Quiz 2 - DSC 10, Winter 2026

Full Name:

PID:

Quiz Time: ◯ 1PM ◯ 2PM

Instructions:

- This quiz consists of 5 questions. You have a total of 30 minutes to complete it.
- Please write **clearly** in the provided answer boxes; we will not grade work that appears elsewhere. Completely fill in bubbles and square boxes; if we cannot tell which option(s) you selected, you may lose points.

  ◯ A bubble means that you should only **select one choice**.

  ☐ A square box means you should **select all that apply**.
- If your answer is a string, make sure to put it in quotes. If your answer is a float, make sure to include a decimal point.
- You may use one handwritten sheet of notes. No calculators and no computers.
- Assume we have already run `import babypandas as bpd` and `import numpy as np`.

Person to your left:

Person to your right:

By signing below, you are agreeing that you will behave honestly and fairly during and after this quiz.

Signature:

Version A

Please do not open your quiz until instructed to do so.

You are hired as a data analyst for your local coffee shop. The `orders` DataFrame contains information about drink orders, where each row corresponds to an individual drink order. The columns are the type of `drink` (str); the `size` of the drink (str); whether the drink was ordered `to_go` (bool); whether the drink was `iced` (bool); a description of `modifications` made to the drink (str); the `price` of the drink (float); and the `day` of the week on which the drink was purchased (str, with 7 possible values).

	drink	size	to_go	iced	modifications	price	day
0	Latte	small	True	True	vanilla+lavender	6.25	M
1	Frappe	large	True	True	caramel	8.00	M
2	Americano	small	False	False	none	4.75	M
3	Drip	small	True	False	none	3.75	W
4	Macchiato	large	False	False	caramel	5.75	F
5	Espresso	shot	True	False	none	3.75	Su
6	Smoothie	large	True	True	kale+no banana	8.00	Su

Question 1

If there are zero modifications made to a drink, the entry in the `modifications` column will be `'none'`. Otherwise, all modifications will be distinct and separated by a `'+'` without any spaces. Complete the function `count_mods`, whose input is a single string formatted like the entries in the `modifications` column of `orders`. The function should return the number of modifications in the drink order. Then, use the `count_mods` function to assign a new column to `orders` called `num_mods`, which describes the number of modifications made to each drink in `orders`. For example, the entries of the `num_mods` column for rows 0,1,2 should be 2,1,0, respectively.

```
def count_mods(mod):
    if __(a)__:
        return 0
    else:
        return len(__(b)__)

orders = orders.assign(num_mods=__(c)__)
```

(a): [ ] (b): [ ]

(c): [ ]

PID: _____

Question 2

a) In `orders`, the probability that a latte is iced is 0.6. The probability that a drink is iced **and** a latte is 0.18. What is the probability of any order being a latte? (Give your answer as a number between 0 and 1.)

b) Consider the following code. Without writing any additional `babypandas` code, write a Python expression that evaluates to the probability that a drink has at least one modification.

```
df = (orders.get(['to_go', 'day', 'num_mods'])
            .groupby(['to_go', 'num_mods']).count()
            .reset_index())
w = df.get('day').sum()
x = df.get('day').count()
y = df[df.get('num_mods') == 0].get('day').sum()
z = df[df.get('num_mods') == 0].get('day').count()
```

Question 3

The distribution of `prices` in `orders` is summarized by the histogram below. If the cafe sold 700 drinks with a price **less than** 6 dollars, how many drinks did the cafe sell in total?



Total number of drinks:

Question 4

The cafe wants to know the average price of drinks on each day of the week. Write a Python expression to produce an appropriate bar chart to answer this question.

Question 5

A new cafe has opened across the street, and it only offers two drink sizes: `'small'` and `'large'`. It decides to compile its own DataFrame of drink orders called `drinks`, formatted in the exact same way as `orders`. In `drinks`, there are currently 10 `'small'` drinks and 5 `'large'` drinks. In the `orders` DataFrame, suppose that there are 400 `'small'` drinks. If the output of the following Python expression is `True`, how many `'large'` drinks are in the `orders` DataFrame? Fill in the blank with an integer answer, or bubble in "Not enough information" if you believe there is insufficient data given to answer this question.

```
orders.merge(drinks, on='size').shape[0] == 5000
```

◯ Not enough information.

PID: _____

Reminders:

- **Write your PID** on the front page and on the top right corner of page 3.
- If your answer is a string, make sure to put it in **quotes**.
- If your answer is a float, make sure to include a **decimal point**.
- Stay in your seat until the quiz is over. No leaving early.