
 <b>Marwadi University</b> Marwadi Chandarana Group 	<b>Marwadi University</b> <b>Faculty of Engineering &amp; Technology</b> <b>Department of Information and Communication Technology</b>	
<b>Subject: Programming With Python (01CT1309)</b>	<b>Aim:</b> Practical based on Data Visualization with Plotnine	
<b>Experiment No: 28</b>	<b>Date:</b>	<b>Enrollment No: 92400133131</b>

**Aim:** Practical based on Data Visualization with Plotnine

### IDE:

Installation

```
pip install plotnine
```

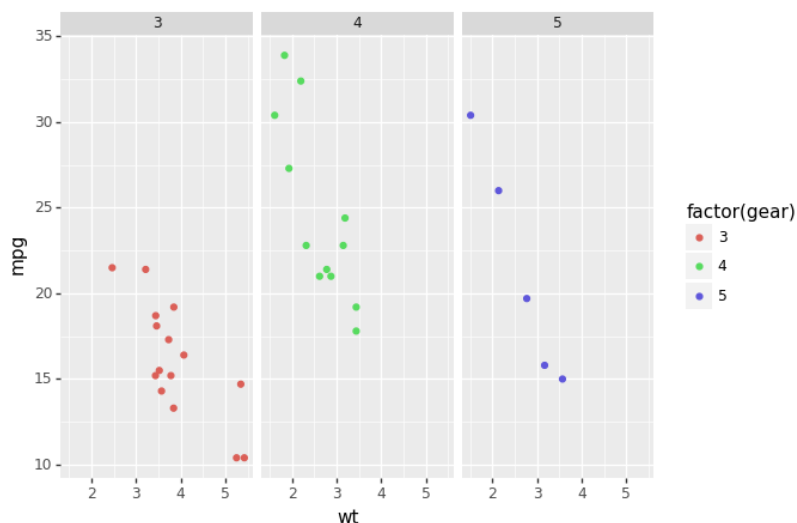
```
from plotnine import *
from plotnine.data import mtcars
```



```
print(mtcars.head())
```

	name	mpg	cyl	disp	hp	...	qsec	vs	am	gear	carb
0	Mazda RX4	21.0	6	160.0	110	...	16.46	0	1	4	4
1	Mazda RX4 Wag	21.0	6	160.0	110	...	17.02	0	1	4	4
2	Datsun 710	22.8	4	108.0	93	...	18.61	1	1	4	1
3	Hornet 4 Drive	21.4	6	258.0	110	...	19.44	1	0	3	1
4	Hornet Sportabout	18.7	8	360.0	175	...	17.02	0	0	3	2

[5 rows x 12 columns]

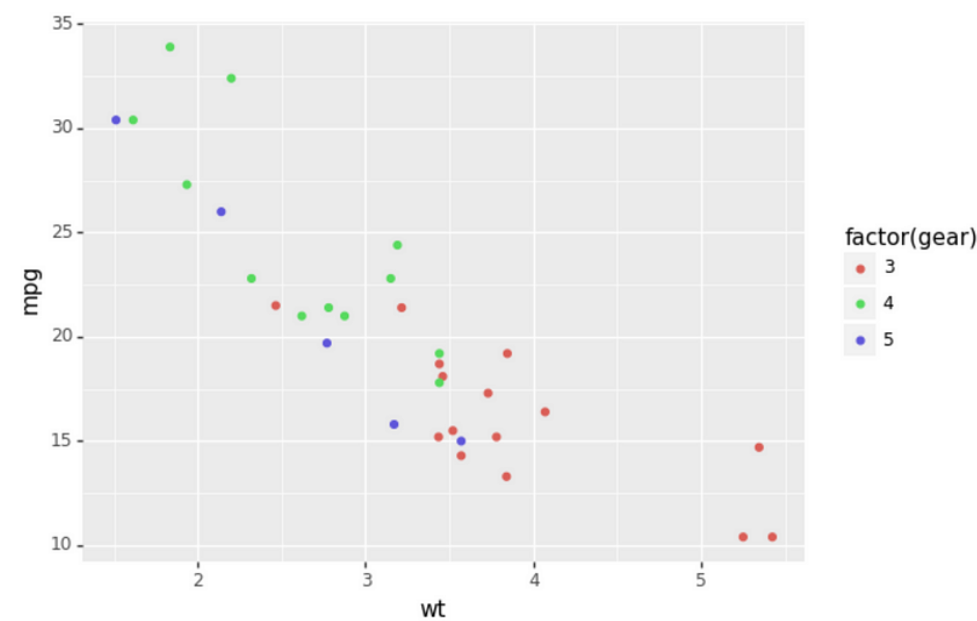
```
(ggplot(data=mtcars)
+ geom_point(mapping=aes(x="wt", y="mpg", color="factor(gear)")))
+ facet_wrap("~gear"))
```



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Understanding the Grammer of Graphics

```
(ggplot(data=mtcars)
+ geom_point(aes("wt", "mpg", color="factor(gear)")))
)
```



```
(ggplot(data=mtcars)
+ geom_point(aes("wt", "mpg", size="factor(gear)")))
)
```

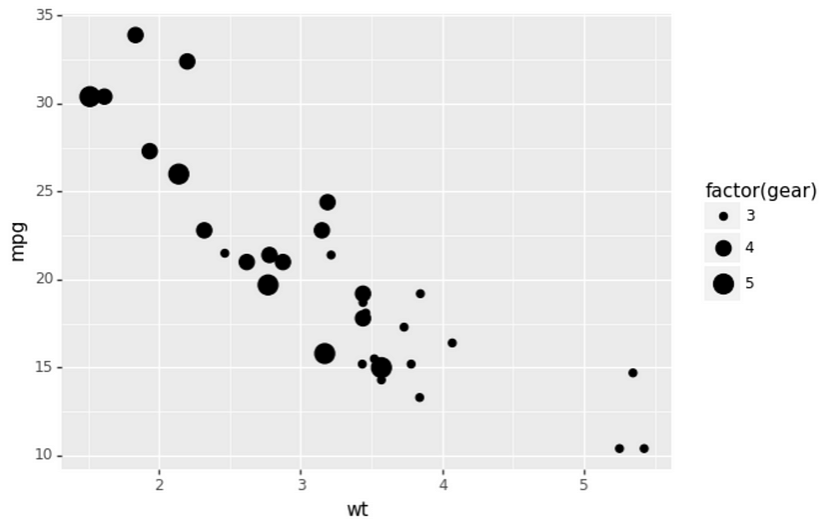
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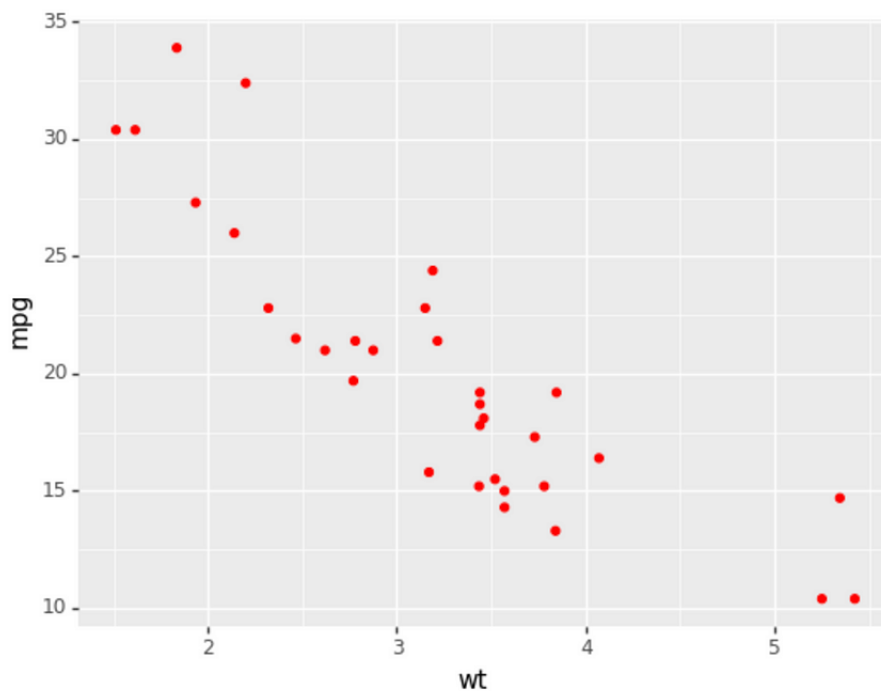
**Experiment No: 28**



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```
(ggplot(data=mtcars)
+ geom_point(aes("wt", "mpg"), color='red')
)
```



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## Post Lab



Visualize the raw data in the economics dataset

```
from_plotnine.data_import economics
```

```
print(economics)
```

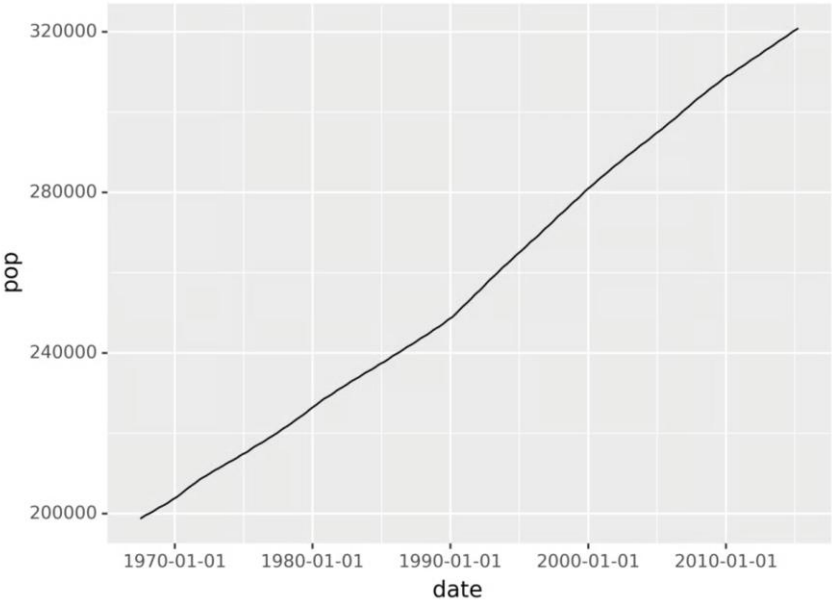
	date	pce	pop	psavert	uempmed	unemploy
0	1967-07-01	507.4	198712	12.5	4.5	2944
1	1967-08-01	510.5	198911	12.5	4.7	2945
2	1967-09-01	516.3	199113	11.7	4.6	2958
3	1967-10-01	512.9	199311	12.5	4.9	3143
4	1967-11-01	518.1	199498	12.5	4.7	3066
..	...	...	...	...	...	...
569	2014-12-01	12122.0	320201	5.0	12.6	8688
570	2015-01-01	12080.8	320367	5.5	13.4	8979
571	2015-02-01	12095.9	320534	5.7	13.1	8705
572	2015-03-01	12161.5	320707	5.2	12.2	8575
573	2015-04-01	12158.9	320887	5.6	11.7	8549

[574 rows x 6 columns]

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```
from plotnine.data import economics
from plotnine import ggplot, aes, geom_line
```

```
(
    ggplot(economics) # What data to use
    + aes(x="date", y="pop") # What variable to use
    + geom_line() # Geometric object to use for drawing
)
```



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```

from plotnine.data import mpg
from plotnine import ggplot, aes, geom_point

ggplot(mpg) + aes(x="class", y="hwy") + geom_point()
  
```

