University of British Columbia, Vancouver
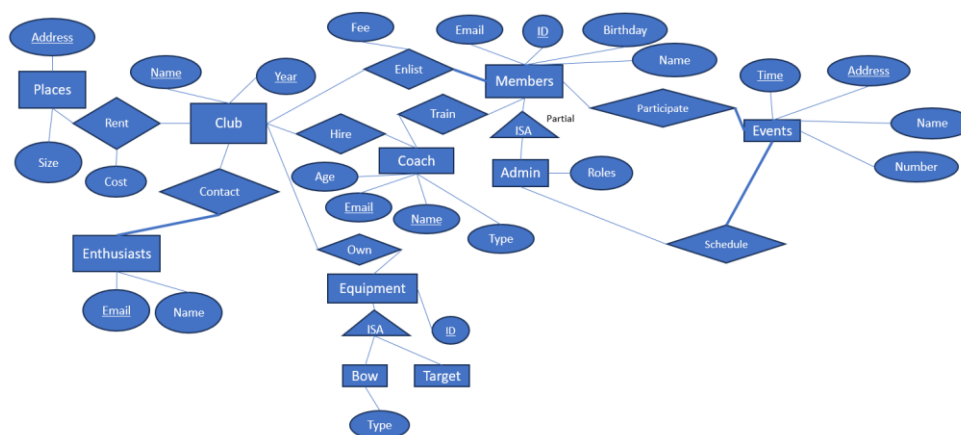Department of Computer Science

1. Project Description:

Our project, using archery club as an example, aims to provide a meaningful template represented as database and a website that helps clubs to manage their enrolment process, newsletter subscriptions, coach hiring, events scheduling, costs & income balance, relevant rents, and equipment purchases and maintenance. It will also provide functionality to select administrators from the active members who will be given roles in updating the club database or handling relevant tasks such as scheduling events or managing coaches. By the end of Dec.1ˢᵗ, our team successfully implemented a working website system containing several front-end & back-end parts and well-designed database using our knowledge about PHP, HTML, and SQL. In detail, we realized the parts for member registration & enthusiast signup page to represent the club enrollment system. We also carefully implemented the events page & give members various options to query events to encourage participation and involvement. Finally and most importantly, we gave huge focuses on the admin page which now can schedule, remove, and update events as well as accessing private information about members and coaches.

2. Description of Final Schema:

2.1 Changes Made Regarding to the ER Diagram & Schema:

i. Remove ISA relationship from 'Events' as it does not contain additional attributes as suggested by our TA; in addition, we added a new attribute 'event_name' to identify events.
ii. Remove the relationship set 'Buy' as we find this set irrelevant to our club system.
iii. Remove the relationship set 'Manage' as it's an abstract relation set whose functionality is already represented in detail by other relationship set such as 'Schedule'.
iv. Remove the total participation on the 'Club' side as the club can have no member at the start of each club year/secession.
v. Rename the relationship set 'Connect' to 'Contact' as 'Connect' is a keyword in the database system.
vi. Remove the attribute logo from the club for memory concerns.
vii. Adding an attribute age to 'Coach' in order to perform Aggregated queries.
viii. Adding event_number to Event to fulfill the requirement for query 'Update'.

Here's a copy of the updated ER diagram:

3. Schema:

In the following parts, we will use **Bold** to denote FOREIGN KEY & <u>Underline</u> to denote PRIMARY KEY.

1) A List of Tables for Entities:
   - Places (<u>Places_Address</u>: VARCHAR, Places_Size: INTEGER)
   - Clubs (<u>Club_Name</u>: VARCHAR, <u>Club_Year</u>: INTEGER)
   - Enthusiasts (<u>En_Email</u>: VARCHAR, En_Name: VARCHAR)
   - Members (<u>Member_ID</u>: VARCHAR, Member_Birthday: VARCHAR, Member_Email: VARCHAR, Member_Name: VARCHAR)
   - Admin (Admin_Roles: VARCHAR, **Member_ID**: VARCHAR)
   - Events (<u>Event_Time</u>: VARCHAR, <u>Event_Address</u>: VARCHAR, Event_Name: VARCHAR, Event_Number: INTEGER)
   - Coach (<u>Coach_Email</u>: VARCHAR, <u>Coach_Name</u>: VARCHAR, Coach_Age: INTEGER, Coach_Type: VARCHAR)
   - Equipment (<u>Equipment_ID</u>: VARCHAR)
   - Bow (Bow_Type: VARCHAR, **Equipment_ID**: VARCHAR)
   - Target (**Equipment_ID**: VARCHAR)

Note that we are using Foreign keys to denote ISA relations because all ISA relations in our ER diagram are partial & disjoint.

2) A list of Tables for Relations:
   - Rent1 (**Places_Address**: VARCHAR, Rent_Cost: INTEGER)
   - Rent2 (**Places_Address**: VARCHAR, **Club_Name**: VARCHAR, **Club_Year**: INTEGER)
   - Contact (**En_Email**: VARCHAR, **Club_Name**: VARCHAR, **Club_Year**: INTEGER)
   - Enlist1 (**Club_Name**: VARCHAR, **Club_Year**: INTEGER, Fees: INTEGER)
   - Enlist2 (**Club_Name**: VARCHAR, **Club_Year**: INTEGER, **Member_ID**: VARCHAR)
   - Hire (**Club_Name**: VARCHAR, **Club_Year**: INTEGER, **Coach_Email**: VARCHAR, **Coach_Name**: VARCHAR)
   - Own (**Equipment_ID**: VARCHAR, **Club_Name**: VARCHAR, **Club_Year**: INTEGER)
   - Train (**Coach_Email**: VARCHAR, **Coach_Name**: VARCHAR, **Member_ID**: VARCHAR)
   - Participate (**Member_ID**: VARCHAR, **Event_Time**: VARCHAR, **Event_Address**: VARCHAR)
   - Schedule (**Member_ID**: VARCHAR, **Event_Time**: VARCHAR, **Event_Address**: VARCHAR)

3) Data in Each Schema:

Schema Name:	Data:
Places	**Places** places_Address places_Size 1234 Main St 200 333 W Broadway 200 673 W 27th Ave 120 2221 E 33rd Ave 145 1433 Cambie St 300
Clubs	**Clubs** club_name club_year UBC Archery Club 2009 UBC Archery Club 2010 UBC Archery Club 2023 UBC Archery Club 2016 UBC Archery Club 2021

Enthusiasts

Enthusiasts

En_email	En_name
linuschen28@gmail.com	Linus Chen
kunglim@gmail.com	Kung Lim
edwardwang915@gmail.com	Edward Wang
johndoe@hotmail.com	John Doe
hotdogeater@student.ubc.ca	Alex Smith

Members

Members

member_id	member_Birthday	member_email	member_name
"001"	2001-10-11	jacobmartin@gmail.com	Jacob Martin
"002"	2003-11-28	leonidasmax11@student.ubc.ca	Leonidas Max
"101"	1999-02-01	marklee3@yahoo.ca	Mark Lee
"026"	2001-10-11	michaeljackson@gmail.com	Jackson Michael
"010"	2005-07-30	ccheung222@gmail.com	Carson Cheung
"004"	2000-12-25	santasanderson@gmail.com	Santa Sanderson
"000"	2000-12-25	Batman@gmail.com	Batman

Admin

Admin

admin_Roles	member_id
President	"001"
Vice President	"002"
Treasurer	"010"
Equipment Manager	"004"
Event Manager	"026"

Events

Events

event_time	event_address	event_number	event_name
2023-10-31 @ 7PM	1234 Main St	1	Shootout
2023-11-09 @ 6PM	1234 Main St	2	Shootout
2023-12-23 @ 5PM	673 W 27th Ave	3	Meeting
2023-10-27 @ 11AM	2221 E 33rd Ave	4	Meeting
2023-01-09 @ 7PM	333 W Broadway	5	Meeting

Coach

Coach

coach_email	coach_name	coach_age	coach_type
coachmike@gmail.com	Mike Krasinski	20	Archer
archerywithalex@gmail.com	Alex Chou	30	Archer
emcallister@student.ubc.ca	Evan McAllister	40	Generalist
emilybow@shaw.ca	Emily Bowman	40	Generalist
coachjosephng@ubc.ca	Joseph Ng	45	Generalist

Equipment

Equipment

equipment_id
B01
T12
T20
B02
T11
B03
B05
B04
T01
T06

Bow

Bow

bow_Type	equipment_id
Recurve bow	B01
Recurve bow	B02
Compound bow	B05
Longbow	B04
Recurve bow	B03

Target

Targets

equipment_id
T01
T06
T20
T11
T12

Rent1

Rent1

rent_Cost	places_Address
120	1234 Main St

Rent2

Rent2

club_name	club_year	places_Address
UBC Archery Club	2009	1234 Main St
UBC Archery Club	2010	1234 Main St
UBC Archery Club	2023	1234 Main St
UBC Archery Club	2016	1234 Main St
UBC Archery Club	2021	1234 Main St

Contact

En_email	club_name	club_year
linuschen28@gmail.com	UBC Archery Club	2009
kunglim@gmail.com	UBC Archery Club	2010
edwardwang915@gmail.com	UBC Archery Club	2023
johndoe@hotmail.com	UBC Archery Club	2016
hotdogeater@student.ubc.ca	UBC Archery Club	2021

Enlist1

club_name	club_year	Fees
UBC Archery Club	2009	20
UBC Archery Club	2010	75
UBC Archery Club	2023	20
UBC Archery Club	2016	60
UBC Archery Club	2021	90

Enlist2

club_name	club_year	member_id
UBC Archery Club	2009	"001"
UBC Archery Club	2010	"002"
UBC Archery Club	2023	"101"
UBC Archery Club	2016	"026"
UBC Archery Club	2021	"010"

Hire

club_name	club_year	coach_email	coach_name
UBC Archery Club	2009	coachmike@gmail.com	Mike Krasinski
UBC Archery Club	2010	archerywithalex@gmail.com	Alex Chou
UBC Archery Club	2023	emcallister@student.ubc.ca	Evan McAllister
UBC Archery Club	2016	emilybow@shaw.ca	Emily Bowman
UBC Archery Club	2021	coachjosephng@ubc.ca	Joseph Ng

Own

equipment_id	club_name	club_year
B01	UBC Archery Club	2009
T12	UBC Archery Club	2010
T20	UBC Archery Club	2023
B02	UBC Archery Club	2016
T11	UBC Archery Club	2021
B03	UBC Archery Club	2023
B05	UBC Archery Club	2010
B04	UBC Archery Club	2023
T01	UBC Archery Club	2009
T06	UBC Archery Club	2016

Train

coach_email	coach_name	member_id
coachmike@gmail.com	Mike Krasinski	"001"
archerywithalex@gmail.com	Alex Chou	"002"
emcallister@student.ubc.ca	Evan McAllister	"101"
emilybow@shaw.ca	Emily Bowman	"026"
coachjosephng@ubc.ca	Joseph Ng	"010"

Participate

member_id	event_time	event_address
"001"	2023-10-31 @ 7PM	1234 Main St
"002"	2023-11-09 @ 6PM	1234 Main St
"101"	2023-12-23 @ 5PM	673 W 27th Ave
"026"	2023-10-27 @ 11AM	2221 E 33rd Ave
"010"	2023-01-09 @ 7PM	333 W Broadway
"000"	2023-10-31 @ 7PM	1234 Main St
"000"	2023-11-09 @ 6PM	1234 Main St
"000"	2023-12-23 @ 5PM	674 W 27th Ave
"000"	2023-10-27 @ 11AM	2222 E 33rd Ave
"000"	2023-01-09 @ 7PM	334 W Broadway

Schedule	Schedule		
	member_id	event_time	event_address
	'001"	2023-10-31 @ 7PM	1234 Main St
	'002"	2023-11-09 @ 6PM	1234 Main St
	'004"	2023-12-23 @ 5PM	674 W 27th Ave
	'026"	2023-10-27 @ 11AM	2222 E 33rd Ave
	'010"	2023-01-09 @ 7PM	334 W Broadway

4. SQL Queries:

Queries	Location in Code
INSERT	In Admin_Page.php: HTML: 63 – 72; PHP: 74 – 88, 503 – 516, 327 – 373.
DELETE	In Admin_Page.php: HTML: 90 – 96; PHP: 98 – 111, 503 – 516, 375 – 406.
UPDATE	In Admin_Page.php: HTML: 113 – 122; PHP: 124 – 136, 503 – 516, 408 – 459.
DIVISION:	In Admin_Page.php: HTML: 138 – 143; PHP: 145 – 150, 518 – 532, 461 – 480.
Aggregation with Group By	In Admin_Page.php: HTML: 152 – 156; PHP: 158 – 163, 518 – 532, 482 – 500.
SELECTION:	In Events.php: HTML: 62 – 70; PHP: 72 – 85, 524 – 542, 279 – 320.
PROJECTION:	In Events.php: HTML: 87 – 96; PHP: 98 – 103, 524 – 542, 333 – 445.
JOIN	In Events.php: HTML: 105 – 112; PHP: 114 – 124, 524 – 542, 450 – 469.
Aggregation with Having	In Events.php: HTML: 126 – 131; PHP: 133 – 138, 524 – 542, 471 – 495.
Nested Aggregation with Group By	In Events.php: HTML: 140 – 145; PHP: 147 – 152, 524 – 542, 497 – 522.

5. Screenshots:

Query Name	Before	After
INSERT	Admin Number: 001 Event Name: Shootout Event Time: 2023-11-1 @ 7PM Event Number: 9 Event Location: 1234 Main St [Insert] MISSING INPUT VALS ACTION SUCCEEDED **Retrieved data from table Events:** Name Time Location ID Meeting 2023-10-31 @ 7PM 1234 Main St 8 Shootout 2023-11-09 @ 6PM 1234 Main St 2 Meeting 2023-12-23 @ 5PM 673 W 27th Ave 3 Meeting 2023-10-27 @ 11AM 2221 E 33rd Ave 4 Meeting 2023-01-09 @ 7PM 333 W Broadway 5 Shootout 2023-11-30 @ 7PM 1234 Main St 6 Shootout 2023-11-09 @ 6PM 1235 Main St 7	**Create New Events:** Admin Number: Ex: 001 OR 002 OR 003 Event Name: Meeting OR Shootout Event Time: Ex: 2023-10-31 @ 7PM Event Number: Ex: 1 OR 2 OR 3 OR 4 Event Location: Ex: 1234 Main St [Insert] ACTION SUCCEEDED ACTION SUCCEEDED ACTION SUCCEEDED **Retrieved data from table Events:** Name Time Location ID Meeting 2023-10-31 @ 7PM 1234 Main St 8 Shootout 2023-11-09 @ 6PM 1234 Main St 2 Meeting 2023-12-23 @ 5PM 673 W 27th Ave 3 Meeting 2023-10-27 @ 11AM 2221 E 33rd Ave 4 Meeting 2023-01-09 @ 7PM 333 W Broadway 5 Shootout 2023-11-1 @ 7PM 1234 Main St 9 Shootout 2023-11-30 @ 7PM 1234 Main St 6 Shootout 2023-11-09 @ 6PM 1235 Main St 7
DELETE	**Delete Events:** Event Time: 2023-11-1 @ 7PM Event Location: 1234 Main St [Delete] MISSING INPUT VALS ACTION SUCCEEDED **Retrieved data from table Events:** Name Time Location ID Meeting 2023-10-31 @ 7PM 1234 Main St 8 Shootout 2023-11-09 @ 6PM 1234 Main St 2 Meeting 2023-12-23 @ 5PM 673 W 27th Ave 3 Meeting 2023-10-27 @ 11AM 2221 E 33rd Ave 4 Meeting 2023-01-09 @ 7PM 333 W Broadway 5 Shootout 2023-11-1 @ 7PM 1234 Main St 9 Shootout 2023-11-30 @ 7PM 1234 Main St 6 Shootout 2023-11-09 @ 6PM 1235 Main St 7	**Delete Events:** Event Time: Ex: 2023-10-31 @ 7PM Event Location: Ex: 1234 Main St [Delete] ACTION SUCCEEDED ACTION SUCCEEDED **Retrieved data from table Events:** Name Time Location ID Meeting 2023-10-31 @ 7PM 1234 Main St 8 Shootout 2023-11-09 @ 6PM 1234 Main St 2 Meeting 2023-12-23 @ 5PM 673 W 27th Ave 3 Meeting 2023-10-27 @ 11AM 2221 E 33rd Ave 4 Meeting 2023-01-09 @ 7PM 333 W Broadway 5 Shootout 2023-11-30 @ 7PM 1234 Main St 6 Shootout 2023-11-09 @ 6PM 1235 Main St 7

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UPDATE	**Update Events Name & Number by Time & Location:** New Event Name: `Shootout` New Event Number: `100` Event Time: `2023-10-31 @ 7PM` Event Location: `1234 Main St` Update MISSING INPUT VALS ACTION SUCCEEDED **Retrieved data from table Events:**	**Update Events Name & Number by Time & Location:** New Event Name: `Meeting OR Shootout` New Event Number: `Ex: 1 OR 2 OR 3 OR 4` Event Time: `Ex: 2023-10-31 @ 7PM` Event Location: `Ex: 1234 Main St` Update ACTION SUCCEEDED ACTION SUCCEEDED **Retrieved data from table Events:**

Retrieved data from table Events (left):

Name	Time	Location	ID
Meeting	2023-10-31 @ 7PM	1234 Main St	8
Shootout	2023-11-09 @ 6PM	1234 Main St	2
Meeting	2023-12-23 @ 5PM	673 W 27th Ave	3
Meeting	2023-10-27 @ 11AM	2221 E 33rd Ave	4
Meeting	2023-01-09 @ 7PM	333 W Broadway	5
Shootout	2023-11-30 @ 7PM	1234 Main St	6
Shootout	2023-11-09 @ 6PM	1235 Main St	7

Retrieved data from table Events (right):

Name	Time	Location	ID
Shootout	2023-10-31 @ 7PM	1234 Main St	100
Shootout	2023-11-09 @ 6PM	1234 Main St	2
Meeting	2023-12-23 @ 5PM	673 W 27th Ave	3
Meeting	2023-10-27 @ 11AM	2221 E 33rd Ave	4
Meeting	2023-01-09 @ 7PM	333 W Broadway	5
Shootout	2023-11-30 @ 7PM	1234 Main St	6
Shootout	2023-11-09 @ 6PM	1235 Main St	7

SELECTION	**Find Events By Name, Time, and Location** Event Name: `Shootout` Event Time: `2023-10-31 @ 7PM` Event Location: `1234 Main St` Select	**Find Events By Name, Time, and Location** Event Name: `Meeting OR Shootout` Event Time: `Ex: 2023-10-31 @ 7PM` Event Location: `Ex: 1234 Main St` Select **Retrieved data from table Events:**

Retrieved data from table Events (right):

Name	Time	Location
Shootout	2023-10-31 @ 7PM	1234 Main St

PROJECTION	**Find ALL Events By Name, Time, Location, and Number** Event Name: ☐ Event Time: ☐ Event Location: ☐ Event Number: ☐ Project	**Find ALL Events By Name, Time, Location, and Number** Event Name: ☑ Event Time: ☑ Event Location: ☐ Event Number: ☐ Project **Retrieved data from table Events:**

Retrieved data from table Events (right):

Name	Time
Shootout	2023-10-31 @ 7PM
Shootout	2023-11-09 @ 6PM
Meeting	2023-12-23 @ 5PM
Meeting	2023-10-27 @ 11AM
Meeting	2023-01-09 @ 7PM
Shootout	2023-11-30 @ 7PM
Shootout	2023-11-09 @ 6PM

JOIN	**Find the Registered Events by ID:** Member ID `002` submit	**Find the Registered Events by ID:** Member ID `Ex: 001 OR 002 OR 003` submit **Retrieved data from table Events:**

Retrieved data from table Events (right):

Name	Time	Location
Shootout	2023-11-09 @ 6PM	1234 Main St

Aggregation GROUP BY	**Finding Youngest Coach By Type:** submit	**Finding Youngest Coach By Type:** submit ACTION SUCCEEDED **Retrieved data from table Coach:**

Retrieved data from table Coach (right):

Type	Age
Archer	20
Generalist	40

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Aggregation HAVING	**Find All the Events that Have Participants:** submit	**Find All the Events that Have Participants:** submit **Retrieved data from table Events, Participate:** Name · Time · Location · Count Meeting 2023-12-23 @ 5PM 673 W 27th Ave 2 Meeting 2023-10-27 @ 11AM 2221 E 33rd Ave 2 Shootout 2023-10-31 @ 7PM 1234 Main St 2 Shootout 2023-11-09 @ 6PM 1234 Main St 2 Meeting 2023-01-09 @ 7PM 333 W Broadway 2
Nested Aggregation with GROUP BY	**Maximum Participants for each Event Location** submit	**Maximum Participants for each Event Location** submit **Retrieved data from table Events:** Location · Max_Attendee_Count 2221 E 33rd Ave 2 333 W Broadway 2 1234 Main St 4 673 W 27th Ave 2
Division	**Find the members who have registered in all events** Query	**Find the members who have registered in all events** Query ACTION SUCCEEDED **Retrieved data from table Members:** ID Name Birthday Email 000 Batman 2000-12-25 Batman@gmail.com

Reference:

1. Took reference from Sample PHP created by 304 TA.
2. Used img from 1. https://upload.wikimedia.org/wikipedia/commons/2/23/Moon_Bow_and_Arrow.svg to represent our club logo.
3. Used img from 2. https://upload.wikimedia.org/wikipedia/commons/8/88/Map_marker.svg to decorate our footer section.
4. Used img https://www.iconpacks.net/free-icon/blue-phone-7152.html for mobile & email icon in the footer section.