

AP Computer Science Principles
Ticket Out the Door
Set 2: Exploring Two Column Data

Name _____ Period _____

Skill 2.1 Exercise 1	
Consider the following questions. For each question, (1) indicate what type of data you would need to collect to answer the question and (2) how you think you would analyze it.	
Which hour of the day are students at Timberline the happiest?	(1)
	(2)
Do taller people have a longer arm span?	(1)
	(2)
Do students with higher gpa's sleep longer?	(1)
	(2)
What type of shoes do sophomores, juniors, and seniors wear?	(1)
	(2)

Skill 2.2 Exercise 1												
Refer to the crosstab chart below to answer the following.												
COUNTA of Breeds Maximum Life Span												
Breed Group	8	10	11	12	13	14	15	16	17	18	20	Grand Total
Herding				4	2	3	2	1				12
Hound	1	2		4	3	4	3	1				18
Mixed					2							2
Non-Sporting					2	1	5	1				9
Sporting			1	5	1	6	5	1				19
Terrier					1	2	5	1			1	10
Toy				1		4	3	1	1	2		12
Working	1	6	1	8	2	3	2					23
Grand Total	2	8	2	22	13	23	25	6	1	2	1	105
Which breed has the shortest life span?												
What is the most common maximum life span for "Working" breeds?												

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Skill 2.2 Exercise 2

Below is a portion of a data set that displays information about shows on Netflix. Here is a link to the complete dataset - <https://docs.google.com/spreadsheets/d/1i5RAuRurZ-57mchZ6k0EghvrJlaTw0BUbbGtAJKF1JI/edit?usp=sharing>

A	B	C	D	E	F	G	H	I	J
id	Type	Title	Country	Data Added	Release Year	Rating	Genre		
1	Movie	Esperando La C	Argentina	7/15/2018	1985	NR	Comedies, Cult Movies, International Movies		
2	Movie	Lucha: Playing tl	Argentina	7/15/2018	2016	TV-PG	Documentaries, International Movies, Sports Mo		
3	Movie	Just Love	Argentina	1/24/2019	2018	TV-MA	Dramas, International Movies, Music & Musicals		
4	Movie	Desire	Argentina	12/21/2017	2017	TV-MA	Dramas, International Movies, Romantic Movies		
5	Movie	The Aerial	Argentina	4/1/2018	2007	TV-MA	Dramas, International Movies, Sci-Fi & Fantasy		
6	Movie	Chronicle of an f	Argentina	6/15/2018	2006	R	Dramas, International Movies, Thrillers		
7	Movie	Pizza, birra, fasc	Argentina	3/15/2018	1998	TV-MA	Dramas, International Movies		
8	Movie	Grego Rossello:	Argentina	10/31/2019	2019	TV-MA	Stand-Up Comedy		
9	Movie	River, el más gr	Argentina	7/5/2019	2019	TV-G	Documentaries, International Movies, Sports Mo		
10	Movie	Agustín Aristarái	Argentina	2/16/2018	2018	TV-MA	Stand-Up Comedy		
11	Movie	Todo Sobre El A	Argentina	9/1/2017	2016	TV-14	Documentaries, International Movies		
12	Movie	GO! The Unforg	Argentina	11/15/2019	2019	TV-PG	Children & Family Movies, Music & Musicals		
13	Movie	27, el club de los	Argentina	5/1/2018	2018	TV-MA	Action & Adventure, Comedies, International Mo		
14	Movie	Mater	Argentina	8/1/2018	2017	TV-MA	Dramas, Independent Movies, International Mov		
15	Movie	Sebastián Marce	Argentina	1/26/2018	2018	TV-MA	Stand-Up Comedy		
16	Movie	Malena Pichot: E	Argentina	3/2/2018	2018	TV-MA	Stand-Up Comedy		
17	Movie	Todo lo que serí	Argentina	4/6/2018	2018	TV-MA	Stand-Up Comedy		
18	Movie	Fernando Sanjia	Argentina	5/25/2018	2018	TV-MA	Stand-Up Comedy		

Which column(s) could be visualized using a bar graph?

Which column(s) could be visualized using a histogram?

Which columns could be used to create crosstab chart? Note, there are several combinations that could work.

What would the crosstab chart show?

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Skill 2.3 Exercise 1

Below is a portion of a data set that contains information about different dog breeds.

Breed Name	Breed Group	Bred For	Min Life	Max	Min Height	Max Height	Min Weight	Max Weight	Temperament
Affenpinscher	Toy	Small rodent hunting, lapdog	10	12	9	12	6	13	Stubborn, Curious, Playful, Adventurous, Active, Fun-loving
Afghan Hound	Hound	Coursing and hunting	10	13	25	27	50	60	Aloof, Clownish, Dignified, Independent, Happy
Airedale Terrier	Terrier	Badger, otter hunting	10	13	21	23	40	65	Outgoing, Friendly, Alert, Confident, Intelligent, Courageous

Identify two columns that could be compared using a scatter plot.

Skill 2.3 Exercise 2

Their research on [Working Hours\(Opens in a new window\)](#) includes this chart that compares productivity (GDP per hour worked) to the average number of hours worked per person.

Country	Productivity (\$/h)	Work hours per person (h)
Cambodia	10	2400
Bangladesh	15	2350
Vietnam	15	2300
Pakistan	15	2250
India	15	2200
Malaysia	25	2250
South Africa	25	2200
Hong Kong	45	2250
South Korea	35	2150
Mexico	20	2100
Philippines	15	2050
Ecuador	20	2000
Indonesia	15	2000
Russia	30	2000
Poland	35	2050
Latvia	25	1950
Israel	35	1900
Turkey	30	1850
Cyprus	40	1850
Australia	55	1850
United States	65	1800
Ireland	75	1800
Japan	40	1750
Italy	55	1750
United Kingdom	50	1700
Sweden	55	1650
Belgium	60	1650
Switzerland	65	1600
France	65	1550
Netherlands	65	1500
Germany	65	1450
Norway	95	1450
Slovenia	40	1600
Bulgaria	25	1650
Ukraine	25	1600
Colombia	15	1750
Brazil	15	1700
Argentina	25	1750
Saint Lucia	10	1850
Armenia	10	1800

What is the correlation between hours worked and GDP per hour worked?

Recently, a large group of companies trialed a “4 day work week”. Based on this plot, can you predict the outcome? Check out this article to learn more, <https://www.npr.org/2024/02/27/1234271434/4-day-workweek-successful-a-year-later-in-uk>

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Skill 2.4 Exercise 1	
For the first exercise on this ticket out the door, you were asked what type of data you would collect to answer different questions. For each question indicate the best visualization (crosstab or scatter plot).	
Question	Crosstab or Scatter Plot
Which hour of the day are students at Timberline the happiest?	
Do taller people have a longer arm span?	
Do students with higher gpa's sleep longer?	
What type of shoes do sophomores, juniors, and seniors wear?	