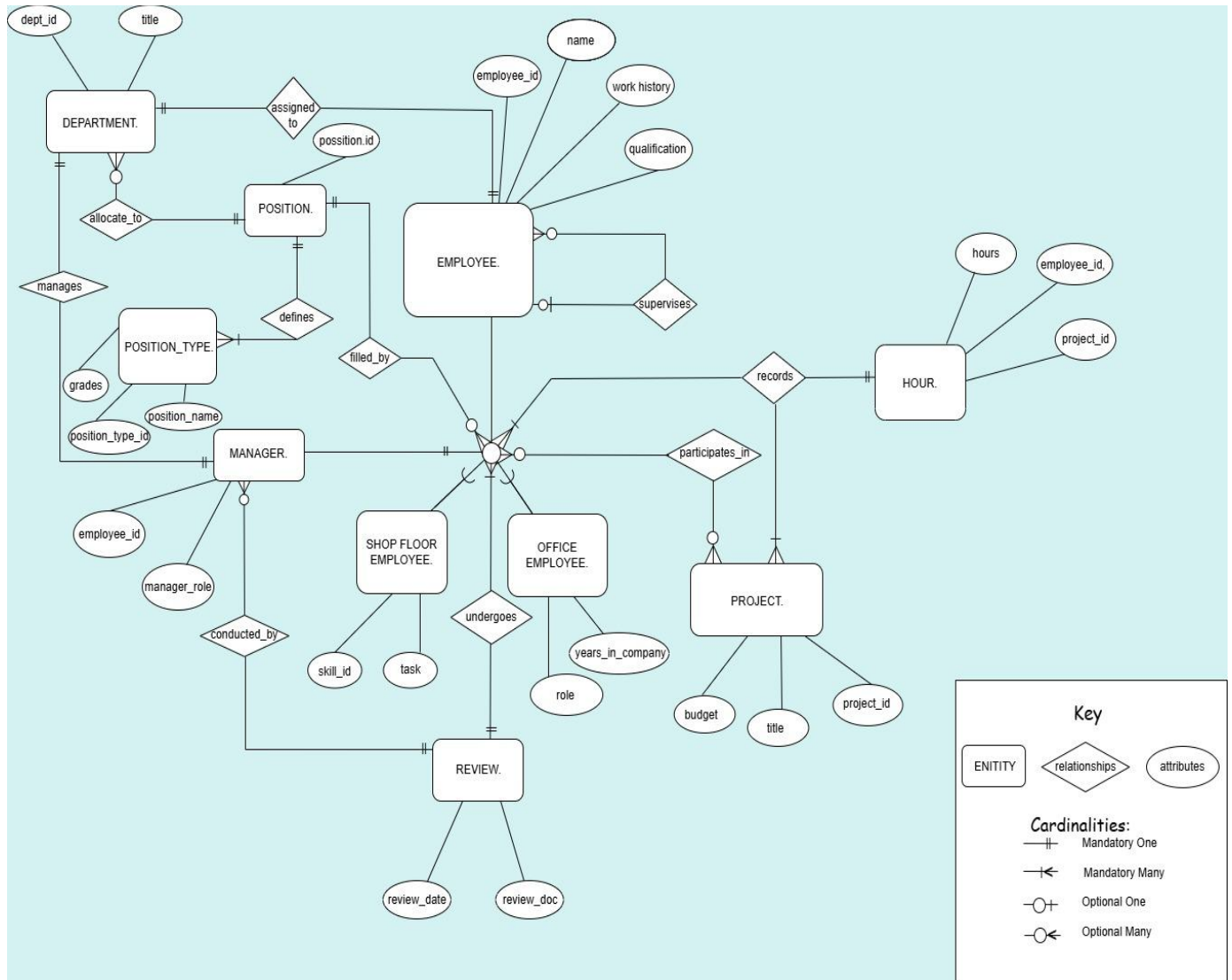


COURSE TITLE: DATA MANAGEMENT SYSTEM

STUDENT NAME_1: Nwamaka Rawlins Aziken

PART A: CONCEPTUAL MODELLING

QUESTION 1. Er DIAGRAM



QUESTION 2 - Rational Tables(with attributes) and justification

* DEPARTMENT (dept_id, title) - STRONG ENTITY

* POSITION_TYPE (position_type_id - PK, position_name, grades) - STRONG ENTITY

* POSITION (position_id - PK, position_type_id (FK → POSITION_TYPE), dept_id(FK-DEPARTMENT)
- ALLOCATED TO DEPARTMENT

* EMPLOYEE (employee_id - PK, name, work_history, qualification, dept_id [FK->DEPARTMENT],
supervisor_id [FK → EMPLOYEE, nullable]) - ASSIGNED TO DEPT + RECURSIVE SUPERVISES

* SHOP FLOOR EMPLOYEE (employee_id[PK = FK → EMPLOYEE], skill_id, task) - SUBCLASS

* OFFICE EMPLOYEE (employee_id[PK = FK → EMPLOYEE], role, years_in_company) - SUBCLASS

* MANAGER (employee_id[PK = FK → EMPLOYEE], manager_role) - WEAK ENTITY

* REVIEW (review_date, review_doc) - Weak on employee + conducted_by MANAGER

* PROJECT (project_id - PK, title, budget) - STRONG ENTITY

* HOUR (employee_id[FK → EMPLOYEE], project_id[FK → PROJECT], hours)

PART B: QUESTION 1 - SQL Programming

- 1.
2. CREATE TABLE Author (
3. AuthorId VARCHAR(100) PRIMARY [KEY](#),
4. Name VARCHAR(100) NOT **NULL**
5.);
- 6.
7. INSERT INTO Author (AuthorId, Name) VALUES
8. ('A011', 'Dingle R'),
9. ('A012', 'Ransome A'),
10. ('A013', 'Wardale R'),
11. ('A014', 'Alexander T'),
12. ('A015', 'Spurrier S');
- 13.
- 14.
- 15.
- 16.
17. CREATE TABLE Publisher (
18. PublisherId VARCHAR(10) PRIMARY [KEY](#),
19. PublisherName VARCHAR(100) NOT **NULL**
20.);
- 21.
22. INSERT INTO Publisher (PublisherId, PublisherName) VALUES
23. ('P01', 'Pearson'),
24. ('P02', 'HarperCollins'),
25. ('P03', 'Simon and Schuster');
- 26.

27.

28. CREATE TABLE Category (

29. CategoryId VARCHAR(10) PRIMARY [KEY](#),

30. Type VARCHAR(50) NOT **NULL**

31.);

32.

33. INSERT INTO Category (CategoryId, Type) VALUES

34. ('C911', 'Short stories'),

35. ('C912', 'Journal articles'),

36. ('C913', 'Biography'),

37. ('C914', 'Illustrations');

38.

39.

40.

41.

42. CREATE TABLE Publication (

43. PubId VARCHAR(10) PRIMARY [KEY](#),

44. AuthorId VARCHAR(10),

45. Title VARCHAR(100) NOT **NULL**,

46. CategoryId VARCHAR(10),

47. PublicationYear INT,

48. PublisherID VARCHAR(10),

49. FOREIGN [KEY](#) (AuthorId) REFERENCES Author(AuthorId),

50. FOREIGN [KEY](#) (CategoryId) REFERENCES Category(CategoryId),

51. FOREIGN [KEY](#) (PublisherID) REFERENCES Publisher(PublisherId)

52.);

53.

54. INSERT INTO

Publication (PubId, AuthorId, Title, CategoryId, PublicationYear, PublisherID) VALUES

55. ('P001', 'A011', 'The Blue Treacle', 'C911', 1911, 'P01'),

56. ('P002', 'A012', 'In Aleppo Once', 'C911', 2001, 'P01'),

57. ('P003', 'A012', 'Illustrating Arthur Ransome', 'C914', 1973, 'P03'),

58. ('P004', 'A012', 'Ransome the Artist', 'C914', 1994, 'P03'),

59. ('P005', 'A014', 'Bohemia In London', 'C912', 2008, 'P02'),

60. ('P006', 'A011', 'The Best of Childhood', 'C911', 2002, 'P01'),

61. ('P007', 'A015', 'Distilled Enthusiasms', 'C912', 2010, 'P02');

62.

63.

64.

65.

66. CREATE TABLE Users (

67. UserId VARCHAR(10) PRIMARY [KEY](#),

68. Name VARCHAR(100) NOT NULL,

69. Email VARCHAR(100) NOT **NULL**,

70. Password VARCHAR(100) NOT **NULL**,

71. UNIQUE (Email)

72.);

73.

74. INSERT INTO Users (UserId, Name, Email, Password) VALUES

75. ('U111', 'Kenderine J', 'KenderineJ@hotmail.com', 'Kenj2'),

76. ('U241', 'Wang F', 'WangF@hotmail.com', 'Wanf05'),

77. ('U55', 'Flavel K', 'FlavelK@hotmail.com', 'Flak77'),

78. ('U016', 'Zidane Z', 'ZidaneZ@hotmail.com', 'Zidz13'),

79. ('U033', 'Patel M', 'PatelM@hotmail.com', 'PatelManish'),

80. ('U121', 'Keita R', 'KeitaR@hotmail.com', 'Keir22');

81.

82. CREATE TABLE Request (

83. UserId VARCHAR(10),

84. PublicationId VARCHAR(10),

85. RequestDate DATE NOT NULL,

86. PRIMARY KEY (UserId, PublicationId),

87. FOREIGN KEY (UserId) REFERENCES Users(UserId),

88. FOREIGN KEY (PublicationId) REFERENCES Publication(PubId)

89.);

90.

91. INSERT INTO Request (UserId, PublicationId, RequestDate) VALUES

92. ('U016', 'P001', '2020-10-05'),

93. ('U241', 'P001', '2020-09-28'),

94. ('U55', 'P002', '2020-09-08'),

95. ('U016', 'P004', '2020-10-06'),

96. ('U121', 'P002', '2020-09-23');

OUTPUT -

Table Author

Result Grid	Filter Rows:	Edit:	Result Grid
AuthorId	Name		
A011	Dingle R		
A012	Ransome A		
A013	Wardale R		
A014	Alexander T		
A015	Spurrier S		
NULL	NULL		

Table Publisher

Result Grid	Filter Rows:	Edit:	Result Grid
PublisherId	PublisherName		
P01	Pearson		
P02	HarperCollins		
P03	Simon and Schuster		
NULL	NULL		

Table Category

Result Grid	Filter Rows:	Edit:	Result Grid
CategoryId	Type		
C911	Short stories		
C912	Journal articles		
C913	Biography		
C914	Illustrations		
NULL	NULL		

Table publication

Result Grid

Filter Rows:

Edit:

	PubId	AuthorId	Title	CategoryId	PublicationY
▶	P001	A011	The Blue Treacle	C911	1911
	P002	A012	In Aleppo Once	C911	2001
	P003	A012	Illustrating Arthur Ransome	C914	1973
	P004	A012	Ransome the Artist	C914	1994
	P005	A014	Bohemia In London	C912	2008
	P006	A011	The Best of Childhood	C911	2002
	P007	A015	Distilled Enthusiasms	C912	2010
*	NULL	NULL	NULL	NULL	NULL

Result Grid

Form Editor

Table Users

Result Grid	Filter Rows:	Edit:	Result Grid
UserId	Name	Email	Password
U016	Zidane Z	ZidaneZ@hotmail.com	Zidz13
U033	Patel M	PatelM@hotmail.com	PatelManish
U111	Kenderine J	KenderineJ@hotmail.com	Kenj2
U121	Keita R	KeitaR@hotmail.com	Keir22
U241	Wang F	WangF@hotmail.com	Wanf05
U55	Flavel K	FlavelK@hotmail.com	Flak77
NULL	NULL	NULL	NULL

Table Request

Result Grid

Filter Rows:

Edit:

	UserId	PublicationId	RequestDate
▶	U016	P001	2020-10-05
	U016	P004	2020-10-06
	U121	P002	2020-09-23
	U241	P001	2020-09-28
	U55	P002	2020-09-08
✱	NULL	NULL	NULL

Result Grid

Form Editor

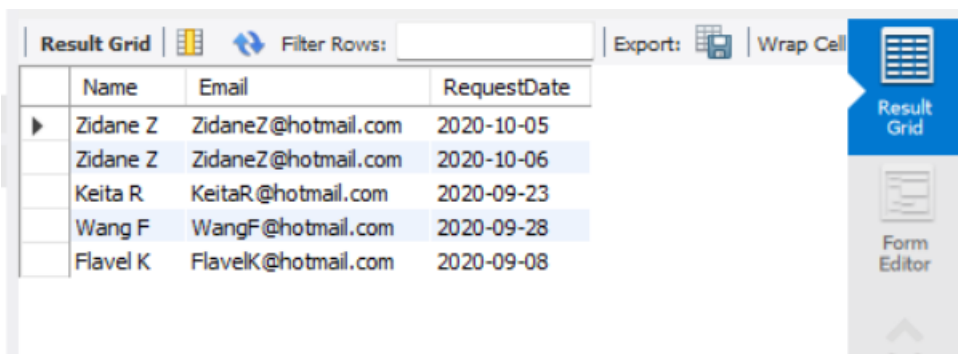
PART B: Question 2a.

- Name & email of user and dates of their request.

input:

1. **USE** mydb;
2. **SELECT**
3. Users.Name,
4. Users.Email,
5. **Request.RequestDate**
6. **FROM**
7. Users
8. **JOIN**
9. Request ON Users.UserId = Request.UserId;

Output



	Name	Email	RequestDate
▶	Zidane Z	ZidaneZ@hotmail.com	2020-10-05
	Zidane Z	ZidaneZ@hotmail.com	2020-10-06
	Keita R	KeitaR@hotmail.com	2020-09-23
	Wang F	WangF@hotmail.com	2020-09-28
	Flavel K	FlavelK@hotmail.com	2020-09-08

PART B: Question 2b

- Detail of publication request made in Sept. 2020

1. **USE** mydb;
2. **SELECT**
3. Request.PublicationId,
4. Publication.Title,
5. **DATE_FORMAT**(Request.RequestDate, '%d-%b-%Y') **AS RequestDate**
6. **FROM**
7. Request
8. **JOIN**
9. Publication **ON** Request.PublicationId = Publication.PubId
10. **WHERE**
11. MONTH(Request.RequestDate) = 9 **AND** YEAR(Request.RequestDate) = 2020
12. **ORDER BY**
13. Request.RequestDate **DESC**;

Output:

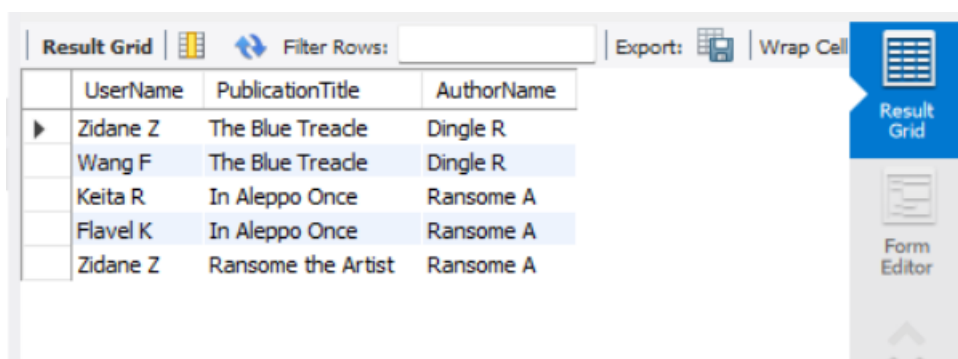
PublicationId	Title	RequestDate
P001	The Blue Treadle	28-Sep-2020
P002	In Aleppo Once	23-Sep-2020
P002	In Aleppo Once	08-Sep-2020

PART B: Question 2c

1. SELECT
2. Users.Name AS UserName,
3. Publication.Title AS PublicationTitle,
4. **Author.Name AS AuthorName**
5. FROM
6. Request
7. JOIN
8. Users ON Request.UserId = Users.UserId
9. JOIN
10. Publication ON Request.PublicationId = Publication.PubId
11. JOIN
12. Author ON Publication.AuthorId = Author.AuthorId;

names of users, publication title & and author name.

Output:



The screenshot shows a software interface with a 'Result Grid' tab selected. The grid contains 5 rows of data. The columns are 'UserName', 'PublicationTitle', and 'AuthorName'. The first two rows have 'The Blue Tread' as the publication title, and the last three rows have 'In Aleppo Once' or 'Ransome the Artist' as the publication title. The authors are 'Dingle R' for the first two rows and 'Ransome A' for the last three rows.

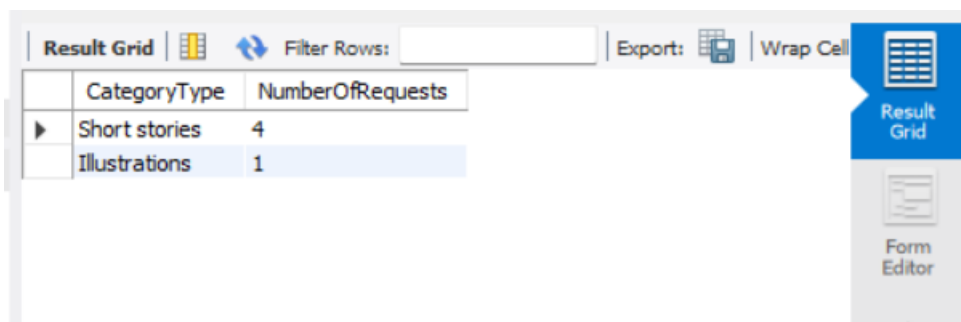
	UserName	PublicationTitle	AuthorName
▶	Zidane Z	The Blue Tread	Dingle R
	Wang F	The Blue Tread	Dingle R
	Keita R	In Aleppo Once	Ransome A
	Flavel K	In Aleppo Once	Ransome A
	Zidane Z	Ransome the Artist	Ransome A

PART B: Question 2d

1. SELECT
2. Category.Type AS CategoryType,
3. COUNT(Request.PublicationId) AS NumberOfRequests
4. FROM
5. Request
6. JOIN
7. Publication ON Request.PublicationId = Publication.PubId
8. JOIN
9. Category ON Publication.CategoryId = Category.CategoryId
10. GROUP BY
11. Category.Type
12. ORDER BY
13. NumberOfRequests DESC;

- Number of publications requested for each category.

Output:



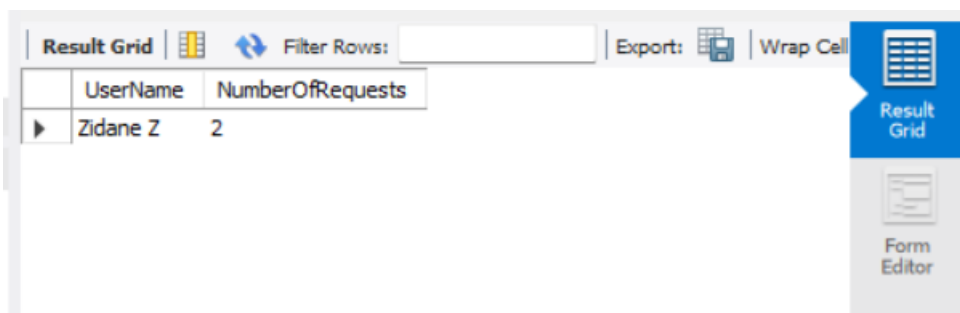
	CategoryType	NumberOfRequests
▶	Short stories	4
	Illustrations	1

PART B: Question 2e

- users who requested more than 1 publication

1. SELECT
2. Users.Name AS UserName,
3. COUNT(Request.PublicationId) AS NumberOfRequests
4. **FROM**
5. Request
6. JOIN
7. Users ON Request.UserId = Users.UserId
8. GROUP BY
9. **Users.UserId, Users.Name**
10. HAVING
11. COUNT(Request.PublicationId) > 1;

Output:



	UserName	NumberOfRequests
▶	Zidane Z	2