION
Registers	paymentId	Payment	paymentId	R7	NO ACTION	R8	NO ACTION

SAMPLE DATA

Employee:

employeeEmail	employeeFirstName	employeeLastName	employeeEmailSupervisor
mgolze@umd.edu	Mike	Golze	NULL
sba25@umd.edu	Sarah	Anthony	mgolze@umd.edu

Customer:

customerEmail	customerType	customerStartTime	customerEndTime	customerTotalPlayers	customerShoePrice	customerSocksPrice	customerNoonPrice	customerRegularPrice
sgontu@umd.edu	STUDENT	16:35:23	17:40:23	4	8	0	NULL	3.5
piyalib@umd.edu	STUDENT	13:13:33	16:08:31	3	9	2	NULL	4.5
mattson@umd.edu	FACULTY	13:23:34	15:58:32	2	8.00	2.00	2.75	NULL
vijayendra096@gmail.com	PUBLIC	15:00:34	16:50:32	2	4.00	2.00	1.75	NULL

Payment:

paymentId	paymentTotalAmount
bh320	12.50
bj758	15.50

Player:

playerId	playerName	playerGender	playerDOB	customerEmail
P2352	Apoorva	F	1967-08-16	sriyeshk@umd.edu
P2353	Vamshi	M	1999-07-02	vamshi1168@gmail.com
P2354	Rahul	M	1991-06-11	vamshi1168@gmail.com
P2355	Gnapika	F	2001-10-09	gnapika9@umd.edu
P2356	Harsha	M	1999-09-10	harsha21@umd.edu

Registers:

customerEmail	employeeEmail	paymentId	date
gnapika9@umd.edu	Pollack1@terpmail.umd.edu	zz953	2024-02-25
harsha21@umd.edu	cnaggard@terpmail.umd.edu	bh320	2024-02-26

BowlingAlley:

bowlingAlleyId	bowlingAlleyLane	bowlingAlleyStatus	bowlingAlleyHighScore	customerEmail
B511	B2	Occupied	101	sriyeshk@umd.edu
B540	B3	Occupied	183	vamshi1168@gmail.com
B558	B4	Available	153	NULL
B560	B5	Available	169	NULL
B580	B6	Occupied	166	gnapika9@umd.edu
B585	B6	Available	166	NULL
B597	B1	Occupied	201	harsha21@umd.edu