

Report For CW1

Exercise 1: Entity Relationship Diagram (ERD)

After analyzing the content of the Alltrails.com website, I think the system should include the following entities:

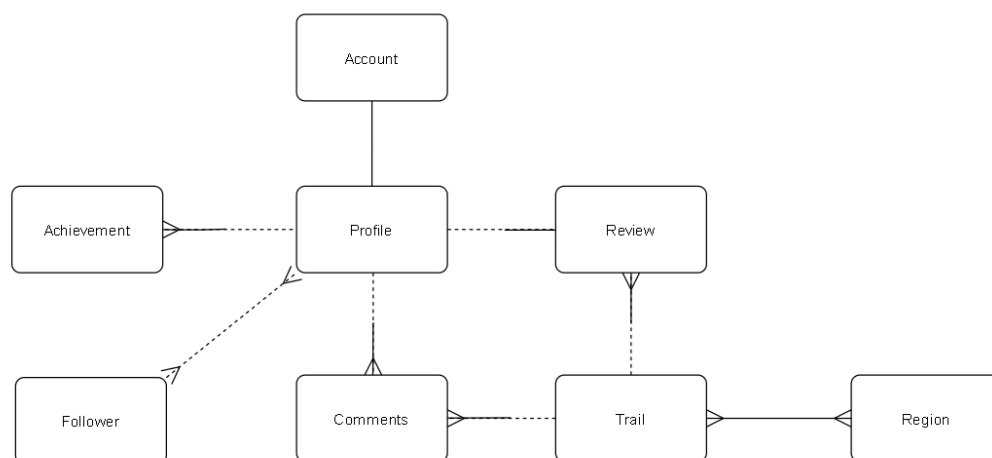
- 1.Account -- Each user' s account
- 2.Profile -- personal information of each user
- 3.Achievement -- Achievements achieved by users
- 4.Comment -- comments made by users
- 5.Trail -- tourist routes
- 6.Region -- Tourist routes crossed position

Profile may not have achieved any achievements, or it may not have any reviews, and the travel routes may not have any reviews either.

Assumptions

1. the Recommender service section uses users' ratings of routes, so there is no need not to design any entity .

2. LinkData section is used to link multiple areas on a Trail, so i use Region to represent the areas .



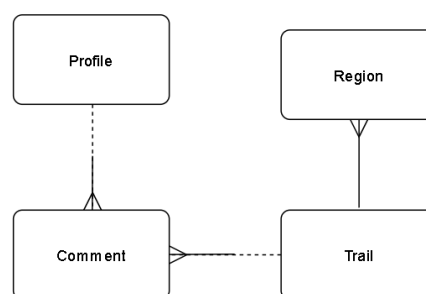
Exercise 2: Normalisation

Profile & Visited Trails

UNF	1NF	2NF	3NF
<u>Email</u>	<u>Email</u>	<u>Email</u>	<u>Email</u>
Name	Name	Name	Name
Time	Time	Time	Time
Followers	Followers	Followers	Followers
Following	Following	Following	Following
Country	Country	Country	Country
HeadImage	HeadImage	HeadImage	HeadImage
Language	Language	Language	Language
(Accession No			
Trail No	<u>Email</u>	<u>Email</u>	<u>Accession No</u>
Trail Image	<u>Accession No</u>	<u>Accession No</u>	*Email
star	Trail No	<u>Trail No</u>	*Trail No
Trail name	Trail Image		
Trail length)	star	<u>Trail No</u>	<u>Trail No</u>
(Comment No	Trail name	Trail Image	Trail Image
Comment Content	Trail length	star	star
Comment Time)	(Comment No	Trail name	Trail name
	Comment Content	Trail length	Trail length
	Comment Time)	(Comment No	
		Comment Content	<u>Comment No</u>
		Comment Time)	*Trail No
			*Email
			Comment Content
			Comment Time

This table shows key attributes and may not be complete

Part ERD



Reason: The main function of the system is to provide users with route selection, and the core of the route is the area along the way. Therefore, I chose Profile, Region, Comment and Trail to draw the ERD to clearly describe its role.

Exercise 3: SQL

Show data from table

Run Cancel Disconnect Change Database: COMP2001_FNi

```
1 SELECT TOP (1000) [Email]
2     ,[Password]
3     ,[Profile_no]
4 FROM [COMP2001_FNi].[dbo].[Account]
```

Results		Messages	
	Email	Password	Profile_no
1	ada@plymouth.ac.uk	insecurePassword	3
2	grace@plymouth.ac.uk	ISAD123!	1
3	tim@plymouth.ac.uk	COMP2001!	2

Run
 Cancel
 Disconnect
 Change
 Database: COMP2001_FNi

```

1 SELECT TOP (1000) [Achievement_no]
2     ,[Description]
3     ,[Condition]
4 FROM [COMP2001_FNi].[dbo].[Achievement]
  
```

Results Messages

	Achievement_no	Description	Condition
1	1	achieve 50 KM	50
2	2	achieve 100 KM	100
3	3	achieve 200 KM	200
4	4	achieve 500 KM	500
5	5	achieve 1000 KM	1000

Run
 Cancel
 Disconnect
 Change
 Database: COMP2001_FNi

```

1 SELECT TOP (1000) [Comment_no]
2     ,[Profile_no]
3     ,[Trail_no]
4     ,[Comment_content]
5     ,[Comment_time]
6 FROM [COMP2001_FNi].[dbo].[Comment]
  
```

Results Messages

	Comment_no	Profile_no	Trail_no	Comment_content	Comment_time
1	1	1	1	i think it a little hard, but i like	2023-11-19 23:59:17.000
2	2	3	2	it is so easy, ha ha	2023-09-05 23:59:50.000

Run
Cancel
Disconnect
Change
Database: COMP2001_FNi

```

1 SELECT TOP (1000) [Region_no]
2     ,[Location]
3 FROM [COMP2001_FNi].[dbo].[Region]

```

Results

Messages

	Region_no	Location
1	1	Biwa Falls
2	2	The summit
3	3	Takaosan Monkey Park
4	4	Mount Imakura
5	5	Konga Falls
6	6	Komine Park
7	7	Todoroki Valley

Run
Cancel
Disconnect
Change
Database: COMP2001_FNi
Estimated Plan
Enable Actual Plan
Parse
Enable SQLCMD
To Notebook

```

1 SELECT TOP (1000) [Profile_no]
2     ,[First_name]
3     ,[Last_name]
4     ,[About]
5     ,[Location]
6     ,[Units]
7     ,[Time_preference]
8     ,[Height]
9     ,[Weight]
10    ,[Birthday]
11    ,[Language]

```

Results

Messages

	Profile_no	First_name	Last_name	About	Location	Units	Time_preference	Height	Weight
1	1	Grace	Hopper	NULL	Sydney	Metric	Pace	162	60
2	2	Tim	Berners-Lee	NULL	Japa	Metric	Pace	180	65
3	3	Ada	Lovelace	NULL	China	Metric	Pace	157	62

Run Cancel Disconnect Change Database: COMP2001_FNi Estimated Plan Enable

```

1 SELECT TOP (1000) [Review_no]
2     , [star]
3     , [Review_content]
4     , [Profile_no]
5     , [Trail_no]
6 FROM [COMP2001_FNi].[dbo].[Review]
  
```

Results Messages

	Review_no	star	Review_content	Profile_no	Trail_no
1	1	4	nice trail	1	1
2	2	4	it makes me happy, i enjoy it	3	2

Run Cancel Disconnect Change Database: COMP2001_FNi Estimated Plan Enable Actual Plan

```

1 SELECT TOP (1000) [Trail_no]
2     , [Trail_name]
3     , [Image]
4     , [star]
5     , [Length]
6 FROM [COMP2001_FNi].[dbo].[Trail]
  
```

Results Messages

	Trail_no	Trail_name	Image	star	Length
1	1	Mount Takao: Trail 6 - Trail 4	NULL	4.5	6.8
2	2	Mount Imakura - Kon Falls - Komine Park	NULL	4.7	6.1
3	3	Todoroki Valley Trail	NULL	4.2	1.4

▶ Run

❏ Cancel

🔌 Disconnect

🔄 Change

Database: COMP2001_FNi

1

2

3

4

5

SELECT TOP (1000) [Link_no]

,[Trail_no]

,[Region_no]

,[orders]

FROM [COMP2001_FNi].[dbo].[Trail_Route]

Results

Messages

	Link_no ▼	Trail_no ▼	Region_no ▼	orders ▼
1	1	1	1	1
2	2	1	2	2
3	3	1	3	3
4	4	2	4	1
5	5	2	5	2
6	6	2	6	3
7	7	3	7	1

Exercise 4: View

Create view

▶ Run ☐ Cancel Disconnect Change Database: COMP2001_FNi ▼

```
1 CREATE VIEW Users AS
2 SELECT COALESCE(COUNT(Follow.Followed_no), 0) AS FollowerNumber ,
3 Profile.Profile_no
4 FROM Profile
5 LEFT JOIN Follow
6 ON Profile.Profile_no = Follow.Followed_no
7 GROUP BY Profile.Profile_no
8 |
```

Messages

1:57:05 PM Started executing query at Line 1
Commands completed successfully.
Total execution time: 00:00:00.024

Query data from view

ist-6-505.uopnet.plymouth.ac.uk Notebook-1 SQL

Run

Cancel

Disconnect

Change

Database: COMP2001_f

1

2

```
select * from Users
```

Results

Messages

	FollowerNumber	Profile_no
1	1	1
2	0	2
3	0	3

Exercise 5: Stored procedure

Insert:

Run Cancel Disconnect Change Database: COMP2001_FNi

✓ Parse

```
1 CREATE PROCEDURE AddRegion (  
2   @Location as VARCHAR(64)  
3 ) AS  
4 BEGIN  
5   INSERT INTO Region (Location) VALUES (@Location)  
6 END;
```

Messages

2:04:18 PM Started executing query at Line 1
Commands completed successfully.
Total execution time: 00:00:00.022

Run Cancel Disconnect Change Database: COMP2001_FNi

✓ Parse

```
1 exec AddRegion @Location="test Region"
```

Messages

2:07:41 PM Started executing query at Line 1
(1 row affected)
Total execution time: 00:00:00.023

Database: COMP2001_FNi

```
1 SELECT TOP (1000) [Region_no]
2     , [Location]
3 FROM [COMP2001_FNI].[dbo].[Region]
```

Results		Messages
	Region_no	Location
1	1	Biwa Falls
2	2	The summit
3	3	Takaosan Monkey Park
4	4	Mount Imakura
5	5	Konga Falls
6	6	Komine Park
7	7	Todoroki Valley
8	8	test Region

Update:

▶ Run ☐ Cancel  Disconnect  Change | Database: COMP2001_FNi

✓ Parse

```
1 CREATE PROCEDURE UpdateRegion (  
2     @Region_no as int,  
3     @Location as VARCHAR(64)  
4 ) AS  
5 BEGIN  
6     UPDATE Region set Location = @Location WHERE Region_no = @R  
7 END;  
8
```

Messages

2:10:52 PM Started executing query at Line 1
Commands completed successfully.
Total execution time: 00:00:00.026

▶ Run ☐ Cancel  Disconnect  Change

Database: COMP2001_FNi 

✓ Parse

```
1 EXEC UpdateRegion @Region_no=8, @Location="test Rgion1"
```

Messages

2:14:44 PM Started executing query at Line 1
(1 row affected)
Total execution time: 00:00:00.021

Run Cancel Disconnect Change Database: COMP2001_FNi

✓ Parse

```
1 SELECT TOP (1000) [Region_no]
2     , [Location]
3 FROM [COMP2001_FNi].[dbo].[Region]
```

Results Messages

	Region_no ▼	Location ▼
1	1	Biwa Falls
2	2	The summit
3	3	Takaosan Monkey Park
4	4	Mount Imakura
5	5	Konga Falls
5	6	Komine Park
7	7	Todoroki Valley
3	8	test Rgion1

Delete:

▶ Run

❏ Cancel

🔌 Disconnect

🔄 Change

Database: COMP2001_FNi

✓ Parse

1

CREATE PROCEDURE DeleteRegion (

2

@Region_no as int

3

) AS

4

BEGIN

5

DELETE FROM Region WHERE Region_no = @Region_no

6

END;

7

Messages

2:15:49 PM Started executing query at Line 1
Commands completed successfully.
Total execution time: 00:00:00.022

▶ Run

❏ Cancel

🔌 Disconnect

🔄 Change

Database: COMP2001_FNi

✓ Parse

1

EXEC DeleteRegion @Region_no=8

Messages

2:16:57 PM Started executing query at Line 1
(1 row affected)
Total execution time: 00:00:00.027

@

Run Cancel Disconnect Change Database: COMP2001_FN

✓ Parse

```
1 SELECT TOP (1000) [Region_no]
2     , [Location]
3 FROM [COMP2001_FN].[dbo].[Region]
```

Results Messages

	Region_no	Location
1	1	Biwa Falls
2	2	The summit
3	3	Takaosan Monkey Park
4	4	Mount Imakura
5	5	Konga Falls
6	6	Komine Park
7	7	Todoroki Valley

Exercise 6: Trigger

Create Trgger

Run

Cancel

Disconnect

Change

Database: COMP2001_FNi

✓ Parse

```
1  CREATE TRIGGER UpdateAchievementNo
2  ON Profile_Achievement
3  AFTER UPDATE
4  AS
5  BEGIN
6      IF UPDATE(Distance)
7      BEGIN
8          UPDATE pa
9          SET pa.Achievement_no = (
10             SELECT TOP 1 a.Achievement_no
11             FROM Achievement a
12             WHERE a.Condition <= i.Distance
13             ORDER BY a.Condition DESC
14          )
15          FROM inserted i
16          JOIN Profile_Achievement pa ON pa.Data_no = i.Data_no
17      END
18  END
19
```

Messages

2:18:03 PM Started executing query at Line 1
Commands completed successfully.
Total execution time: 00:00:00.042

query exist data

Run
 Cancel
 Disconnect
 Change
 Database: COMP2001_FNi

✓ Parse

```

1  SELECT TOP (1000) [Data_no]
2      , [Profile_no]
3      , [Achievement_no]
4      , [Distance]
5  FROM [COMP2001_FNi].[dbo].[Profile_Achievement]
  
```

Results		Messages		
	Data_no	Profile_no	Achievement_no	Distance
1	1	1	3	0

Update data

Run
 Cancel
 Disconnect
 Change
 Database: COMP2001_FNi

✓ Parse

```

1  UPDATE Profile_Achievement SET Distance = 5000 WHERE Data_no = 1
  
```

Messages

2:20:15 PM Started executing query at Line 1
 (1 row affected)
 (1 row affected)
 Total execution time: 00:00:00.034

Query data after upgraded

Run Cancel Disconnect Change Database: COMP2001_FNi

✓ Parse

```
1 SELECT TOP (1000) [Data_no]
2     , [Profile_no]
3     , [Achievement_no]
4     , [Distance]
5 FROM [COMP2001_FNi].[dbo].[Profile_Achievement]
```

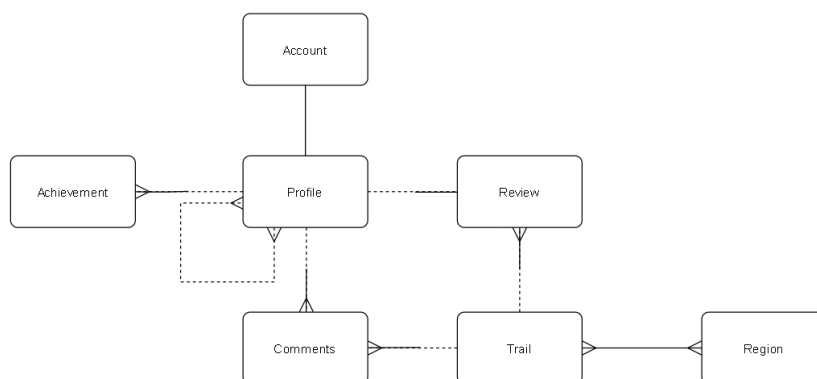
Results Messages

	Data_no	Profile_no	Achievement_no	Distance
1	1	1	5	5000

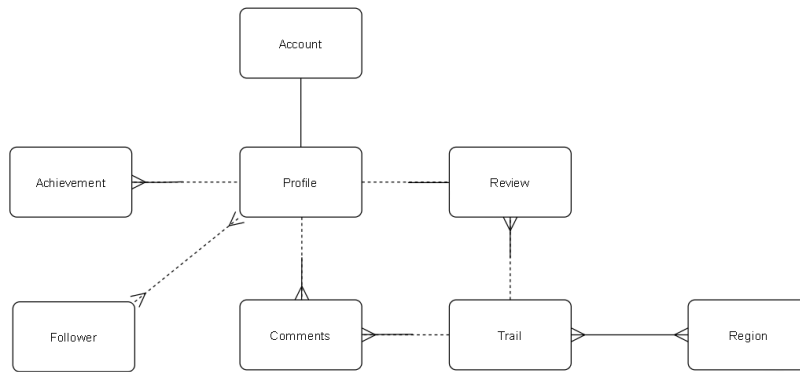
Appendix

Exercise 1: Entity Relationship Diagram (ERD)

Initial ERD



Final ERD



Exercise 2: Normalisation

Field Definition Grid

Account

Field Name	Data Type	Length	Nullable	Default Value	Primary Key	Foreign Key
Email	VARCHAR	32	No	None	Yes	No
Password	VARCHAR	64	No	None	No	No
Profile no	int	N/A	No	None	No	Yes

Achievement

Field Name	Data Type	Length	Nullable	Default Value	Primary Key	Foreign Key
Achievement no	int	N/A	No	None	Yes	No
Description	VARCHAR	255	No	None	No	No
Condition	int	N/A	No	None	No	No

Comment

Field Name	Data Type	Length	Nullable	Default Value	Primary Key	Foreign Key
Comment no	int	N/A	No	None	Yes	No

Profile no	int	N/A	No	None	No	Yes
Trail no	int	N/A	No	None	No	Yes
Comment content	varchar	255	No	None	No	No
Comment Time	datetime	N/A	Yes	None	No	No

Follow

Field Name	Data Type	Length	Nullable	Default Value	Primary Key	Foreign Key
Follow no	int	N/A	No	None	Yes	No
Followed no	int	N/A	No	None	No	Yes
Follower no	int	N/A	No	None	No	Yes

Profile

Field Name	Data Type	Length	Nullable	Default Value	Primary Key	Foreign Key
Profile no	int	N/A	No	None	Yes	No
First name	VARCHAR	32	No	None	No	No
Last name	VARCHAR	32	No	None	No	No
About	VARCHAR	255	Yes	None	No	No
Location	VARCHAR	32	Yes	None	No	No
Units	VARCHAR	16	Yes	None	No	No
Time preference	VARCHAR	16	Yes	None	No	No
Height	int	N/A	Yes	None	No	No

Weight	int	N/A	Yes	None	No	No
Birthday	date	N/A	Yes	None	No	No
Language	VARCHAR	16	Yes	None	No	No

Profile Achievement

Field Name	Data Type	Length	Nullable	Default Value	Primary Key	Foreign Key
Data no	int	N/A	No	None	Yes	No
Profile no	int	N/A	No	None	No	Yes
Achievement no	int	N/A	Yes	None	No	Yes
Distance	int	N/A	No	0	No	No

Region

Field Name	Data Type	Length	Nullable	Default Value	Primary Key	Foreign Key
Region no	int	N/A	No	None	Yes	No
Location	VARCHAR	255	No	None	No	No

Review

Field Name	Data Type	Length	Nullable	Default Value	Primary Key	Foreign Key
Review no	int	N/A	No	None	Yes	No
star	smallint	N/A	No	None	No	No
Content	varchar	255	No	None	No	No

Profile no	int	N/A	No	None	No	Yes
Trial no	int	N/A	No	None	No	Yes

Trail

Field Name	Data Type	Length	Nullable	Default Value	Primary Key	Foreign Key
Trail no	int	N/A	No	None	Yes	No
Trail name	VARCHAR	64	No	None	No	No
Image	VARCHAR	255	Yes	None	No	No
star	float	53	Yes	None	No	No
Length	float	53	Yes	None	No	No

Trail route

Field Name	Data Type	Length	Nullable	Default Value	Primary Key	Foreign Key
Link no	int	N/A	No	None	Yes	No
Trail no	int	N/A	No	None	No	Yes
Region no	int	N/A	No	None	No	Yes
Region no	int	N/A	Yes	None	No	No

Exercise 3: SQL

```
CREATE TABLE Account (
```

```
    Email varchar(32)    NOT NULL,
```

```
    Password varchar(64) NOT NULL,
```

```
    Profile_no int  NOT NULL
```

```
);
```

```
CREATE TABLE Achievement (
```

```
    Achievement_no int IDENTITY(1,1) NOT NULL,
```

```
    Description varchar(255)    NOT NULL,
```

```
    Condition int NOT NULL
```

```
);
```

```
CREATE TABLE Comment (
```

```
    Comment_no int IDENTITY(1,1) NOT NULL,
```

```
    Profile_no int  NOT NULL,
```

```
    Trail_no int  NOT NULL,
```

```
    Comment_content varchar(255)    NOT NULL,
```

```
    Comment_time datetime  NULL
```

```
);
```

```
CREATE TABLE Follow (
```

```
    Follow_no int IDENTITY(1,1) NOT NULL,
```

```
    Followed_no int  NULL,
```

```
    Follower_no int  NULL
```

```
);
```

```
CREATE TABLE Profile (
```

```
    Profile_no int  IDENTITY(1,1) NOT NULL,
```



```

First_name varchar(32) NOT NULL,
Last_name varchar(32) NOT NULL,
About varchar(255) NULL,
Location varchar(32) NULL,
Units varchar(16) NULL,
Time_preference varchar(16) NULL,
Height int NULL,
Weight int NULL,
Birthday date NULL,
Language varchar(16) NULL
);

CREATE TABLE Profile_Achievement (
    Data_no int IDENTITY(1,1) NOT NULL,
    Profile_no int NOT NULL,
    Achievement_no int NULL,
    Distance int NOT NULL
);

CREATE TABLE Region (
    Region_no int IDENTITY(1,1) NOT NULL,
    Location varchar(255) NULL
);

CREATE TABLE Review (
    Review_no int IDENTITY(1,1) NOT NULL,
    star smallint NOT NULL,
    Review_content varchar(255) NOT NULL,

```

```

    Profile_no int NOT NULL,

    Trail_no int NOT NULL

);

CREATE TABLE Trail_Route (

    Link_no int IDENTITY(1,1) NOT NULL,

    Trail_no int NOT NULL,

    Region_no int NOT NULL,

    orders int NULL

);

CREATE TABLE Trail (

    Trail_no int IDENTITY(1,1) NOT NULL,

    Trail_name varchar(64) NOT NULL,

    Image varchar(255) NULL,

    star float(53) NULL,

    Length float(53) NULL

);

ALTER TABLE Account ADD PRIMARY KEY (Email);

ALTER TABLE Achievement ADD PRIMARY KEY (Achievement_no);

ALTER TABLE Comment ADD PRIMARY KEY (Comment_no);

ALTER TABLE Follow ADD PRIMARY KEY (Follow_no);

ALTER TABLE Profile ADD PRIMARY KEY (Profile_no);

ALTER TABLE Profile_Achievement ADD PRIMARY KEY (Data_no);

ALTER TABLE Region ADD PRIMARY KEY (Region_no);

ALTER TABLE Review ADD PRIMARY KEY (Review_no);

ALTER TABLE Trail ADD PRIMARY KEY (Trail_no);

```

```
ALTER TABLE Account ADD CONSTRAINT fk_Profile_no FOREIGN KEY (Profile_no)
REFERENCES Profile (Profile_no);
```

```
ALTER TABLE Comment ADD CONSTRAINT fk_co_Profile_no FOREIGN KEY
(Profile_no) REFERENCES Profile (Profile_no);
```

```
ALTER TABLE Comment ADD CONSTRAINT fk_co_Trail_no FOREIGN KEY
(Trail_no) REFERENCES Trail (Trail_no);
```

```
ALTER TABLE Follow ADD CONSTRAINT fk_Follower_no FOREIGN KEY
(Follower_no) REFERENCES Profile (Profile_no);
```

```
ALTER TABLE Follow ADD CONSTRAINT fk_Followed_no FOREIGN KEY
(Followed_no) REFERENCES Profile (Profile_no);
```

```
ALTER TABLE Profile_Achievement ADD CONSTRAINT fk_ach_Profile_no
FOREIGN KEY (Profile_no) REFERENCES Profile (Profile_no);
```

```
ALTER TABLE Profile_Achievement ADD CONSTRAINT fk_ach_Ach_no FOREIGN
KEY (Achievement_no) REFERENCES Achievement (Achievement_no) ;
```

```
ALTER TABLE Review ADD CONSTRAINT fk_re_Profile_no FOREIGN KEY
(Profile_no) REFERENCES Profile (Profile_no);
```

```
ALTER TABLE Review ADD CONSTRAINT fk_re_Trail_no FOREIGN KEY (Trail_no)
REFERENCES Trail (Trail_no);
```

```
ALTER TABLE Trail_Route ADD CONSTRAINT fk_Region_no FOREIGN KEY
(Region_no) REFERENCES Region (Region_no);
```

```
ALTER TABLE Trail_Route ADD CONSTRAINT fk_Trail_no FOREIGN KEY (Trail_no)
REFERENCES Trail (Trail_no);
```

```
INSERT INTO Achievement ( Description, Condition) VALUES ( 'achieve 50 KM', '50');
```

```
INSERT INTO Achievement ( Description, Condition) VALUES ( 'achieve 100 KM',
'100' );
```

```
INSERT INTO Achievement ( Description, Condition) VALUES ( 'achieve 200 KM',
'200');
```

```
INSERT INTO Achievement ( Description, Condition) VALUES ('achieve 500 KM',
'500');
```

```
INSERT INTO Achievement ( Description, Condition) VALUES ( 'achieve 1000 KM',
'1000');
```

```
INSERT INTO Profile ( First_name, Last_name, About, Location, Units,
Time_preference, Height, Weight, Birthday, Language) VALUES ( 'Grace', 'Hopper',
NULL, 'Sydney', 'Metric', 'Pace', '162', '60', '1995-11-19', 'English(US)');
```

```
INSERT INTO Profile ( First_name, Last_name, About, Location, Units,
Time_preference, Height, Weight, Birthday, Language) VALUES ( 'Tim', 'Berners-Lee',
NULL, 'Japa', 'Metric', 'Pace', '180', '65', '1996-11-02', 'English(US)');
```

```
INSERT INTO Profile ( First_name, Last_name, About, Location, Units,
Time_preference, Height, Weight, Birthday, Language) VALUES ( 'Ada', 'Lovelace',
NULL, 'China', 'Metric', 'Pace', '157', '62', '1992-06-07', 'English(US)');
```

```
INSERT INTO Trail ( Trail_name, Image, star, Length) VALUES ( 'Mount Takao: Trail
6 - Trail 4', NULL, '4.5', '6.8');
```

```
INSERT INTO Trail ( Trail_name, Image, star, Length) VALUES ( 'Mount Imakura -
Kon Falls - Komine Park', NULL, '4.7', '6.1');
```

```
INSERT INTO Trail ( Trail_name, Image, star, Length) VALUES ( 'Todoroki Valley Trail',
NULL, '4.2', '1.4');
```

```
INSERT INTO Region ( Location) VALUES ( 'Biwa Falls');
```

```
INSERT INTO Region ( Location) VALUES ( 'The summit');
```

```
INSERT INTO Region ( Location) VALUES ( 'Takaosan Monkey Park');
```

```
INSERT INTO Region ( Location) VALUES ( 'Mount Imakura');
```

```
INSERT INTO Region ( Location) VALUES ( 'Konga Falls');
```

```
INSERT INTO Region ( Location) VALUES ( 'Komine Park');
```

```
INSERT INTO Region ( Location) VALUES ( 'Todoroki Valley');
```

```
INSERT INTO Review (star, Review_content, Profile_no, Trail_no) VALUES ( '4', 'nice
trail', '1', '1');
```

```
INSERT INTO Review (star, Review_content, Profile_no, Trail_no) VALUES ( '4', 'it
makes me happy, i enjoy it', '3', '2');
```

```
INSERT INTO Comment ( Profile_no, Trail_no, Comment_content, Comment_time)
VALUES ( '1', '1', 'i think it a little hard, but i like', '2023-11-19 23:59:17.000');
```

```
INSERT INTO Comment ( Profile_no, Trail_no, Comment_content, Comment_time)
VALUES ( '3', '2', 'it is so easy, ha ha', '2023-09-05 23:59:50.000');
```

```
INSERT INTO Profile_Achievement ( Profile_no, Achievement_no, Distance) VALUES  
( '1', '3', '0');
```

```
INSERT INTO Trail_Route ( Trail_no, Region_no, orders) VALUES ( '1', '1', '1');
```

```
INSERT INTO Trail_Route ( Trail_no, Region_no, orders) VALUES ( '1', '2', '2');
```

```
INSERT INTO Trail_Route ( Trail_no, Region_no, orders) VALUES ( '1', '3', '3');
```

```
INSERT INTO Trail_Route ( Trail_no, Region_no, orders) VALUES ( '2', '4', '1');
```

```
INSERT INTO Trail_Route ( Trail_no, Region_no, orders) VALUES ( '2', '5', '2');
```

```
INSERT INTO Trail_Route ( Trail_no, Region_no, orders) VALUES ( '2', '6', '3');
```

```
INSERT INTO Trail_Route ( Trail_no, Region_no, orders) VALUES ( '3', '7', '1');
```

```
INSERT INTO Account (Email, Password, Profile_no) VALUES  
( 'ada@plymouth.ac.uk', 'insecurePassword', '3');
```

```
INSERT INTO Account (Email, Password, Profile_no) VALUES  
( 'grace@plymouth.ac.uk', 'ISAD123!', '1');
```

```
INSERT INTO Account (Email, Password, Profile_no) VALUES ( 'tim@plymouth.ac.uk',  
'COMP2001!', '2');
```

```
INSERT INTO Follow ( Followed_no, Follower_no) VALUES ( 1, 2)
```

Exercise 4: View

```
CREATE VIEW Users AS
```

```
SELECT COALESCE(COUNT(Follow.Followed_no), 0) AS FollowerNumber ,
```

```
Profile.Profile_no
```

```
FROM Profile
```

```
LEFT JOIN Follow
```

```
ON Profile.Profile_no = Follow.Followed_no
```

```
GROUP BY Profile.Profile_no
```

Exercise 5: Procedure

```
CREATE PROCEDURE AddRegion (  
    @Location as VARCHAR(64)  
)  
AS  
  
BEGIN  
  
    INSERT INTO Region (Location) VALUES (@Location)  
  
END;  
  
CREATE PROCEDURE UpdateRegion (  
    @Region_no as int,  
    @Location as VARCHAR(64)  
)  
AS  
  
BEGIN  
  
    UPDATE Region set Location = @Location WHERE Region_no = @Region_no  
  
END;  
  
CREATE PROCEDURE DeleteRegion (  
    @Region_no as int  
)  
AS  
  
BEGIN  
  
    DELETE FROM Region WHERE Region_no = @Region_no  
  
END;
```

Exercise 6: Trigger

```
CREATE TRIGGER UpdateAchievementNo  
  
ON Profile_Achievement  
  
AFTER UPDATE  
  
AS
```

BEGIN

IF UPDATE(Distance)

BEGIN

UPDATE pa

SET pa.Achievement_no = (

SELECT TOP 1 a.Achievement_no

FROM Achievement a

WHERE a.Condition <= i.Distance

ORDER BY a.Condition DESC

)

FROM inserted i

JOIN Profile_Achievement pa ON pa.Data_no = i.Data_no

END

END