STAT 475 HOMEWORK 3 (*due Thursday, November 7, 2024*)

Exercises for Handout 17 material: Explain the reason for selecting the correct answer, as well as the reason for NOT selecting EACH of the wrong answers.

* Quiz for Chapter 10 in the textbook: Questions 1 – 10.
* A00-201 Practice Exam: Questions 3, 11, 13, 14, 15, 24, 37, 54, 55, 56, 57, 60, 61, 64, 66, 69, 70, 71, 107, 108, 109, 110, 111, 113, 114, 115, 122, and 123.
* A00-211 Practice Exam: Questions 6, 8, 11, 12, 14, 21, 36, 49, 50, 55, 61, 68, and 69.

Exercises for Handout 18 material: Explain the reason for selecting the correct answer, as well as the reason for NOT selecting EACH of the wrong answers.

* Quiz for Chapter 11 in the textbook: Questions 1 – 8.
* Quiz for Chapter 19 in the textbook: Questions 1-10.
* A00-201 Practice Exam: Questions 67 and 68.
* A00-211 Practice Exam: Questions 5, 41, and 67.

Exercises for Handout 19 material: Explain the reason for selecting the correct answer, as well as the reason for NOT selecting EACH of the wrong answers.

* Quiz for Chapter 20 in the textbook: Questions 1-10.
* Quiz for Chapter 21 in the textbook: Questions 1-10.
* A00-211 Practice Exam: Questions 15 and 43.

Exercises for Handout 20 material: Explain the reason for selecting the correct answer, as well as the reason for NOT selecting EACH of the wrong answers.

* Quiz for Chapter 1 in the advanced programming certification guide: Questions 1-10.

and the following

Exercise 1 . The data on visits to doctor’s office are presented below. Use proc sql to complete the assignment that follows.

**data** docvisits;

input patientID$ weekday$**5**-**13** score;

cards;

101 Friday 15

163 Wednesday 11

104 Friday 23

163 Thursday 13

123 Tuesday 10

104 Monday 20

157 Friday 21

101 Monday 10

112 Tuesday 11

157 Tuesday 10

123 Monday 9

123 Friday 9

101 Tuesday 11

112 Monday 9

157 Thursday 18

174 Monday 12

;

(a) Compute the number of patients.

(b) List patientIDs and the total number of visits for each patient.

(c) List the days of the week that visits were on and the total number of patients who visited each day.

Exercise 2.

data record;

input ID$ Gender$ Age Score;

cards;

259632 F 56 58

259632 F 56 41

259632 F 56 39

577763 F 67 40

577763 F 67 50

577763 F 67 39

577763 F 67 33

279645 M 52 24

279645 M 52 65

279645 M 52 66

279645 M 52 74

279645 M 52 85

694797 F 48 37

694797 F 48 85

684516 M 57 81

760076 M 62 45

760076 M 62 35

760076 M 62 38

760076 M 62 65

745795 F 74 85

745795 F 74 82

745795 F 74 77

745795 F 74 81

506301 M 78 70

506301 M 78 70

506301 M 78 71

506301 M 78 67

406126 M 62 60

406126 M 62 50

477908 M 70 50

477908 M 70 63

477908 M 70 51

188994 F 58 43

188994 F 58 34

;

/\* (a) How many patients are in this data set? \*/

/\* (b) How many patients by gender?\*/

/\* (c) How many patients older than 62? \*/

/\* (d) How many women older than 65?\*/

/\* (e) How many doctor visits are there for each patient? \*/

/\* (f) How many doctor visits are there for each patient with medical test score above 45? \*/

/\*(g) What are the minimum, average, and maximum scores for each patient? \*/

/\* (h) List all patients who have the average scores for all their visits larger than 60?\*/

Exercises for Handout 21 material: Explain the reason for selecting the correct answer, as well as the reason for NOT selecting EACH of the wrong answers.

* Quiz for Chapter 2 in the advanced programming certification guide: Questions 1-10.

Exercises for Handout 22 material: Explain the reason for selecting the correct answer, as well as the reason for NOT selecting EACH of the wrong answers.

* Quiz for Chapter 3 in the advanced programming certification guide: Questions 1-6.

Exercise 3. The data sets contain stock prices for Tesla and Amazon at the opening and closing of the stock exchange (open/close).

**data** TSLA;

input date mmddyy10. open close;

cards;

12/30/2021 1061.32 1070.33

12/31/2021 1073.43 1056.78

1/3/2022 1147.75 1199.78

1/4/2022 1189.55 1149.58

1/5/2022 1146.65 1088.11

1/6/2022 1077.00 1064.69

1/7/2022 1080.36 1026.95

1/10/2022 1000.00 1058.11

1/11/2022 1053.67 1064.40

;

**data** AMZN;

input date mmddyy10. open close;

cards;

12/23/2021 3408.56 3421.37

12/27/2021 3420.73 3393.38

12/28/2021 3403.64 3413.21

12/29/2021 3416.80 3384.02

12/30/2021 3394.00 3372.88

12/31/2021 3379.12 3334.34

1/3/2022 3351.00 3408.09

1/4/2022 3408.76 3350.44

;

Use proc sql with inner join, left join, right join, and full join to obtain the following outputs:

| **date** | **TSLA\_Open** | **TSLA\_close** | **AMZN\_open** | **AMZN\_close** |
| --- | --- | --- | --- | --- |
| 12/30/21 | 1061.32 | 1070.33 | 3394 | 3372.88 |
| 12/31/21 | 1073.43 | 1056.78 | 3379.12 | 3334.34 |
| 01/03/22 | 1147.75 | 1199.78 | 3351 | 3408.09 |
| 01/04/22 | 1189.55 | 1149.58 | 3408.76 | 3350.44 |

| **date** | **TSLA\_Open** | **TSLA\_close** | **AMZN\_open** | **AMZN\_close** |
| --- | --- | --- | --- | --- |
| 12/30/21 | 1061.32 | 1070.33 | 3394 | 3372.88 |
| 12/31/21 | 1073.43 | 1056.78 | 3379.12 | 3334.34 |
| 01/03/22 | 1147.75 | 1199.78 | 3351 | 3408.09 |
| 01/04/22 | 1189.55 | 1149.58 | 3408.76 | 3350.44 |
| 01/05/22 | 1146.65 | 1088.11 | . | . |
| 01/06/22 | 1077 | 1064.69 | . | . |
| 01/07/22 | 1080.36 | 1026.95 | . | . |
| 01/10/22 | 1000 | 1058.11 | . | . |
| 01/11/22 | 1053.67 | 1064.4 | . | . |

| **date** | **TSLA\_Open** | **TSLA\_close** | **AMZN\_open** | **AMZN\_close** |
| --- | --- | --- | --- | --- |
| 12/23/21 | . | . | 3408.56 | 3421.37 |
| 12/27/21 | . | . | 3420.73 | 3393.38 |
| 12/28/21 | . | . | 3403.64 | 3413.21 |
| 12/29/21 | . | . | 3416.8 | 3384.02 |
| 12/30/21 | 1061.32 | 1070.33 | 3394 | 3372.88 |
| 12/31/21 | 1073.43 | 1056.78 | 3379.12 | 3334.34 |
| 01/03/22 | 1147.75 | 1199.78 | 3351 | 3408.09 |
| 01/04/22 | 1189.55 | 1149.58 | 3408.76 | 3350.44 |

| **date** | **TSLA\_Open** | **TSLA\_close** | **date** | **AMZN\_open** | **AMZN\_close** |
| --- | --- | --- | --- | --- | --- |
| . | . | . | 12/23/21 | 3408.56 | 3421.37 |
| . | . | . | 12/27/21 | 3420.73 | 3393.38 |
| . | . | . | 12/28/21 | 3403.64 | 3413.21 |
| . | . | . | 12/29/21 | 3416.8 | 3384.02 |
| 12/30/21 | 1061.32 | 1070.33 | 12/30/21 | 3394 | 3372.88 |
| 12/31/21 | 1073.43 | 1056.78 | 12/31/21 | 3379.12 | 3334.34 |
| 01/03/22 | 1147.75 | 1199.78 | 01/03/22 | 3351 | 3408.09 |
| 01/04/22 | 1189.55 | 1149.58 | 01/04/22 | 3408.76 | 3350.44 |
| 01/05/22 | 1146.65 | 1088.11 | . | . | . |
| 01/06/22 | 1077 | 1064.69 | . | . | . |
| 01/07/22 | 1080.36 | 1026.95 | . | . | . |
| 01/10/22 | 1000 | 1058.11 | . | . | . |
| 01/11/22 | 1053.67 | 1064.4 | . | . | . |

Exercises for Handout 23 material: Explain the reason for selecting the correct answer, as well as the reason for NOT selecting EACH of the wrong answers.

* Quiz for Chapter 4 in the advanced programming certification guide: Questions 1-10.

Hint: Read about keyword CORR on your own.

Exercise 4. The data sets contain bitcoin prices on opening and closing of stock market.

**data** BTC1;

input date mmddyy10. open close;

cards;

12/28/2021 50679.85 47588.85

12/29/2021 47623.87 46444.71

12/30/2021 46490.60 47178.12

12/31/2021 47169.37 46306.44

1/1/2022 46311.74 47686.81

1/2/2022 47680.92 47345.21

1/3/2022 47343.54 46458.11

1/4/2022 46458.85 45897.57

;

**data** BTC2;

input date mmddyy10. open close;

cards;

12/31/2021 47169.37 46306.44

1/1/2022 46311.74 47686.81

1/2/2022 47680.92 47345.21

1/3/2022 47343.54 46458.11

1/4/2022 46458.85 45897.57

1/5/2022 45899.35 43569.00

1/6/2022 43565.51 43160.92

1/7/2022 43153.57 41557.90

;

Use except, intersect, union, and outer union to produce the outputs below.

| **date** | **open** | **close** |
| --- | --- | --- |
| 12/28/21 | 50679.85 | 47588.85 |
| 12/29/21 | 47623.87 | 46444.71 |
| 12/30/21 | 46490.6 | 47178.12 |

| **date** | **open** | **close** |
| --- | --- | --- |
| 01/05/22 | 45899.35 | 43569 |
| 01/06/22 | 43565.51 | 43160.92 |
| 01/07/22 | 43153.57 | 41557.9 |

| **date** | **open** | **close** |
| --- | --- | --- |
| 12/31/21 | 47169.37 | 46306.44 |
| 01/01/22 | 46311.74 | 47686.81 |
| 01/02/22 | 47680.92 | 47345.21 |
| 01/03/22 | 47343.54 | 46458.11 |
| 01/04/22 | 46458.85 | 45897.57 |

| **date** | **open** | **close** |
| --- | --- | --- |
| 12/28/21 | 50679.85 | 47588.85 |
| 12/29/21 | 47623.87 | 46444.71 |
| 12/30/21 | 46490.6 | 47178.12 |
| 12/31/21 | 47169.37 | 46306.44 |
| 01/01/22 | 46311.74 | 47686.81 |
| 01/02/22 | 47680.92 | 47345.21 |
| 01/03/22 | 47343.54 | 46458.11 |
| 01/04/22 | 46458.85 | 45897.57 |
| 01/05/22 | 45899.35 | 43569 |
| 01/06/22 | 43565.51 | 43160.92 |
| 01/07/22 | 43153.57 | 41557.9 |

| **date** | **open** | **close** | **date** | **open** | **close** |
| --- | --- | --- | --- | --- | --- |
| 12/28/21 | 50679.85 | 47588.85 | . | . | . |
| 12/29/21 | 47623.87 | 46444.71 | . | . | . |
| 12/30/21 | 46490.6 | 47178.12 | . | . | . |
| 12/31/21 | 47169.37 | 46306.44 | . | . | . |
| 01/01/22 | 46311.74 | 47686.81 | . | . | . |
| 01/02/22 | 47680.92 | 47345.21 | . | . | . |
| 01/03/22 | 47343.54 | 46458.11 | . | . | . |
| 01/04/22 | 46458.85 | 45897.57 | . | . | . |
| . | . | . | 12/31/21 | 47169.37 | 46306.44 |
| . | . | . | 01/01/22 | 46311.74 | 47686.81 |
| . | . | . | 01/02/22 | 47680.92 | 47345.21 |
| . | . | . | 01/03/22 | 47343.54 | 46458.11 |
| . | . | . | 01/04/22 | 46458.85 | 45897.57 |
| . | . | . | 01/05/22 | 45899.35 | 43569 |
| . | . | . | 01/06/22 | 43565.51 | 43160.92 |
| . | . | . | 01/07/22 | 43153.57 | 41557.9 |