University of British Columbia, Vancouver
Department of Computer Science

CPSC 304 Project Cover Page

Milestone #: 2

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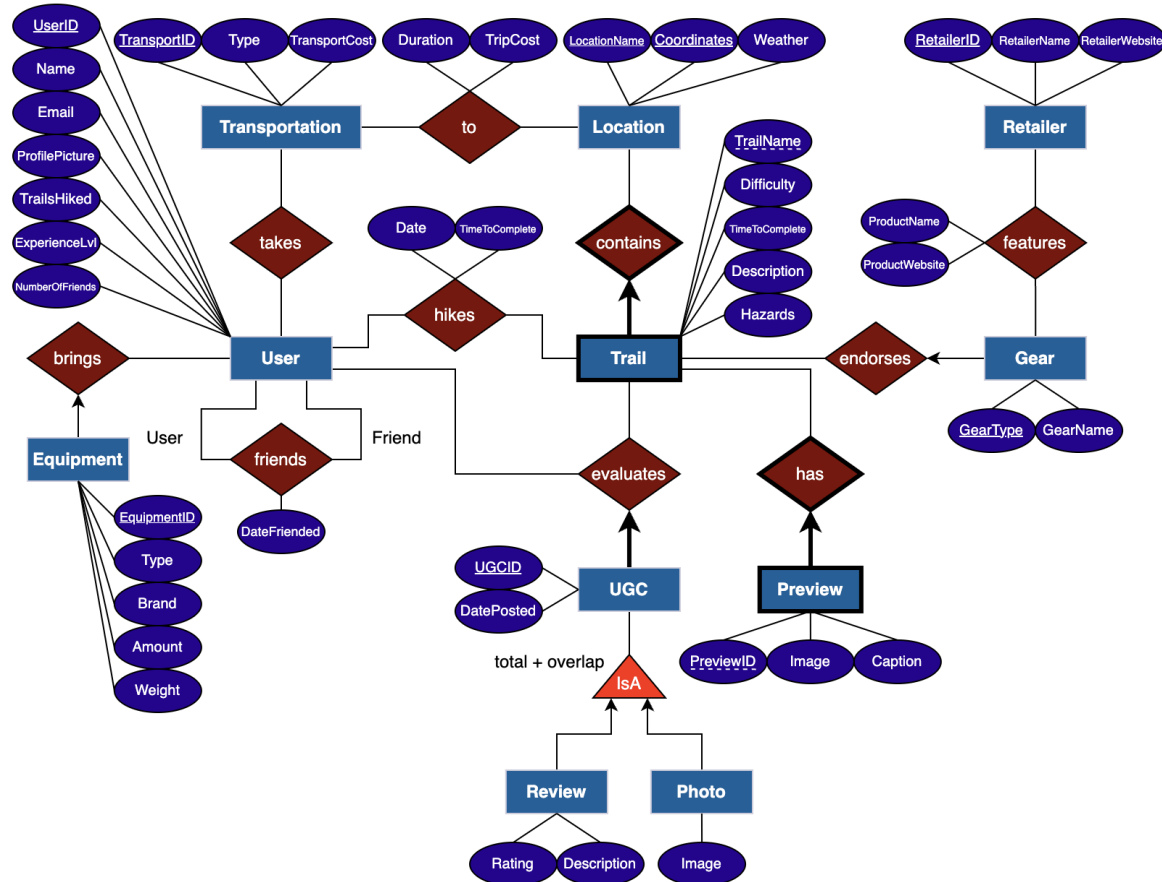| Name	Student Number	CS Alias (Userid)	Preferred E-mail Address
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By typing our names and student numbers in the above table, we certify that the work in the attached assignment was performed solely by those whose names and student IDs are included 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

Project Summary

Our project is a hiking companion app which allows users to discover and explore trails near them. Users will be able to track their personal hiking history, connect with friends, read and write reviews, and learn information about different trails to better prepare for them.

ER Diagram

Changes from original ER Diagram from Milestone 1:
- (Entities) Changed plural entities ("Reviews", "Photos") to use their singular forms for consistency
- (Renaming) ProfilePic→ProfilePicture, #ofFriends→NumberOfFriends, CompanyName→RetailerName, Website→RetailerWebsite (for clarity)
- (Transportation) rename Cost attribute to TranportCost to differentiate flat cost for a type of transportation and the specific trip cost to a location
- (Gear) removed Amount attribute to simplify the interface
- (Gear) added GearName attribute to describe the name of the gear
- (TransportationToLocation) made it a many-to-many relationship instead of one-to-one
- (TransportationToLocation) removed Directions attribute due to lack of suitable data type
- (TransportationToLocation) added TripCost attribute
- (RetailerFeaturesGear) made it a many-to-many relationship instead of one-to-one
- (Insights) deleted weak entity converting Hazard child entity into an attribute of the Trail entity and Preview child entity into a weak entity of the Trail entity with added PreviewID attribute

Schema

Entities

User(<u>UserID</u>: INTEGER, Name: VARCHAR(50), Email: VARCHAR(320), ProfilePicture: BLOB, TrailsHiked: INTEGER, ExperienceLvl: INTEGER, NumberOfFriends: INTEGER)

Equipment(<u>EquipmentID</u>: INTEGER, **UserID**: INTEGER, Type: VARCHAR(50), Brand: VARCHAR(50), Amount: INTEGER, Weight: FLOAT)

Transportation(<u>TransportID</u>: INTEGER, Type: VARCHAR(50), TranportCost: FLOAT)

Retailer(<u>RetailerID</u>: INTEGER, RetailerName: VARCHAR(50), RetailerWebsite: VARCHAR(100))

Gear(<u>GearType</u>: VARCHAR(50),**LocationName**: VARCHAR(50), **Coordinates**: SDO_GEOMETRY, **TrailName**: VARCHAR(50), GearName: VARCHAR(50))

Location(<u>LocationName</u>: VARCHAR(50), <u>Coordinates</u>: SDO_GEOMETRY, Weather: VARCHAR(30))

Trail(<u>**LocationName**</u>: VARCHAR(50), <u>**Coordinates**</u>: SDO_GEOMETRY, <u>TrailName</u>: VARCHAR(50), Difficulty: INTEGER, TimeToComplete: TIME, Description: VARCHAR(5000), Hazards: VARCHAR(100))

     LocationName, Coordinates – NOT NULL

Preview(<u>**LocationName**</u>: VARCHAR(50), <u>**Coordinates**</u>: SDO_GEOMETRY, <u>**TrailName**</u>: VARCHAR(50), <u>PreviewID</u>: INTEGER, Image: BLOB, Caption: VARCHAR(100))

UGC(<u>UGCID</u>: INTEGER, **UserID**: INTEGER, **LocationName**: VARCHAR(50), **Coordinates**: SDO_GEOMETRY, **TrailName**: VARCHAR(50), DatePosted: DATE)

     UserID, LocationName, Coordinates, TrailName – NOT NULL

- Review(<u>**UGCID**</u>: INTEGER, Rating: INTEGER, Description: VARCHAR(500))
- Photo(<u>**UGCID**</u>: INTEGER, Image: BLOB)

Relationships

Friends(<u>**UserID**</u>: INTEGER, <u>**FriendID**</u>: INTEGER)

TransporationToLocation(<u>**TransportID**</u>: INTEGER, <u>**LocationName**</u>: VARCHAR(50), <u>**Coordinates**</u>: SDO_GEOMETRY, Duration: TIME, TripCost: FLOAT)

UserHikesTrail(<u>**UserID**</u>: INTEGER, <u>**LocationName**</u>: VARCHAR(50), <u>**Coordinates**</u>: SDO_GEOMETRY, <u>**TrailName**</u>: VARCHAR(50), Date: DATE, TimeToComplete: TIME)

RetailerFeaturesGear(<u>**RetailerID**</u>: INTEGER, <u>**GearType**</u>: VARCHAR(50), ProductName: VARCHAR(50), ProductWebsite: VARCHAR(100))

Functional Dependencies (FDs)

User(UID, N, E, PP, TH, EX, NOF)

        UID $\to$ N, E

        TH $\to$ EX

        E $\to$ PP, TH

        N, E $\to$ NOF

Equipment(EID, UID, T, B, A, WGT)

        UID $\to$ A

        EID $\to$ T, B

        T, B $\to$ WGT

Transportation(TID, T, TACS)

        TID $\to$ T, TACS

Retailers(RID, RN, RW)

        RID $\to$ RN

        RN $\to$ RW

Gear(GT, LN, CORD, TN, GN)

        GT $\to$ GN

Location(LN, CORD, W)

        LN, CORD $\to$ W

Trail(LN, CORD, TN, DIF, TTC, DES, HAZ)

        LN, CORD, TN $\to$ DES, DIF, TTC

        DIF $\to$ TTC

Preview(LN, CORD, TN, PID, IMG, CAP)

        PID $\to$ IMG, CAP

UGC(UGCID, UID, LN, CORD, TN, DP)

        UGCID $\to$ UID, LN, CORD, TN, DP

Review(UGCID, RAT, RDESC)

    UGCID → RAT, RDESC

Photo(UGCID, PIMG)

    A two attribute entity, no FDs.

Friends(UID, FID)

    A two attribute relationship, no FDs.

TransportationToLocation(TID, LN, CORD, DUR, TICS)

    TID, LN, CORD → DUR, TICS

UserHikesTrail(UID, LN, CORD, TN, D, TTC)

    UID, LN, CORD, TN → TTC

RetailerFeaturesGear(RID, GT, PN, PW)

    RID, GT → PN, PW

Normalization

User(UID, N, E, PP, TH, EX, NOF)

       UID → N, E

       TH → EX

       E → PP, TH

       N, E → NOF

Key: UID^+ = {UID, N, E, PP, TH, EX, NOF}

       UID → N, E is in BCNF

       TH → EX is not in BCNF, so decompose

USER1(TH, EX), USER2(UID, N, E, PP, TH, NOF)

       E → PP, TH is not in BCNF, so decompose

USER3(E, PP, TH), USER4(UID, N, E, NOF)

       N, E → NOF is not in BCNF, so decompose

USER5(N, E, NOF) USER6(UID, N, E)

Final Decomposition: USER1(TH, EX), USER3(E, PP, TH) , USER5(N, E, NOF), USER6(UID, N, E)

```
User1(TrailsHiked: INTEGER, ExperienceLvl: INTEGER)

User3(Email: VARCHAR(320), ProfilePicture: BLOB, TrailsHiked: INTEGER)

User5(Name: VARCHAR(50), Email: VARCHAR(320), NumberOfFriends: INTEGER)

User6(UserID: INTEGER, Name: VARCHAR(50), Email: VARCHAR(320))
```

Equipment(EID, UID, T, B, A, WGT)

       UID → A

       EID → T, B

       T, B → WGT

UID^+ = {UID, A}

EID^+ = {EID, T, B, WGT}

TB^+ = {T, B, WGT}

Key: {UID, EID}$^+$ = {EID, UID, A, T, B, A, WGT}

> UID → A is not in BCNF, so decompose

Equipment1(<u>UID</u>, A), Equipment2(EID, UID, T, B, WGT)

> EID → T, B is not in BCNF, so decompose

Equipment3(<u>EID</u>, T, B), Equipment4(EID, UID, WGT)

> T, B → WGT is not in BCNF, so decompose
>
> We do not have T or B, so transpose
>
> EID → T, B, so through transitivity, EID → WGT, which is still not in BCNF, so decompose

Equipment5(<u>EID</u>, WGT), Equipment6(<u>EID</u>, **UID**)

Final Decomposition: Equipment1(<u>UID</u>, A), Equipment3(<u>EID</u>, T, B), Equipment5(<u>EID</u>, WGT), Equipment6(<u>EID</u>, **UID**)

```
Equipment1(UserID: INTEGER, Amount: INTEGER)

Equipment3(EquipmentID: INTEGER, Type: VARCHAR(50), Brand: VARCHAR(50))

Equipment5(EquipmentID: INTEGER, Weight: FLOAT)

Equipment6(EquipmentID: INTEGER, UserID: INTEGER)
```


Transportation(TID, T, TACS)

> TID → T, TACS

Key: TID$^+$ = {TID, LN, CORD, T}

Already in BCNF

```
Transportation(TransportID: INTEGER, Type: VARCHAR(50), TranportCost: FLOAT)
```


Retailers(RID, RN, RW)

> RID → RN
>
> RN → RW

Key: RID$^+$ = {RID, RN, RW}

　　　　RN$^+$ = {RN, RW}

　　　　RID → RN in BCNF

　　　　RN → RW not in BCNF, so decompose

Retailers1(<u>RN</u>, RW), Retailers2(<u>RID</u>, RN)

Final Decomposition: Retailers1(<u>RN</u>, RW), Retailers2(<u>RID</u>, RN)

`Retailer1(`<u>`RetailerName`</u>`: VARCHAR(50, RetailerWebsite: VARCHAR(100))`

`Retailer2(`<u>`RetailerID`</u>`: INTEGER, RetailerName: VARCHAR(50))`

Gear(GT, LN, CORD, TN, GN)

　　　　GT → GN

Key: {GT, LN, CORD, TN, GN}

　　　　GT$^+$ = {GT, GN}

　　　　GT → GN not in BCNF, so decompose

Gear1(<u>GT,</u> GN), Gear2(<u>GT</u>, **LN**, **CORD**, **TN**)

Final Decomposition: Gear1(<u>GT,</u> GN), Gear2(<u>GT</u>, **LN**, **CORD, TN**)

`Gear1(`<u>`GearType`</u>`: VARCHAR(50), GearName: VARCHAR(50))`

`Gear2(`<u>`GearType`</u>`: VARCHAR(50),`**`LocationName`**`: VARCHAR(50),` **`Coordinates:`**
`SDO_GEOMETRY,` **`TrailName:`** `VARCHAR(50))`

Location(LN, CORD, W)

　　　　LN, CORD → W

{LN, CORD}$^+$ = {LN, CORD, W}

Already in BCNF

`Location(`<u>`LocationName`</u>`: VARCHAR(50),` <u>`Coordinates`</u>`: SDO_GEOMETRY, Weather:`
`VARCHAR(30))`

Trail(LN, CORD, TN, DIF, TTC, DES, HAZ)

      LN, CORD, TN → DIF, TTC, DES

      DIF → TTC

Key: $\{LN, CORD, TN, HAZ\}^+ = \{LN, CORD, TN, DIF, TTC, DES, HAZ\}$

      $\{LN, CORD, TN\}^+ = \{LN, CORD, TN, DIF, TTC, DES\}$

      $DIF^+ = \{DIF, TTC\}$

      LN, CORD, TN → DIF, TTC, DES not in BCNF, so decompose

      Trail1(LN, CORD, TN, DIF, TTC, DES), Trail2(LN, CORD, TN, HAZ)

      No more violations, but missing DIF → TTC

Final Decomposition: Trail1(<u>LN</u>, <u>CORD</u>, <u>TN</u>, DES, DIF, TTC), Trail2(<u>LN</u>, <u>CORD</u>, <u>TN</u>, HAZ), Trail3(<u>DIF</u>, TTC)

```
Trail1(LocationName: VARCHAR(50), Coordinates: SDO_GEOMETRY, TrailName:
VARCHAR(50), Difficulty: INTEGER, TimeToComplete: TIME, Description:
VARCHAR(5000))

Trail2(LocationName: VARCHAR(50), Coordinates: SDO_GEOMETRY, TrailName:
VARCHAR(50), Hazards: VARCHAR(100))

Trail3(Difficulty: INTEGER, TimeToComplete: TIME)
```

Preview(LN, CORD, TN, PID, IMG, CAP)

      PID → IMG, CAP

      LN, CORD, TN → PID

$PID^+ = \{PID, IMG, CAP\}$

$\{LN, CORD, TN\}^+ = \{LN, CORD, TN, PID, IMG, CAP\}$

      PID → IMG, CAP not in BCNF, so decompose

      Preview1(PID, IMG, CAP) Preview2(LN, CORD, TN, PID)

      LN, CORD, TN → PID is in BCNF

```
Preview1(PreviewID: INTEGER, Image: BLOB, Caption: VARCHAR(100))
```

```
Preview2(LocationName: VARCHAR(50), Coordinates: SDO_GEOMETRY, TrailName:
VARCHAR(50), PreviewID: INTEGER)
```

UGC(UGCID, UID, LN, CORD, TN, DP)

      UGCID → UID, LN, CORD, TN, DP

UGCID$^+$ = {UID, LN, CORD, TN, DP}

Already in BCNF

```
UGC(UGCID: INTEGER, UserID: INTEGER, LocationName: VARCHAR(50), Coordinates:
SDO_GEOMETRY, TrailName: VARCHAR(50), DatePosted: DATE)
```

Review(UGCID, RAT, RDESC)

      UGCID → RAT, RDESC

UGCID$^+$ = {RAT, RDESC}

Already in BCNF

```
Review(UGCID: INTEGER, Rating: INTEGER, Description: VARCHAR(500))
```

Photo(UGCID, PIMG)

Two attribute entity so already in BCNF

```
Photo(UGCID: INTEGER, Image: BLOB)
```

Friends(UID, FID)

Two attribute relationship so already in BCNF

```
Friends(UserID: INTEGER, FriendID: INTEGER)
```

TransportationToLocation(TID, LN, CORD, D, TICS)

      TID, LN, CORD → D, TICS

{TID, LN, CORD}$^+$ = {D, TICS}

Already in BCNF

```
TransporationToLocation(TransportID: INTEGER, LocationName: VARCHAR(50),
Coordinates: SDO_GEOMETRY, Duration: TIME, TripCost: FLOAT)
```


UserHikesTrail(UID, LN, CORD, TN, D, TTC)

UID, LN, CORD, TN → TTC

Already in BCNF

```
UserHikesTrail(UserID: INTEGER, LocationName: VARCHAR(50), Coordinates:
SDO_GEOMETRY, TrailName: VARCHAR(50), Date: DATE, TimeToComplete: TIME)
```


RetailerFeaturesGear(RID, GT, PN, PW)

RID, GT → PN, PW

Already in BCNF

```
RetailerFeaturesGear(RetailerID: INTEGER, GearType: VARCHAR(50), ProductName:
VARCHAR(50), ProductWebsite: VARCHAR(100))
```

SQL DDL

Entities

```sql
CREATE TABLE User1 (
      TrailsHiked        INTEGER            DEFAULT 0,
      ExperienceLvl      INTEGER            DEFAULT 0,
      PRIMARY KEY (TrailsHiked)
);
CREATE TABLE User3 (
      Email              VARCHAR(320)       PRIMARY KEY,
      ProfilePicture     BLOB,
      TrailsHiked        INTEGER            DEFAULT 0
);
CREATE TABLE User5 (
      Name               VARCHAR(50),
      Email              VARCHAR(320),
      NumberOfFriends    INTEGER            DEFAULT 0,
      PRIMARY KEY (Name, Email)
);
CREATE TABLE User6 (
      UserID             INTEGER,
      Name               VARCHAR(50),
      Email              VARCHAR(320),
      PRIMARY KEY (UserID, Name, Email)
);


CREATE TABLE Equipment1 (
      UserID:            INTEGER            PRIMARY KEY,
      Amount             INTEGER,
      FOREIGN KEY (UserID) REFERENCES User
            ON DELETE CASCADE
);
CREATE TABLE Equipment3 (
      EquipmentID        INTEGER            PRIMARY KEY,
      Type               VARCHAR(50),
      Brand              VARCHAR(50)
);
CREATE TABLE Equipment5 (
      EquipmentID        INTEGER            PRIMARY KEY,
```

```sql
        Weight              FLOAT
);
CREATE TABLE Equipment6 (
        EquipmentID         INTEGER             PRIMARY KEY,
        UserID:             INTEGER,
        FOREIGN KEY (UserID) REFERENCES User
                ON DELETE CASCADE
);


CREATE TABLE Transportation (
        TransportID         INTEGER             PRIMARY KEY,
        Type                VARCHAR(50),
        TransportCost       FLOAT
);


CREATE TABLE Retailer1 (
        RetailerName        VARCHAR(50),PRIMARY KEY
        RetailerWebsite     VARCHAR(100)
);
CREATE TABLE Retailer2 (
        RetailerID          INTEGER             PRIMARY KEY,
        RetailerName        VARCHAR(50)
);


CREATE TABLE Gear1 (
        GearType            VARCHAR(50)         PRIMARY KEY,
        GearName            VARCHAR(50),
);
CREATE TABLE Gear2 (
        GearType            VARCHAR(50)         PRIMARY KEY,
        LocationName        VARCHAR(50),
        Coordinates         SDO_GEOMETRY,
        TrailName           VARCHAR(50),
        FOREIGN KEY (LocationName, Coordinates) REFERENCES Location
                ON DELETE SET NULL,
        FOREIGN KEY (TrailName) REFERENCES Trail
                ON DELETE SET NULL
);
```

```sql
CREATE TABLE Location (
      LocationName      VARCHAR(50),
      Coordinates       SDO_GEOMETRY,
      Weather           VARCHAR(30),
      PRIMARY KEY (LocationName, Coordinates)
);


CREATE TABLE Trail1 (
      LocationName      VARCHAR(50)       NOT NULL,
      Coordinates       SDO_GEOMETRY      NOT NULL,
      TrailName         VARCHAR(50),
      Difficulty        INTEGER,
      TimeToComplete    TIME,
      Description       VARCHAR(5000),
      Hazards           VARCHAR(100),
      PRIMARY KEY (LocationName, Coordinates, TrailName),
      FOREIGN KEY (LocationName, Coordinates) REFERENCES Location
            ON DELETE CASCADE
);
CREATE TABLE Trail2 (
      LocationName      VARCHAR(50)       NOT NULL,
      Coordinates       SDO_GEOMETRY      NOT NULL,
      TrailName         VARCHAR(50),
      Hazards           VARCHAR(100),
      PRIMARY KEY (LocationName, Coordinates, TrailName),
      FOREIGN KEY (LocationName, Coordinates) REFERENCES Location
            ON DELETE CASCADE
);
CREATE TABLE Trail3 (
      Difficulty        INTEGER           PRIMARY KEY,
      TimeToComplete    TIME
);


CREATE TABLE Preview1 (
      PreviewID         INTEGER           PRIMARY KEY,
      Image             BLOB
);
CREATE TABLE Preview2 (
      LocationName      VARCHAR(50)       NOT NULL,
```

```
        Coordinates        SDO_GEOMETRY        NOT NULL,
        TrailName          VARCHAR(50)         NOT NULL,
        PreviewID          INTEGER,
        PRIMARY KEY (LocationName, Coordinates, TrailName, PreviewID),
        FOREIGN KEY (LocationName, Coordinates) REFERENCES Location
                ON DELETE CASCADE,
        FOREIGN KEY (TrailName) REFERENCES Trails
                ON DELETE CASCADE,
);


CREATE TABLE UGC (
        UGCID              INTEGER             PRIMARY KEY,
        UserID             INTEGER             NOT NULL,
        LocationName       VARCHAR(50)         NOT NULL,
        Coordinates        SDO_GEOMETRY        NOT NULL,
        TrailName          VARCHAR(50)         NOT NULL,
        DatePosted         DATE,
        FOREIGN KEY (UserID) REFERENCES User
                ON DELETE CASCADE,
        FOREIGN KEY (LocationName, Coordinates) REFERENCES Location
                ON DELETE CASCADE,
        FOREIGN KEY (TrailName) REFERENCES Trail
                ON DELETE CASCADE
);


CREATE TABLE Review (
        UGCID              INTEGER             PRIMARY KEY,
        Rating             INTEGER,
        Description        VARCHAR(500),
        FOREIGN KEY (UGCID) REFERENCES UGC
                ON DELETE CASCADE
);


CREATE TABLE Photo (
        UGCID              INTEGER             PRIMARY KEY,
        Image              BLOB,
        FOREIGN KEY (UGCID) REFERENCES UGC
                ON DELETE CASCADE
);
```

Relationships

```sql
CREATE TABLE Friends (
        UserID            INTEGER,
        FriendID          INTEGER,
        PRIMARY KEY (UserID, FriendID),
        FOREIGN KEY (UserID) REFERENCES User(UserID)
                ON DELETE CASCADE,
        FOREIGN KEY (FriendID) REFERENCES User(UserID)
                ON DELETE CASCADE
);
CREATE TABLE TransportationToLocation (
        TransportID       INTEGER,
        LocationName      VARCHAR(50),
        Coordinates       SDO_GEOMETRY,
        Duration          TIME,
        TripCost          FLOAT,
        PRIMARY KEY (TransportID, LocationName, Coordinates),
        FOREIGN KEY (TransportID) REFERENCES Transportation
                ON DELETE CASCADE,
        FOREIGN KEY (LocationName, Coordinates) REFERENCES Location
                ON DELETE CASCADE
);
CREATE TABLE UserHikesTrail (
        UserID            INTEGER,
        LocationName      VARCHAR(50),
        Coordinates       SDO_GEOMETRY,
        TrailName         VARCHAR(50),
        Date              DATE,
        TimeToComplete    TIME,
        PRIMARY KEY (UserID, LocationName, Coordinates, TrailName),
        FOREIGN KEY (UserID) REFERENCES User
                ON DELETE CASCADE,
        FOREIGN KEY (LocationName, Coordinates) REFERENCES Location
                ON DELETE CASCADE,
        FOREIGN KEY (TrailName) REFERENCES Trail
                ON DELETE CASCADE
);
CREATE TABLE RetailerFeaturesGear (
```

```
        RetailerID          INTEGER,
        GearType            VARCHAR(50),
        ProductName         VARCHAR(50),
        ProductWebsite      VARCHAR(100),
        PRIMARY KEY (RetailerID, GearType),
        FOREIGN KEY (RetailerID) REFERENCES User
                ON DELETE CASCADE,
        FOREIGN KEY (GearType) REFERENCES Gear
                ON DELETE CASCADE
);
```

INSERT Statements

User tables

```
INSERT INTO User1 (TrailsHiked, ExperienceLvl) VALUES
(15, 3),
(8, 2),
(25, 4),
(5, 1),
(20, 3);

INSERT INTO User3 (Email, ProfilePicture, TrailsHiked) VALUES
('john.doe@email.com', 'BLOB_PLACEHOLDER', 15),
('jane.smith@email.com', 'BLOB_PLACEHOLDER', 8),
('mike.johnson@email.com', 'BLOB_PLACEHOLDER', 25),
('emily.brown@email.com', 'BLOB_PLACEHOLDER', 5),
('david.lee@email.com', 'BLOB_PLACEHOLDER', 20);

INSERT INTO User5 (Name, Email, NumberOfFriends) VALUES
('John Doe', 'john.doe@email.com', 7),
('Jane Smith', 'jane.smith@email.com', 5),
('Mike Johnson', 'mike.johnson@email.com', 12),
('Emily Brown', 'emily.brown@email.com', 3),
('David Lee', 'david.lee@email.com', 9);

INSERT INTO USER6 (UserID, Name, Email) VALUES
(1, 'John Doe', 'john.doe@email.com'),
(2, 'Jane Smith', 'jane.smith@email.com'),
(3, 'Mike Johnson', 'mike.johnson@email.com'),
(4, 'Emily Brown', 'emily.brown@email.com'),
(5, 'David Lee', 'david.lee@email.com');
```

Equipment tables

```
INSERT INTO Equipment1 (UserID, Amount) VALUES
(1, 1),
(1, 1),
(2, 2),
(3, 1),
(4, 1);
```

```
INSERT INTO Equipment3 (EquipmentID, Type, Brand) VALUES
(1, 'Hiking Boots', 'Merrell'),
(2, 'Backpack', 'Osprey'),
(3, 'Trekking Poles', 'Black Diamond'),
(4, 'Tent', 'REI'),
(5, 'Sleeping Bag', 'The North Face');


INSERT INTO Equipment5 (EquipmentID, Weight) VALUES
(1, 2.5),
(2, 1.8),
(3, 0.5),
(4, 3.2),
(5, 1.5);


INSERT INTO Equipment6 (EquipmentID, UserID) VALUES
(1, 1),
(2, 1),
(3, 2),
(4, 3),
(5, 4);
```

Transportation table

```
INSERT INTO Transportation (TransportID, Type, TransportCost) VALUES
(1, 'Car', 0.15),
(2, 'Bus', 2.50),
(3, 'Train', 5.00),
(4, 'Bicycle', 0.00),
(5, 'Shuttle', 10.00);
```

Retailer table

```
INSERT INTO Retailer1 (RetailerName, RetailerWebsite)
VALUES
('Mountain Outfitters', 'www.mountainoutfitters.com'),
('Trail Blazer Gear', 'www.trailblazergear.com'),
('Summit Supply Co.', 'www.summitsupply.com'),
('Campsite Essentials', 'www.campsiteessentials.com'),
('Wilderness Comfort', 'www.wildernesscomfort.com');


INSERT INTO Retailer2 (RetailerID, RetailerName)
```

```
VALUES
(1, 'Mountain Outfitters'),
(2, 'Trail Blazer Gear'),
(3, 'Summit Supply Co.'),
(4, 'Campsite Essentials'),
(5, 'Wilderness Comfort');
```

Gear table

```
INSERT INTO Gear1 (GearType, GearName)
VALUES
('Hiking Boots', 'All-Terrain Hikers'),
('Backpack', 'Mountaineer Pack'),
('Trekking Poles', 'Ultralight Trekkers'),
('Tent', 'Wilderness Shelter'),
('Sleeping Bag', 'Apine Dreamer');


INSERT INTO Gear2 (GearType, LocationName, Coordinates, TrailName)
VALUES
('Hiking Boots', 'Yosemite National Park', SDO_GEOMETRY(2001, 4326,
SDO_POINT_TYPE(-119.5383, 37.8651, NULL), NULL, NULL), 'Half Dome Trail'),
('Backpack', 'Rocky Mountain National Park', SDO_GEOMETRY(2001, 4326,
SDO_POINT_TYPE(-105.6836, 40.3428, NULL), NULL, NULL), 'Longs Peak Trail'),
('Trekking Poles', 'Grand Canyon National Park', SDO_GEOMETRY(2001, 4326,
SDO_POINT_TYPE(-112.1401, 36.0544, NULL), NULL, NULL), 'Bright Angel Trail'),
('Tent', 'Yellowstone National Park', SDO_GEOMETRY(2001, 4326,
SDO_POINT_TYPE(-110.5885, 44.4280, NULL), NULL, NULL), 'Lamar Valley Trail'),
('Sleeping Bag', 'Glacier National Park', SDO_GEOMETRY(2001, 4326,
SDO_POINT_TYPE(-113.7870, 48.7596, NULL), NULL, NULL), 'Highline Trail');
```

Location table

```
INSERT INTO Location (LocationName, Coordinates, Weather) VALUES
('Yosemite National Park', SDO_GEOMETRY(2001, 4326, SDO_POINT_TYPE(-119.5383,
37.8651, NULL), NULL, NULL), 'Sunny'),
('Rocky Mountain National Park', SDO_GEOMETRY(2001, 4326,
SDO_POINT_TYPE(-105.6836, 40.3428, NULL), NULL, NULL), 'Partly Cloudy'),
('Grand Canyon National Park', SDO_GEOMETRY(2001, 4326,
SDO_POINT_TYPE(-112.1401, 36.0544, NULL), NULL, NULL), 'Hot'),
('Yellowstone National Park', SDO_GEOMETRY(2001, 4326,
SDO_POINT_TYPE(-110.5885, 44.4280, NULL), NULL, NULL), 'Rainy'),
('Glacier National Park', SDO_GEOMETRY(2001, 4326, SDO_POINT_TYPE(-113.7870,
48.7596, NULL), NULL, NULL), 'Snowy');
```

Trail table

```
INSERT INTO Trail1 (LocationName, Coordinates, TrailName, Difficulty,
TimeToComplete, Description) VALUES

('Yosemite National Park', SDO_GEOMETRY(2001, 4326, SDO_POINT_TYPE(-119.5383,
37.8651, NULL), NULL, NULL), 'Half Dome Trail', 5, '10:00:00', 'Challenging
hike with stunning views of Yosemite Valley'),

('Rocky Mountain National Park', SDO_GEOMETRY(2001, 4326,
SDO_POINT_TYPE(-105.6836, 40.3428, NULL), NULL, NULL), 'Longs Peak Trail', 5,
'12:00:00', 'Difficult ascent to one of Colorado's famous 14ers'),

('Grand Canyon National Park', SDO_GEOMETRY(2001, 4326,
SDO_POINT_TYPE(-112.1401, 36.0544, NULL), NULL, NULL), 'Bright Angel Trail', 4,
'08:00:00', 'Popular rim-to-river trail with rest houses along the way'),

('Yellowstone National Park', SDO_GEOMETRY(2001, 4326,
SDO_POINT_TYPE(-110.5885, 44.4280, NULL), NULL, NULL), 'Lamar Valley Trail', 2,
'03:00:00', 'Easy trail known for wildlife viewing, especially wolves and
bison'),

('Glacier National Park', SDO_GEOMETRY(2001, 4326, SDO_POINT_TYPE(-113.7870,
48.7596, NULL), NULL, NULL), 'Highline Trail', 3, '06:00:00', 'Scenic trail
along the Continental Divide with panoramic views');


INSERT INTO Trail2 (LocationName, Coordinates, TrailName, Hazards) VALUES

('Yosemite National Park', SDO_GEOMETRY(2001, 4326, SDO_POINT_TYPE(-119.5383,
37.8651, NULL), NULL, NULL), 'Half Dome Trail', 'Altitude sickness,
lightning'),

('Grand Canyon National Park', SDO_GEOMETRY(2001, 4326,
SDO_POINT_TYPE(-112.1401, 36.0544, NULL), NULL, NULL), 'Bright Angel Trail',
steep drop-offs'),

('Yellowstone National Park', SDO_GEOMETRY(2001, 4326,
SDO_POINT_TYPE(-110.5885, 44.4280, NULL), NULL, NULL), 'Lamar Valley Trail',
'Wildlife encounters'),

('Glacier National Park', SDO_GEOMETRY(2001, 4326, SDO_POINT_TYPE(-113.7870,
48.7596, NULL), NULL, NULL), 'Highline Trail', 'Narrow paths, grizzly bears');


INSERT INTO Trail3 (Difficulty, TimeToComplete) VALUES

(5, '10:00:00'),

(5, '12:00:00'),

(4, '08:00:00'),

(2, '03:00:00'),

(3, '06:00:00');
```

Preview table

```
INSERT INTO Preview1 (PreviewID, Image) VALUES

(1, 'BLOB_PLACEHOLDER'),

(2, 'BLOB_PLACEHOLDER'),
```

```
(3, 'BLOB_PLACEHOLDER'),

(4, 'BLOB_PLACEHOLDER'),

(5, 'BLOB_PLACEHOLDER');


INSERT INTO Preview2 (LocationName, Coordinates, TrailName, PreviewID, Image,
Caption) VALUES

('Yosemite National Park', SDO_GEOMETRY(2001, 4326, SDO_POINT_TYPE(-119.5383,
37.8651, NULL), NULL, NULL), 'Half Dome Trail', 1),

('Rocky Mountain National Park', SDO_GEOMETRY(2001, 4326,
SDO_POINT_TYPE(-105.6836, 40.3428, NULL), NULL, NULL), 'Longs Peak Trail', 2),

('Grand Canyon National Park', SDO_GEOMETRY(2001, 4326,
SDO_POINT_TYPE(-112.1401, 36.0544, NULL), NULL, NULL), 'Bright Angel Trail',
3),

('Yellowstone National Park', SDO_GEOMETRY(2001, 4326,
SDO_POINT_TYPE(-110.5885, 44.4280, NULL), NULL, NULL), 'Lamar Valley Trail',
4),

('Glacier National Park', SDO_GEOMETRY(2001, 4326, SDO_POINT_TYPE(-113.7870,
48.7596, NULL), NULL, NULL), 'Highline Trail', 5);
```

UGC table

```
INSERT INTO UGC (UGCID, UserID, LocationName, Coordinates, TrailName,
DatePosted) VALUES

(1, 1, 'Yosemite National Park', SDO_GEOMETRY(2001, 4326,
SDO_POINT_TYPE(-119.5383, 37.8651, NULL), NULL, NULL), 'Half Dome Trail',
'2023-07-15'),

(2, 2, 'Rocky Mountain National Park', SDO_GEOMETRY(2001, 4326,
SDO_POINT_TYPE(-105.6836, 40.3428, NULL), NULL, NULL), 'Longs Peak Trail',
'2023-08-02'),

(3, 3, 'Grand Canyon National Park', SDO_GEOMETRY(2001, 4326,
SDO_POINT_TYPE(-112.1401, 36.0544, NULL), NULL, NULL), 'Bright Angel Trail',
'2023-06-20'),

(4, 4, 'Yellowstone National Park', SDO_GEOMETRY(2001, 4326,
SDO_POINT_TYPE(-110.5885, 44.4280, NULL), NULL, NULL), 'Lamar Valley Trail',
'2023-09-10'),

(5, 5, 'Glacier National Park', SDO_GEOMETRY(2001, 4326,
SDO_POINT_TYPE(-113.7870, 48.7596, NULL), NULL, NULL), 'Highline Trail',
'2023-07-30');
```

Review table

```
INSERT INTO Review (UGCID, Rating, Description) VALUES

(1, 5, 'Challenging but rewarding hike with unforgettable views!'),

(2, 4, 'Tough climb, but the sense of accomplishment was worth it.'),

(3, 5, 'Beautiful trail with plenty of shade and rest areas.'),

(4, 5, 'Amazing wildlife viewing! Saw several bison and even a wolf pack.'),
```

```
(5, 4, 'Stunning vistas, but some parts of the trail were a bit
nerve-wracking.');
```

Photo table

```
INSERT INTO Photo (UGCID, Image) VALUES
(1, 'BLOB_PLACEHOLDER'),
(2, 'BLOB_PLACEHOLDER'),
(3, 'BLOB_PLACEHOLDER'),
(4, 'BLOB_PLACEHOLDER'),
(5, 'BLOB_PLACEHOLDER');
```

Friends table

```
INSERT INTO Friends (UserID, FriendID) VALUES
(1, 2),
(1, 3),
(2, 1),
(3, 4),
(4, 5);
```

TransportationToLocation table

```
INSERT INTO TransportationToLocation (TransportID, LocationName, Coordinates,
Duration, TripCost) VALUES
(1, 'Yosemite National Park', SDO_GEOMETRY(2001, 4326,
SDO_POINT_TYPE(-119.5383, 37.8651, NULL), NULL, NULL), '04:00:00', 50.00),
(2, 'Rocky Mountain National Park', SDO_GEOMETRY(2001, 4326,
SDO_POINT_TYPE(-105.6836, 40.3428, NULL), NULL, NULL), '01:30:00', 15.00),
(3, 'Grand Canyon National Park', SDO_GEOMETRY(2001, 4326,
SDO_POINT_TYPE(-112.1401, 36.0544, NULL), NULL, NULL), '03:00:00', 30.00),
(4, 'Yellowstone National Park', SDO_GEOMETRY(2001, 4326,
SDO_POINT_TYPE(-110.5885, 44.4280, NULL), NULL, NULL), '02:00:00', 0.00),
(5, 'Glacier National Park', SDO_GEOMETRY(2001, 4326, SDO_POINT_TYPE(-113.7870,
48.7596, NULL), NULL, NULL), '00:45:00', 20.00);
```

UserHikesTrail table

```
INSERT INTO UserHikesTrail (UserID, LocationName, Coordinates, TrailName, Date,
TimeToComplete) VALUES
(1, 'Yosemite National Park', SDO_GEOMETRY(2001, 4326,
SDO_POINT_TYPE(-119.5383, 37.8651, NULL), NULL, NULL), 'Half Dome Trail',
'2023-07-15', '11:30:00'),
```

(2, 'Rocky Mountain National Park', SDO_GEOMETRY(2001, 4326,
SDO_POINT_TYPE(-105.6836, 40.3428, NULL), NULL, NULL), 'Longs Peak Trail',
'2023-08-02', '13:45:00'),

(3, 'Grand Canyon National Park', SDO_GEOMETRY(2001, 4326,
SDO_POINT_TYPE(-112.1401, 36.0544, NULL), NULL, NULL), 'Bright Angel Trail',
'2023-06-20', '07:15:00'),

(4, 'Yellowstone National Park', SDO_GEOMETRY(2001, 4326,
SDO_POINT_TYPE(-110.5885, 44.4280, NULL), NULL, NULL), 'Lamar Valley Trail',
'2023-09-10', '02:50:00'),

(5, 'Glacier National Park', SDO_GEOMETRY(2001, 4326, SDO_POINT_TYPE(-113.7870,
48.7596, NULL), NULL, NULL), 'Highline Trail', '2023-07-30', '06:20:00');

RetailerFeaturesGear table

INSERT INTO RetailerFeaturesGear (RetailerID, GearType, ProductName,
ProductWebsite) VALUES

(1, 'Hiking Boots', 'Vasque M's Breeze AT GTX',
'https://www.themountainoutfitters.com/ms-breeze-at-gtx.html'),

(2, 'Backpack', 'Waterproof EDC Waist Bag',
'https://www.trailblazergear.com/outdoor-tactical-molle-pouches-compact-waterpr
oof-edc-waist-bag-for-hiking-backpacking-hiking?variantId=548'),

(3, 'Trekking Poles', 'Sturdy Stainless Steel 7ft Hiking Pole',
'https://www.summitsupply.com/stainless-steel-hiking-pole?size=7'),

(4, 'Tent','4 person tent with rain cover',
'https://www.campsiteessentials.com/4-person-tent?color=red'),

(5, 'Sleeping Bag', 'Cotten lined 40C certified sleeping bag',
'www.wildernesscomfort.com/cotten-40c-sleeping-bag');