CREATE TABLE CourseType (

CourseCode VARCHAR (10) NOT NULL,

CourseTitle VARCHAR (200) NOT NULL,

CourseLevel VARCHAR (50) NOT NULL,

CONSTRAINT CourseType\_CourseCode\_pk PRIMARY KEY(CourseCode));

INSERT INTO CourseType VALUES

('CIMW1', 'Introduction to Microsoft Word', 'Beginner');

INSERT INTO CourseType VALUES

('CIMW2', 'Advanced Microsoft Word', 'Advanced');

INSERT INTO CourseType VALUES

('CIES1', 'Introduction to Excel', 'Beginner');

INSERT INTO CourseType VALUES

('CAES1', 'Advanced Excel Skills', 'Advanced');

INSERT INTO CourseType VALUES

('CJAV1', 'Introduction to Java', 'Beginner');

INSERT INTO CourseType VALUES

('CPHP1', 'Introduction to PHP', 'Beginner');

INSERT INTO CourseType VALUES

('CNET1', 'Networking Basics', 'Beginner');

INSERT INTO CourseType VALUES

('CSEC1', 'Advanced Cyber Security', 'Advanced');

INSERT INTO CourseType VALUES

('CSEC', 'Fundamentals of Cyber Security', 'Beginner');

INSERT INTO CourseType VALUES

('CMAL', 'Introduction to Machine Learning', 'Beginner');

CREATE TABLE AllocatedStudent(

StudentNO NUMBER (3) NOT NULL,

StudentName VARCHAR (20) NOT NULL,

Email VARCHAR (50) NOT NULL,

PhoneNO VARCHAR (20) NOT NULL,

CONSTRAINT AllocatedStudent\_StudentNO\_pk PRIMARY KEY (StudentNO));

INSERT INTO AllocatedStudent VALUES

(135, 'Alice Whitney', 'alicewhitney@gmail.com', '333-444-2222');

INSERT INTO AllocatedStudent VALUES

(164, 'Johnson Smith', 'johns@gmail.com', '333-123-4567');

INSERT INTO AllocatedStudent VALUES

(258, 'Charlie Lean', 'charlielean@gmail.com', '333-567-9876');

INSERT INTO AllocatedStudent VALUES

(262, 'Dan Rose', 'danrose@gmail.com', '333-445-2345');

INSERT INTO AllocatedStudent VALUES

(269, 'Bruce Lock', 'brucelock@gmail.com', '333-987-1234');

INSERT INTO AllocatedStudent VALUES

(384, 'Fiona Gold', 'fionagold@gmail.com', '333-124-6752');

INSERT INTO AllocatedStudent VALUES

(395, 'Barry Fab', 'barryfab@gmail.com', '333-456-4867');

INSERT INTO AllocatedStudent VALUES

(422, 'Diamond Grape', 'diamondg@gmail.com', '333-456-3456');

INSERT INTO AllocatedStudent VALUES

(423, 'Uju Okoye', 'uj@gmail.com', '333-455-1456');

INSERT INTO AllocatedStudent VALUES

(425, 'Okpa James', 'okpa@gmail.com', '333-666-2134');

INSERT INTO AllocatedStudent VALUES

(426, 'Chuks Cliv', 'cc@gmail.com', '333-898-2134');

INSERT INTO AllocatedStudent VALUES

(427, 'Ibe Clint', 'ibeclinton@gmail.com', '333-956-7896');

INSERT INTO AllocatedStudent VALUES

(428, 'Will Bill', 'willbill@gmail.com', '333-111-8989');

INSERT INTO AllocatedStudent VALUES

(429, 'Edith Bruce', 'edith@gmail.com', '333-123-7777');

INSERT INTO AllocatedStudent VALUES

(430, 'BaK Tak', 'baktak@gmail.com', '333-143-8565');

INSERT INTO AllocatedStudent VALUES

(431, 'Ota Baa', 'ota@gmail.com', '333-444-4123');

INSERT INTO AllocatedStudent VALUES

(432, 'Ella Race', 'er@gmail.com', '333-555-5556');

INSERT INTO AllocatedStudent VALUES

(433, 'Reed Crace', 'reed@gmail.com', '333-343-2345');

INSERT INTO AllocatedStudent VALUES

(435, 'Glory Bless', 'gloryb@gmail.com', '333-344-2856');

INSERT INTO AllocatedStudent VALUES

(436, 'Yub Jak', 'yub@gmail.com', '333-382-1234');

INSERT INTO AllocatedStudent VALUES

(437, 'Rach Tab', 'rach@gmail.com', '333-421-4567');

INSERT INTO AllocatedStudent VALUES

(438, 'Dylan Kyle', 'dylan@gmail.com', '333-588-4567');

INSERT INTO AllocatedStudent VALUES

(439, 'Crag Abel', 'cragabel@gmail.com', '333-111-0987');

INSERT INTO AllocatedStudent VALUES

(440, 'Ken Bees', 'kenbees@gmail.com', '333-656-3456');

INSERT INTO AllocatedStudent VALUES

(441, 'Oga Vance', 'oga@gmail.com', '333-777-8787');

INSERT INTO AllocatedStudent VALUES

(442, 'Chef Che', 'chee@gmail.com', '333-565-8045');

INSERT INTO AllocatedStudent VALUES

(443, 'Kanke Manny', 'km@gmail.com', '333-142-1423');

INSERT INTO AllocatedStudent VALUES

(444, 'Ony Gab', 'onygab@gmail.com', '333-143-1987');

CREATE TABLE Room (

RoomNO NUMBER (2) NOT NULL,

RoomName VARCHAR (50) NOT NULL,

RoomType VARCHAR (50) NOT NULL,

RoomCapacity NUMBER (3) NOT NULL,

CONSTRAINT Room\_RoomNO\_pk PRIMARY KEY (RoomNO));

INSERT INTO Room VALUES

(11, 'Computer Suite', 'Computer Lab', 40);

INSERT INTO Room VALUES

(13, 'Multipurpose Room', 'Lecture Hall', 100);

INSERT INTO Room VALUES

(15, 'TRJ4', 'Standard Classroom', 50);

INSERT INTO Room VALUES

(16, 'Vivi Area', 'AV facilities', 35);

CREATE TABLE Trainer (

TrainerNO NUMBER (4) NOT NULL,

TrainerName VARCHAR (20) NOT NULL,

Expertise VARCHAR (50) NOT NULL,

Email VARCHAR (50) NOT NULL,

PhoneNO VARCHAR (20) NOT NULL,

CONSTRAINT Trainer\_TrainerNO\_pk PRIMARY KEY (TrainerNO));

INSERT INTO Trainer VALUES

(7721, 'June Grace', 'Microsoft Word', 'june@gtb.co', '333-111-4532');

INSERT INTO Trainer VALUES

(7742, 'Love Smith', 'Excel', 'lovesmith@gtb.co', '333-222-4545');

INSERT INTO Trainer VALUES

(7758, 'Kanye Blue', 'Programming', 'kanyeb@gtb.co', '333-419-9999');

INSERT INTO Trainer VALUES

(7764, 'David West', 'Cyber Security', 'davidwest@gbt.co', '333-444-1928');

CREATE TABLE CurrentCourse (

CourseCode VARCHAR (10) NOT NULL,

StartDate DATE NOT NULL,

Duration NUMBER (2) NOT NULL,

MaxNoStudents NUMBER (3) NOT NULL,

CourseCost NUMBER (10,2),

RoomNO NUMBER (2) NOT NULL,

TrainerNO NUMBER (4) NOT NULL,

CONSTRAINT CurrentCourse\_CoursecodeStartDate\_pk PRIMARY KEY (CourseCode, StartDate),

CONSTRAINT CurrentCourse\_Coursecode\_fk FOREIGN KEY (CourseCode) REFERENCES CourseType(CourseCode),

CONSTRAINT CurrentCourse\_RoomN0\_fk FOREIGN KEY (RoomNO) REFERENCES Room (RoomNO),

CONSTRAINT CurrentCourse\_TrainerNO\_fk FOREIGN KEY (TrainerNO) REFERENCES Trainer (TrainerNO)

);

INSERT INTO CurrentCourse VALUES

('CIMW1', '20-NOV-23', 3, 20, 100, 13, 7721);

INSERT INTO CurrentCourse VALUES

('CIES1', '23-NOV-23', 3, 25, 120, 11, 7742);

INSERT INTO CurrentCourse VALUES

('CJAV1', '28-NOV-23', 3, 15, 160, 15, 7758);

INSERT INTO CurrentCourse VALUES

('CIMW2', '04- DEC-23', 5, 20, 130, 13, 7721);

INSERT INTO CurrentCourse VALUES

('CAES1', '11-DEC-23', 5, 25, 180, 11, 7742);

INSERT INTO CurrentCourse VALUES

('CNET1', '08-JAN-24', 3, 20, 150, 16, 7764);

INSERT INTO CurrentCourse VALUES

('CPHP1', '15-JAN-24', 5, 15, 250, 15, 7758);

INSERT INTO CurrentCourse VALUES

('CSEC1', '22-JAN-24', 5, 10, 300, 16, 7764);

INSERT INTO CurrentCourse VALUES

('CIMW1', '29-JAN-24', 3, 20, 100, 13, 7721);

INSERT INTO CurrentCourse VALUES

('CSEC1', '12-FEB-24', 5, 10, 300, 16, 7764);

CREATE TABLE Allocation (

AllocationNO NUMBER (3) NOT NULL,

StudentNO NUMBER (3) NOT NULL,

CourseCode VARCHAR (10) NOT NULL,

StartDate DATE NOT NULL,

CONSTRAINT Allocation\_AllocationNO\_pk PRIMARY KEY (AllocationNO),

CONSTRAINT Allocation\_StudentNO\_fk FOREIGN KEY (StudentNO) REFERENCES AllocatedStudent(StudentNO),

CONSTRAINT Allocation\_CourseCodeStartDate\_fk FOREIGN KEY (CourseCode, StartDate) REFERENCES CurrentCourse(CourseCode, StartDate)

);

INSERT INTO Allocation VALUES

(101, 135, 'CIMW1', '20-NOV-23');

INSERT INTO Allocation VALUES

(102, 262, 'CIMW1', '20-NOV-23');

INSERT INTO Allocation VALUES

(103, 164, 'CIMW1', '20-NOV-23');

INSERT INTO Allocation VALUES

(104, 269, 'CIMW1', '20-NOV-23');

INSERT INTO Allocation VALUES

(105, 425, 'CIMW1', '20-NOV-23');

INSERT INTO Allocation VALUES

(106, 426, 'CIMW1', '20-NOV-23');

INSERT INTO Allocation VALUES

(107, 164, 'CIES1', '23-NOV-23');

INSERT INTO Allocation VALUES

(108, 262, 'CIES1', '23-NOV-23');

INSERT INTO Allocation VALUES

(109, 425, 'CIES1', '23-NOV-23');

INSERT INTO Allocation VALUES

(110, 426, 'CIES1', '23-NOV-23');

INSERT INTO Allocation VALUES

(111, 258, 'CJAV1', '28-NOV-23');

INSERT INTO Allocation VALUES

(112, 427, 'CJAV1', '28-NOV-23');

INSERT INTO Allocation VALUES

(113, 428, 'CJAV1', '28-NOV-23');

INSERT INTO Allocation VALUES

(114, 429, 'CJAV1', '28-NOV-23');

INSERT INTO Allocation VALUES

(115, 430, 'CJAV1', '28-NOV-23');

INSERT INTO Allocation VALUES

(116, 262, 'CIMW2', '04- DEC-23');

INSERT INTO Allocation VALUES

(117, 164, 'CIMW2', '04- DEC-23');

INSERT INTO Allocation VALUES

(118, 269, 'CIMW2', '04- DEC-23');

INSERT INTO Allocation VALUES

(119, 425, 'CIMW2', '04- DEC-23');

INSERT INTO Allocation VALUES

(120, 426, 'CIMW2', '04- DEC-23');

INSERT INTO Allocation VALUES

(121,164, 'CAES1', '11-DEC-23');

INSERT INTO Allocation VALUES

(122, 269, 'CAES1', '11-DEC-23');

INSERT INTO Allocation VALUES

(123, 426, 'CAES1', '11-DEC-23');

INSERT INTO Allocation VALUES

(124, 384, 'CNET1', '08-JAN-24');

INSERT INTO Allocation VALUES

(125, 431, 'CNET1', '08-JAN-24');

INSERT INTO Allocation VALUES

(126, 432, 'CNET1', '08-JAN-24');

INSERT INTO Allocation VALUES

(127, 433, 'CNET1', '08-JAN-24');

INSERT INTO Allocation VALUES

(128, 269, 'CNET1', '08-JAN-24');

INSERT INTO Allocation VALUES

(129, 395, 'CPHP1', '15-JAN-24');

INSERT INTO Allocation VALUES

(130, 437, 'CPHP1', '15-JAN-24');

INSERT INTO Allocation VALUES

(131, 439, 'CPHP1', '15-JAN-24');

INSERT INTO Allocation VALUES

(132, 422, 'CSEC1', '22-JAN-24');

INSERT INTO Allocation VALUES

(133, 435, 'CSEC1', '22-JAN-24');

INSERT INTO Allocation VALUES

(134, 436, 'CSEC1', '22-JAN-24');

INSERT INTO Allocation VALUES

(135, 438, 'CSEC1', '22-JAN-24');

INSERT INTO Allocation VALUES

(136, 440, 'CSEC1', '22-JAN-24');

INSERT INTO Allocation VALUES

(137, 441, 'CSEC1', '22-JAN-24');

INSERT INTO Allocation VALUES

(138, 423, 'CIMW1', '29-JAN-24');

INSERT INTO Allocation VALUES

(139, 442, 'CIMW1', '29-JAN-24');

INSERT INTO Allocation VALUES

(140, 443, 'CIMW1', '29-JAN-24');

INSERT INTO Allocation VALUES

(141, 444, 'CIMW1', '29-JAN-24');

INSERT INTO Allocation VALUES

(142, 422, 'CSEC1', '12-FEB-24');

INSERT INTO Allocation VALUES

(143, 262, 'CSEC1', '12-FEB-24');

INSERT INTO Allocation VALUES

(144, 164, 'CSEC1', '12-FEB-24');

INSERT INTO Allocation VALUES

(145, 428, 'CSEC1', '12-FEB-24');

1.

SELECT CourseCode, StartDate

FROM CurrentCourse

ORDER BY CourseCode, StartDate;

|  |  |
| --- | --- |
| **COURSECODE** | **STARTDATE** |
| CAES1 | 11-DEC-23 |
| CIES1 | 23-NOV-23 |
| CIMW1 | 20-NOV-23 |
| CIMW1 | 29-JAN-24 |
| CIMW2 | 04-DEC-23 |
| CJAV1 | 28-NOV-23 |
| CNET1 | 08-JAN-24 |
| CPHP1 | 15-JAN-24 |
| CSEC1 | 22-JAN-24 |
| CSEC1 | 12-FEB-24 |

2.

SELECT CourseCode, CourseTitle

FROM CourseType

WHERE CourseTitle LIKE '%Introduction%';

|  |  |
| --- | --- |
| **COURSECODE** | **COURSETITLE** |
| CIMW1 | Introduction to Microsoft Word |
| CIES1 | Introduction to Excel |
| CJAV1 | Introduction to Java |
| CPHP1 | Introduction to PHP |
| CMAL | Introduction to Machine Learning |

3.

SELECT \* FROM (

SELECT

'Most Expensive Course' AS Description, CourseCode, StartDate, Duration, CourseCost

FROM CurrentCourse

WHERE CourseCost = (SELECT MAX(CourseCost) FROM CurrentCourse)

ORDER BY StartDate

)

WHERE ROWNUM = 1

UNION

SELECT \* FROM (

SELECT

'Least Expensive Course' AS Description, CourseCode, StartDate, Duration, CourseCost

FROM CurrentCourse

WHERE CourseCost = (SELECT MIN(CourseCost) FROM CurrentCourse)

ORDER BY StartDate

)

WHERE ROWNUM = 1;

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **DESCRIPTION** | **COURSECODE** | **STARTDATE** | **DURATION** | **COURSECOST** |
| Least Expensive Course | CIMW1 | 20-NOV-23 | 3 | 100 |
| Most Expensive Course | CSEC1 | 22-JAN-24 | 5 | 300 |

4.

SELECT cc.CourseCode, cc.StartDate, COUNT(a.StudentNO) AS NumberOfStudents

FROM CurrentCourse cc

JOIN Allocation a ON cc.CourseCode = a.CourseCode AND cc.StartDate = a.StartDate

GROUP BY cc.CourseCode, cc.StartDate;

|  |  |  |
| --- | --- | --- |
| **COURSECODE** | **STARTDATE** | **NUMBEROFSTUDENTS** |
| CJAV1 | 28-NOV-23 | 5 |
| CAES1 | 11-DEC-23 | 3 |
| CPHP1 | 15-JAN-24 | 3 |
| CSEC1 | 22-JAN-24 | 6 |
| CIMW1 | 20-NOV-23 | 6 |
| CIMW2 | 04-DEC-23 | 5 |
| CIMW1 | 29-JAN-24 | 4 |
| CIES1 | 23-NOV-23 | 4 |
| CSEC1 | 12-FEB-24 | 4 |
| CNET1 | 08-JAN-24 | 5 |

5.

SELECT CourseCode, StartDate

FROM CurrentCourse

WHERE StartDate BETWEEN '01-NOV-23' AND '20-JAN-24';

|  |  |
| --- | --- |
| **COURSECODE** | **STARTDATE** |
| CAES1 | 11-DEC-23 |
| CIES1 | 23-NOV-23 |
| CIMW1 | 20-NOV-23 |
| CIMW2 | 04-DEC-23 |
| CJAV1 | 28-NOV-23 |
| CNET1 | 08-JAN-24 |
| CPHP1 | 15-JAN-24 |

6.

SELECT ct.CourseCode, COUNT(cc.CourseCode) AS NumberOfActualCoursesRunning

FROM CourseType ct

JOIN CurrentCourse cc ON ct.CourseCode = cc.CourseCode

WHERE cc.StartDate BETWEEN '01-NOV-23' AND '12-FEB-24'

GROUP BY ct.CourseCode;

|  |  |
| --- | --- |
| **COURSECODE** | **NUMBEROFACTUALCOURSESRUNNING** |
| CAES1 | 1 |
| CIES1 | 1 |
| CIMW1 | 2 |
| CIMW2 | 1 |
| CJAV1 | 1 |
| CNET1 | 1 |
| CPHP1 | 1 |
| CSEC1 | 2 |

7.

SELECT cc.CourseCode, cc.StartDate,

TRUNC ((cc.StartDate - DATE '2023-11-20') / 7) + 1 AS WeekNumber,

r.RoomNO, r.RoomName, r.RoomType, t.TrainerName

FROM CurrentCourse cc

JOIN Room r ON cc.RoomNO = r.RoomNO

JOIN Trainer t ON cc.TrainerNO = t.TrainerNO

ORDER BY WeekNumber, cc.StartDate, cc.CourseCode;

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **COURSECODE** | **STARTDATE** | **WEEKNUMBER** | **ROOMNO** | **ROOMNAME** | **ROOMTYPE** | **TRAINERNAME** |
| CIMW1 | 20-NOV-23 | 1 | 13 | Multipurpose Room | Lecture Hall | June Grace |
| CIES1 | 23-NOV-23 | 1 | 11 | Computer Suite | Computer Lab | Love Smith |
| CJAV1 | 28-NOV-23 | 2 | 15 | TRJ4 | Standard Classroom | Kanye Blue |
| CIMW2 | 04-DEC-23 | 3 | 13 | Multipurpose Room | Lecture Hall | June Grace |
| CAES1 | 11-DEC-23 | 4 | 11 | Computer Suite | Computer Lab | Love Smith |
| CNET1 | 08-JAN-24 | 8 | 16 | Vivi Area | AV facilities | David West |
| CPHP1 | 15-JAN-24 | 9 | 15 | TRJ4 | Standard Classroom | Kanye Blue |
| CSEC1 | 22-JAN-24 | 10 | 16 | Vivi Area | AV facilities | David West |
| CIMW1 | 29-JAN-24 | 11 | 13 | Multipurpose Room | Lecture Hall | June Grace |
| CSEC1 | 12-FEB-24 | 13 | 16 | Vivi Area | AV facilities | David West |

8.

SELECT a.StudentNO, s.StudentName, s.Email, s.PhoneNO

FROM Allocation a

JOIN AllocatedStudent s ON a.StudentNO = s.StudentNO

WHERE a.CourseCode = 'CSEC1' AND a.StartDate = '22-JAN-24';

|  |  |  |  |
| --- | --- | --- | --- |
| **STUDENTNO** | **STUDENTNAME** | **EMAIL** | **PHONENO** |
| 422 | Diamond Grape | diamondg@gmail.com | 333-456-3456 |
| 435 | Glory Bless | gloryb@gmail.com | 333-344-2856 |
| 436 | Yub Jak | yub@gmail.com | 333-382-1234 |
| 438 | Dylan Kyle | dylan@gmail.com | 333-588-4567 |
| 440 | Ken Bees | kenbees@gmail.com | 333-656-3456 |
| 441 | Oga Vance | oga@gmail.com | 333-777-8787 |

9.

SELECT cc.CourseCode, cc.StartDate AS DateRun, cc.CourseCost, COUNT(a.StudentNO) AS NumberOfStudents, (cc.CourseCost \* COUNT(a.StudentNO)) AS Revenue

FROM CurrentCourse cc

JOIN Allocation a ON cc.CourseCode = a.CourseCode AND cc.StartDate = a.StartDate

GROUP BY cc.CourseCode, cc.StartDate, cc.CourseCost;

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **COURSECODE** | **DATERUN** | **COURSECOST** | **NUMBEROFSTUDENTS** | **REVENUE** |
| CIES1 | 23-NOV-23 | 120 | 4 | 480 |
| CSEC1 | 12-FEB-24 | 300 | 4 | 1200 |
| CPHP1 | 15-JAN-24 | 250 | 3 | 750 |
| CIMW1 | 29-JAN-24 | 100 | 4 | 400 |
| CIMW1 | 20-NOV-23 | 100 | 6 | 600 |
| CAES1 | 11-DEC-23 | 180 | 3 | 540 |
| CNET1 | 08-JAN-24 | 150 | 5 | 750 |
| CIMW2 | 04-DEC-23 | 130 | 5 | 650 |
| CSEC1 | 22-JAN-24 | 300 | 6 | 1800 |
| CJAV1 | 28-NOV-23 | 160 | 5 | 800 |

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