HW 03 Autograder

Graded

Student

Sangwon Ji

Total Points

75 / 70 pts

Autograder Score

70.0 / 70.0

Passed Tests

Public Tests

Question 2

Early Submission Bonus **5** / 0 pts

✔ **+ 5 pts** Early Submission Bonus

+ 0 pts No bonus

Autograder Results

Autograder Output

```
  _________        __       __
 /  _____  \    __|  |__ __|  |__
|  /     \  |  |__    __|__    __|   ________    __  _____
| |       | |     |  |     |  |     |   __   |  |  |/ ____|
| |       | |     |  |     |  |     |  |__|  |  |    /
| |       | |     |  |     |  |     |  ______|  |   |
|  \_____/  |     |  |_    |  |_    |  |_____   |   |
 \_________/       \ __|    \ __|    \_______|  |___|
                                              v3.1.4
```

<IPython.core.display.HTML object>
<IPython.core.display.HTML object>
<IPython.core.display.HTML object>
Boston Table
<IPython.core.display.HTML object>
Manila Table
<IPython.core.display.HTML object>

------------------------------- GRADING SUMMARY --------------------------------

Error encountered while trying to verify scores with log:
'TestCaseResult' object has no attribute 'hidden'

Successfully uploaded submissions for: sangwon@berkeley.edu

Total Score: 70.000 / 70.000 (100.000%)

	name	score	max_score
0	Public Tests	NaN	NaN
1	q1_1	4.0	4.0
2	q1_2	4.0	4.0
3	q1_3	4.0	4.0
4	q1_4	4.0	4.0
5	q1_5	4.0	4.0
6	q1_6	4.0	4.0
7	q1_7	4.0	4.0
8	q2_1	4.0	4.0
9	q2_2	4.0	4.0
10	q2_3	4.0	4.0
11	q2_4	4.0	4.0
12	q2_6	4.0	4.0
13	q3_3	4.0	4.0
14	q3_4	4.0	4.0
15	q3_5	4.0	4.0

16	q4_1	5.0	5.0
17	q4_3	5.0	5.0

Public Tests

q1_1 results: All test cases passed!

q1_2 results: All test cases passed!

q1_3 results: All test cases passed!

q1_4 results: All test cases passed!

q1_5 results: All test cases passed!

q1_6 results: All test cases passed!

q1_7 results: All test cases passed!

q2_1 results: All test cases passed!

q2_2 results: All test cases passed!

q2_3 results: All test cases passed!

q2_4 results: All test cases passed!

q2_6 results: All test cases passed!

q3_3 results: All test cases passed!

q3_4 results: All test cases passed!

q3_5 results: All test cases passed!

q4_1 results: All test cases passed!

q4_3 results: All test cases passed!

Submitted Files

hw03.ipynb Download

In [1]:
```
# Initialize Otter
import otter
grader = otter.Notebook("hw03.ipynb")
```

Homework 3: Table Manipulation and Visualization

Please complete this notebook by filling in the cells provided. Before you begin, execute the previous cell to load the provided tests.

Helpful Resource:

- Python Reference: Cheat sheet of helpful array & table methods used in Data 8!

Recommended Reading:

- Visualization

For all problems that you must write explanations and sentences for, you **must** provide your answer in the designated space. **Moreover, throughout this homework and all future ones, please be sure to not re-assign variables throughout the notebook!** For example, if you use `max_temperature` in your answer to one question, do not reassign it later on. Otherwise, you will fail tests that you thought you were passing previously!

Deadline:

This assignment is due **Friday, 7/1 at 11:59pm PT**. Turn it in by Thursday, 6/30 at 11:59pm PT for 5 extra credit points. Late work will not be accepted as per the policies page.

Note: This homework has hidden tests on it. That means even though tests may say 100% passed, doesn't mean your final grade will be 100%. We will be running more tests for correctness once everyone turns in the homework.

Directly sharing answers is not okay, but discussing problems with the course staff or with other students is encouraged. Refer to the policies page to learn more about how to learn cooperatively.

You should start early so that you have time to get help if you're stuck. Office hours are held Tuesday through Friday. The schedule appears on http://data8.org/su22/office-hours.html.

In [2]:
```
# Don't change this cell; just run it.

import numpy as np
from datascience import *
import d8error
import warnings
warnings.simplefilter('ignore', FutureWarning)

# These lines do some fancy plotting magic.\n",
import matplotlib
%matplotlib inline
import matplotlib.pyplot as plots
plots.style.use('fivethirtyeight')
```

1. Unemployment

The Great Recession of 2008-2009 was a period of economic decline observed globally, with scale and timing varying from country to country. In the United States, it resulted in a rapid rise in unemployment that affected industries and population groups to different extents.

The Federal Reserve Bank of St. Louis publishes data about jobs in the US. Below, we've loaded data on unemployment in the United States. There are many ways of defining unemployment, and our dataset includes two notions of the unemployment rate:

1. *Non-Employment Index (or NEI)*: Among people who are able to work and are looking for a full-time job, the percentage who can't find a job.
2. *NEI-PTER*: Among people who are able to work and are looking for a full-time job, the percentage who can't find any job *or* are only working at a part-time job. The latter group is called "Part-Time for Economic Reasons", so the acronym for this index is NEI-PTER. (Economists are great at marketing.)

The source of the data is here.

Question 1. The data are in a CSV file called `unemployment.csv`. Load that file into a table called `unemployment`. **(4 Points)**

In [3]:
```
unemployment = Table().read_table('unemployment.csv')
unemployment
```

Out [3]:

```
Date       | NEI     | NEI-PTER
1994-01-01 | 10.0974 | 11.172
1994-04-01 | 9.6239  | 10.7883
1994-07-01 | 9.3276  | 10.4831
1994-10-01 | 9.1071  | 10.2361
1995-01-01 | 8.9693  | 10.1832
1995-04-01 | 9.0314  | 10.1071
1995-07-01 | 8.9802  | 10.1084
1995-10-01 | 8.9932  | 10.1046
1996-01-01 | 9.0002  | 10.0531
1996-04-01 | 8.9038  | 9.9782
... (80 rows omitted)
```

In [4]:

```
grader.check("q1_1")
```

Out [4]:

```
q1_1 results: All test cases passed!
```

Question 2. Sort the data in descending order by NEI, naming the sorted table `by_nei`. Create another table called `by_nei_pter` that's sorted in descending order by NEI-PTER instead. **(4 Points)**

In [5]:

```
by_nei = unemployment.sort("NEI", descending=True)
by_nei_pter = unemployment.sort("NEI-PTER", descending=True)
```

In [6]:

```
grader.check("q1_2")
```

Out [6]:

```
q1_2 results: All test cases passed!
```

In [7]:

```
# Run this cell to check your by_nei table. You do not need to change the code.
by_nei.show(5)
```

<IPython.core.display.HTML object>

In [8]:

```
# Run this cell to check your by_nei_pter table. You do not need to change the
code.
by_nei_pter.show(5)
```

<IPython.core.display.HTML object>

Question 3. Use `take` to make a table containing the data for the 11 quarters when NEI was greatest. Call that table `greatest_nei`.

`greatest_nei` should be sorted in descending order of `NEI`. Note that each row of `unemployment` represents a quarter. **(4 Points)**

In [9]:

```
greatest_nei = by_nei.take(np.arange(11))
greatest_nei
```

Out [9]:

Date	NEI	NEI-PTER
2009-10-01	10.9698	12.8557
2010-01-01	10.9054	12.7311
2009-07-01	10.8089	12.7404
2009-04-01	10.7082	12.5497
2010-04-01	10.6597	12.5664
2010-10-01	10.5856	12.4329
2010-07-01	10.5521	12.3897
2011-01-01	10.5024	12.3017
2011-07-01	10.4856	12.2507
2011-04-01	10.4409	12.247

... (1 rows omitted)

In [10]:

```
grader.check("q1_3")
```

Out [10]:

q1_3 results: All test cases passed!

Question 4. It's believed that many people became PTER (recall: "Part-Time for Economic Reasons") in the "Great Recession" of 2008-2009. NEI-PTER is the percentage of people who are unemployed (included in the NEI) plus the percentage of people who are PTER.

Compute an array containing the percentage of people who were PTER in each quarter. (The first element of the array should correspond to the first row of `unemployment`, and so on.) **(4 Points)**

Note: Use the original `unemployment` table for this.

In [11]:

```
pter = unemployment.column('NEI-PTER') - unemployment.column('NEI')
pter
```

Out [11]:

```
array([1.0746, 1.1644, 1.1555, 1.129 , 1.2139, 1.0757, 1.1282, 1.1114,
       1.0529, 1.0744, 1.1004, 1.0747, 1.0705, 1.0455, 1.008 , 0.9734,
       0.9753, 0.8931, 0.9451, 0.8367, 0.8208, 0.8105, 0.8248, 0.7578,
       0.7251, 0.7445, 0.7543, 0.7423, 0.7399, 0.7687, 0.8418, 0.9923,
       0.9181, 0.9629, 0.9703, 0.9575, 1.0333, 1.0781, 1.0675, 1.0354,
       1.0601, 1.01  , 1.0042, 1.0368, 0.9704, 0.923 , 0.9759, 0.93  ,
       0.889 , 0.821 , 0.9409, 0.955 , 0.898 , 0.8948, 0.9523, 0.9579,
```

```
        1.0149, 1.0762, 1.2873, 1.4335, 1.7446, 1.8415, 1.9315, 1.8859,
        1.8257, 1.9067, 1.8376, 1.8473, 1.7993, 1.8061, 1.7651, 1.7927,
        1.7286, 1.6387, 1.6808, 1.6805, 1.6629, 1.6253, 1.6477, 1.6298,
        1.4796, 1.5131, 1.4866, 1.4345, 1.3675, 1.3097, 1.2319, 1.1735,
        1.1844, 1.1746])
```

In [12]:

```
grader.check("q1_4")
```

Out [12]:

q1_4 results: All test cases passed!

Question 5. Add `pter` as a column to `unemployment` (name the column `PTER`) and sort the resulting table by that column in descending order. Call the resulting table `by_pter`.

Try to do this with a single line of code, if you can. **(4 Points)**

In [13]:

```
by_pter =
unemployment.with_columns("PTER",pter).sort("PTER",descending=True)
by_pter
```

Out [13]:

Date	NEI	NEI-PTER	PTER
2009-07-01	10.8089	12.7404	1.9315
2010-04-01	10.6597	12.5664	1.9067
2009-10-01	10.9698	12.8557	1.8859
2010-10-01	10.5856	12.4329	1.8473
2009-04-01	10.7082	12.5497	1.8415
2010-07-01	10.5521	12.3897	1.8376
2010-01-01	10.9054	12.7311	1.8257
2011-04-01	10.4409	12.247	1.8061
2011-01-01	10.5024	12.3017	1.7993
2011-10-01	10.3287	12.1214	1.7927

... (80 rows omitted)

In [14]:

```
grader.check("q1_5")
```

Out [14]:

q1_5 results: All test cases passed!

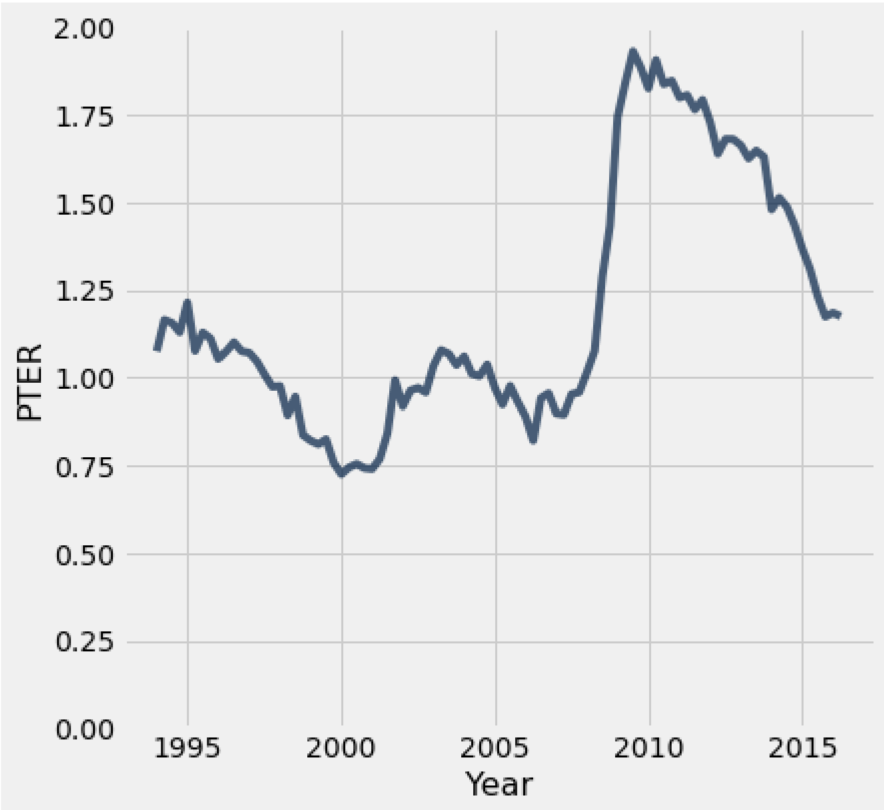
Question 6. Create a line plot of PTER over time. To do this, create a new table called `pter_over_time` by making a copy of the `unemployment` table and adding two new columns: `Year` and `PTER` using the `year` array and the `pter` array, respectively. Then, generate a line plot using one of the table methods you've learned in class.

The order of the columns matter for our correctness tests, so be sure `Year` comes before `PTER`. **(4 Points)**

Note: When constructing `pter_over_time`, do not just add the `year` column to the `by_pter` table. Please follow the directions in the question above.

In [15]:

```
year = 1994 + np.arange(by_pter.num_rows)/4
pter_over_time = unemployment.with_columns("Year",year,"PTER",pter)
pter_over_time.plot("Year","PTER")
plots.ylim(0,2); # Do not change this line
```



In [16]:

```
grader.check("q1_6")
```

Out [16]:

q1_6 results: All test cases passed!

Question 7. Were PTER rates high during the Great Recession (that is to say, were PTER rates particularly high in the years 2008 through 2011)? Assign `highPTER` to `True` if you think PTER rates were high in this period, or `False` if you think they weren't. **(4 Points)**

In [17]:

```
highPTER = True
```

In [18]:
```
grader.check("q1_7")
```

Out [18]: q1_7 results: All test cases passed!

2. Birth Rates

The following table gives Census-based population estimates for each US state on both July 1, 2015 and July 1, 2016. The last four columns describe the components of the estimated change in population during this time interval. **For all questions below, assume that the word "states" refers to all 52 rows including Puerto Rico and the District of Columbia.**

The data was taken from [here](). (Note: If it doesn't download for you when you click the link, please copy and paste it into your address bar!) If you want to read more about the different column descriptions, click [here]().

The raw data is a bit messy—run the cell below to clean the table and make it easier to work with.

In [19]:
```
# Don't change this cell; just run it.
pop = Table.read_table('nst-est2016-alldata.csv').where('SUMLEV', 40).select([1, 4,
12, 13, 27, 34, 62, 69])
pop = pop.relabeled('POPESTIMATE2015', '2015').relabeled('POPESTIMATE2016',
'2016')
pop = pop.relabeled('BIRTHS2016', 'BIRTHS').relabeled('DEATHS2016', 'DEATHS')
pop = pop.relabeled('NETMIG2016', 'MIGRATION').relabeled('RESIDUAL2016',
'OTHER')
pop = pop.with_columns("REGION", np.array([int(region) if region != "X" else 0
for region in pop.column("REGION")]))
pop.set_format([2, 3, 4, 5, 6, 7], NumberFormatter(decimals=0)).show(5)
```

<IPython.core.display.HTML object>

Question 1. Assign `us_birth_rate` to the total US annual birth rate during this time interval. The annual birth rate for a year-long period is the total number of births in that period as a proportion of the total population size at the start of the time period. **(4 Points)**

In [20]:
```
us_birth_rate = sum(pop.column("BIRTHS"))/sum(pop.column("2015"))
us_birth_rate
```

Out [20]: 0.012358536498646102

In [21]:

```
grader.check("q2_1")
```

Out [21]:

q2_1 results: All test cases passed!

Question 2. Assign `movers` to the number of states for which the **absolute value** of the **annual rate of migration** was higher than 1%. The annual rate of migration for a year-long period is the net number of migrations (in and out) as a proportion of the population size at the start of the period. The `MIGRATION` column contains estimated annual net migration counts by state. **(4 Points)**

Hint: `migration_rates` should be a table and `movers` should be a number.

In [22]:

```
migration_rates = np.abs(pop.column("MIGRATION")/pop.column("2015"))
movers = len(migration_rates[migration_rates>0.01])
movers
```

Out [22]:

9

In [23]:

```
grader.check("q2_2")
```

Out [23]:

q2_2 results: All test cases passed!

Question 3. Assign `west_births` to the total number of births that occurred in region 4 (the Western US). **(4 Points)**

Hint: Make sure you double check the type of the values in the `REGION` column and appropriately filter (i.e. the types must match!).

In [24]:

```
west_births = np.sum(pop.where('REGION', are.equal_to(4)).column('BIRTHS'))
west_births
```

Out [24]:

979657

In [25]:

```
grader.check("q2_3")
```

Out [25]:

q2_3 results: All test cases passed!

Question 4. In the next question, you will be creating a visualization to understand the relationship between birth and death rates. The annual death rate for a year-long period is the total number of deaths in that period as a proportion of the population size at the start of the time period.

What visualization is most appropriate to see if there is an association between birth and death rates during a given time interval?

1. Line Graph
2. Bar Chart
3. Scatter Plot

Assign `visualization` below to the number corresponding to the correct visualization. **(4 Points)**

In [26]:
```
visualization = 3
```

In [27]:
```
grader.check("q2_4")
```

Out [27]:

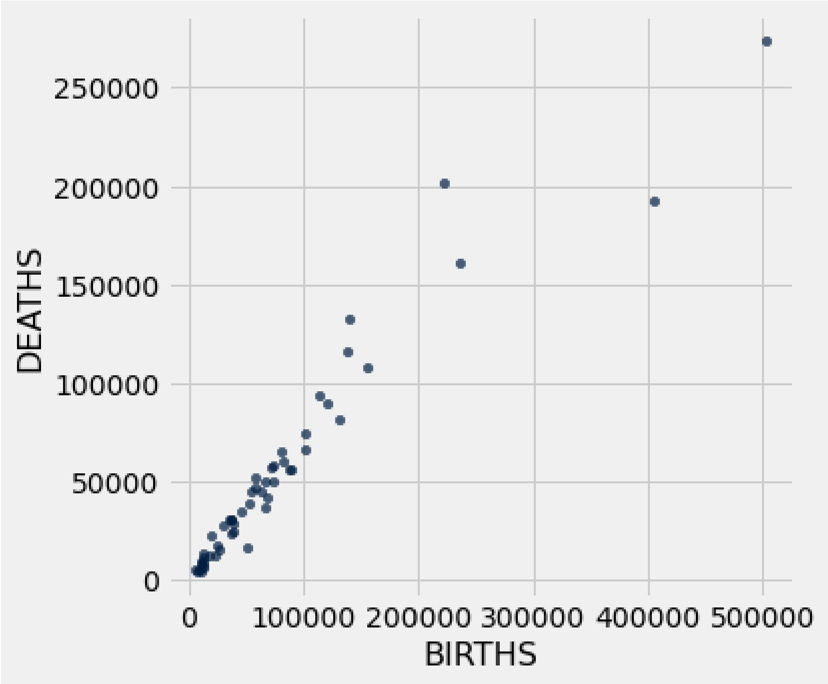
q2_4 results: All test cases passed!

Question 5. In the code cell below, create a visualization that will help us determine if there is an association between birth rate and death rate during this time interval. It may be helpful to create an intermediate table here. **(4 Points)**

Things to consider:

- What type of chart will help us illustrate an association between 2 variables?
- How can you manipulate a certain table to help generate your chart?
- Check out the [Recommended Reading](#) for this homework!

In [28]:
```
# In this cell, use birth_rates and death_rates to generate your visualization
birth_rates = pop.column('BIRTHS') / pop.column('2015')
death_rates = pop.column('DEATHS') / pop.column('2015')
pop.scatter("BIRTHS", "DEATHS")
```



Question 6. True or False: There is an association between birth rate and death rate during this time interval.

Assign `assoc` to `True` or `False` in the cell below. **(4 Points)**

In [29]:
```
assoc = True
```

In [30]:
```
grader.check("q2_6")
```

Out [30]:

q2_6 results: All test cases passed!

3. Uber

Below we load tables containing 200,000 weekday Uber rides in the Manila, Philippines, and Boston, Massachusetts metropolitan areas from the [Uber Movement]() project. The `sourceid` and `dstid` columns contain codes corresponding to start and end locations of each ride. The `hod` column contains codes corresponding to the hour of the day the ride took place. The `ride time` column contains the length of the ride in minutes.

In [32]:
```
boston = Table.read_table("boston.csv")
manila = Table.read_table("manila.csv")
print("Boston Table")
boston.show(4)
```

```
print("Manila Table")
manila.show(4)
```

Boston Table

<IPython.core.display.HTML object>

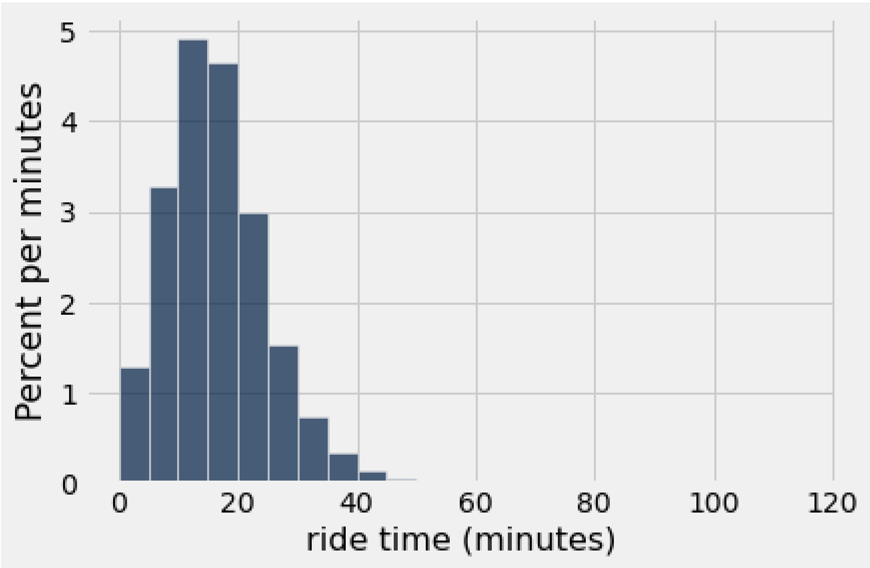
Manila Table

<IPython.core.display.HTML object>

Question 1. Produce a histogram that visualizes the distributions of all ride times in Boston using the given bins in `equal_bins`. **(4 Points)**

In [33]:

```
equal_bins = np.arange(0, 120, 5)
boston.hist('ride time', bins=np.arange(0, 120, 5), unit='minutes')
```

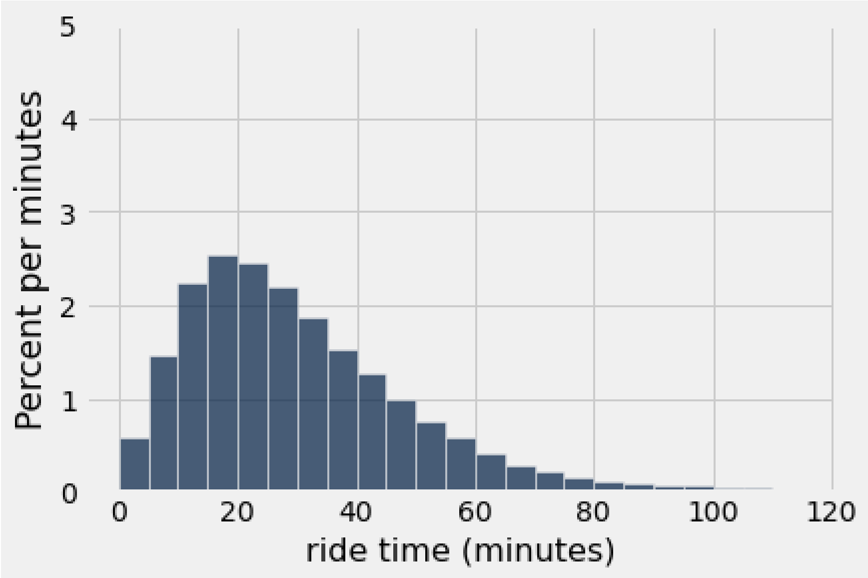


Question 2. Now, produce a histogram that visualizes the distribution of all ride times in Manila using the given bins. **(4 Points)**

In [34]:

```
equal_bins = np.arange(0, 120, 5)
manila.hist('ride time', bins=np.arange(0, 120, 5), unit='minutes')

# Don't delete the following line!
plots.ylim(0, 0.05);
```



Question 3. Let's take a closer look at the y-axis label. Assign `unit_meaning` to an integer (1, 2, 3) that corresponds to the "unit" in "Percent per unit". **(4 Points)**

1. minute
2. ride time
3. second

In [35]:

```
unit_meaning = 1
unit_meaning
```

Out [35]:

```
1
```

In [36]:

```
grader.check("q3_3")
```

Out [36]:

```
q3_3 results: All test cases passed!
```

Question 4. Assign `boston_under_15` and `manila_under_15` to the percentage of rides that are less than 15 minutes in their respective metropolitan areas. Use the height variables provided below in order to compute the percentages. Your solution should only use height variables, numbers, and mathematical operations. You should **not** access the tables `boston` and `manila` in any way. **(4 Points)**

In [37]:

```
boston_under_5_height = 1.2
manila_under_5_height = 0.6
boston_5_to_under_10_height = 3.2
manila_5_to_under_10_height = 1.4
```

```
boston_10_to_under_15_height = 4.9
manila_10_to_under_15_height = 2.2

boston_under_15 = ((boston_under_5_height)+(boston_5_to_under_10_height)+
(boston_10_to_under_15_height)) *5
manila_under_15 = ((manila_under_5_height)+(manila_5_to_under_10_height)+
(manila_10_to_under_15_height)) *5

boston_under_15, manila_under_15
```

Out [37]: (46.5, 21.0)

In [38]:

```
grader.check("q3_4")
```

Out [38]: q3_4 results: All test cases passed!

Question 5. Let's take a closer look at the distribution of ride times in Boston. Assign `boston_median_bin` to an integer (1, 2, 3, or 4) that corresponds to the bin that contains the median time. **(4 Points)**

1. 0-8 minutes
2. 8-14 minutes
3. 14-20 minutes
4. 20-40 minutes

Hint: The median of a sorted list has half of the list elements to its left, and half to its right.

In [39]:

```
boston_median_bin = 3
boston_median_bin
```

Out [39]: 3

In [40]:

```
grader.check("q3_5")
```

Out [40]: q3_5 results: All test cases passed!

Question 6. Identify one difference between the histograms, in terms of the statistical properties. Can you comment on the average and/or skew of each histogram? **(4 Points)**

Hint: The best way to do this is to compare the two histograms (from 3.1 and 3.2) visually.

Looking at two histograms visually, first distinctive feature is that the variables of histogram of manila is right-skewed, continuing numbers but more concentrated on the first 30 minutes, and the histogram of boston has no variables of ride time that goes over 50 minutes, just concentrated on the first minutes, with the number spiked at 10 to 20 minutes. The exact number of average is really hard to define just looking at the histogram, but we are able to get a approximate estimation of it. The width of the bins are defined, and the numbers, percent per minutes are not exact but you can tell how much is it. However, as the skewness exists, the average of the data could come out different. And the basic difference is where it's more concentrated in and has different values of numbers, and how one's continuous while the other one doesn't.

Question 7. Why is your solution in Question 6 the case? Based on one of the following two readings, why are the distributions for Boston and Manila different? **(4 Points)**

- Boston reading
- Manila reading

Hint: Try thinking about external factors of the two cities that may be causing the difference! There may be multiple different factors that come into play.

Manila seems to have a bad traffic, so regardless of the miles that actually run, even with the similar distance of the arrival, it might actually take more time than those of boston. According to the reading, Manila seems to have the worst traffic in the world. It is indicated that Manila has inefficient design of the road and the law that is fragile, it causes a chaos in the road making the drive more longer than usual. That might be one of the reason that's causing the difference to having experience in Boston. Added to that, there might be lot of external reason that come into play to make the difference.

4. Histograms

Consider the following scatter plot:

The axes of the plot represent values of two variables: x and y.

Suppose we have a table called `t` that has two columns in it:

- `x`: a column containing the x-values of the points in the scatter plot
- `y`: a column containing the y-values of the points in the scatter plot

Below, you are given three histograms—one corresponds to column `x`, one corresponds to column `y`, and one does not correspond to either column.

Histogram A:

Histogram B:

Histogram C:

Question 1. Suppose we run `t.hist('x')`. Which histogram does this code produce? Assign `histogram_column_x` to either 1, 2, or 3. **(5 Points)**

1. Histogram A
2. Histogram B
3. Histogram C

In [41]:
```
histogram_column_x = 3
```

In [42]:
```
grader.check("q4_1")
```

Out [42]:
```
q4_1 results: All test cases passed!
```

Question 2. State at least one reason why you chose the histogram from Question 1. **Make sure to clearly indicate which histogram you selected** (ex: "I chose histogram A because ..."). **(5 Points)**

I chose 3. Histogram C because I could clearly see that the range of x varies from -2 to 3, with similar to Histogram A but C has more concentrated on the number between -1 and 0 as the scatterplot also concentrates more highly on those numbers. Additionally, how is continuing to the end well represents the scatterplot as well.

Question 3. Suppose we run `t.hist('y')`. Which histogram does this code produce? Assign `histogram_column_y` to either 1, 2, or 3. **(5 Points)**

1. Histogram A
2. Histogram B
3. Histogram C

In [43]:
```
histogram_column_y = 2
```

In [44]:
```
grader.check("q4_3")
```

Out [44]:
```
q4_3 results: All test cases passed!
```

Question 4. State at least one reason why you chose the histogram from Question 3. **Make sure to clearly indicate which histogram you selected** (ex: "I chose histogram A because ..."). **(5 Points)**

I chose 2. Histogram B becuase I could clearly see that the range of y varies from -1.5 to -0.5 and 0.5 to 1.5, and it's the only histogram that corresponds to those of the y-value.

You're done with Homework 3!

Important submission steps: 1. Run the tests and verify that they all pass. 2. Choose **Save Notebook** from the **File** menu, then **run the final cell**. 3. Click the link to download the zip file. 4. Go to Gradescope and submit the zip file to the corresponding assignment. The name of this assignment is "Homework 3 Autograder".

It is your responsibility to make sure your work is saved before running the last cell.

To double-check your work, the cell below will rerun all of the autograder tests.

In [45]:
```
grader.check_all()
```

Out [45]:

q1_1 results: All test cases passed!

q1_2 results: All test cases passed!

q1_3 results: All test cases passed!

q1_4 results: All test cases passed!

q1_5 results: All test cases passed!

q1_6 results: All test cases passed!

q1_7 results: All test cases passed!

q2_1 results: All test cases passed!

q2_2 results: All test cases passed!

q2_3 results: All test cases passed!

q2_4 results: All test cases passed!

q2_6 results: All test cases passed!

q3_3 results: All test cases passed!

q3_4 results: All test cases passed!

q3_5 results: All test cases passed!

q4_1 results: All test cases passed!

q4_3 results: All test cases passed!

Submission

Make sure you have run all cells in your notebook in order before running the cell below, so that all images/graphs appear in the output. The cell below will generate a zip file for you to submit. **Please save before exporting!**

In [ ]:

```
# Save your notebook first, then run this cell to export your submission.
grader.export(pdf=False)
```

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Download

1	Large file hidden. You can download it using the button above.

__zip_filename__

Download

1	hw03_2022_06_30T23_55_32_541017.zip