# Pop Quiz

*Data Science Certificate*

*8/26/2019*

**You have been given the following dataset**

| name | year | month | day | hour | lat | long | status | category | wind | pressure |
|---|---|---|---|---|---|---|---|---|---|---|
| Barry | 1983 | 8 | 26 | 6 | 26.3 | -85.0 | tropical depression | -1 | 25 | 1013 |
| Barry | 1983 | 8 | 28 | 17 | 25.4 | -97.4 | hurricane | 1 | 70 | 986 |
| Barry | 1983 | 8 | 28 | 17 | 25.4 | -97.4 | hurricane | 1 | 70 | 986 |
| Barry | 1983 | 8 | 27 | 18 | 25.8 | -93.0 | tropical storm | 0 | 45 | 1002 |
| Barry | 1995 | 7 | 9 | 21 | 45.3 | -61.0 | tropical storm | 0 | 50 | 990 |
| Belle | 1976 | 8 | 8 | 18 | 29.5 | -75.3 | hurricane | 3 | 100 | 958 |
| Belle | 1976 | 8 | 10 | 12 | 42.6 | -72.4 | tropical storm | 0 | 35 | 992 |
| Belle | 1976 | 8 | 9 | 6 | 32.5 | -75.2 | hurricane | 3 | 105 | 959 |
| Belle | 1976 | 8 | 8 | 12 | 28.1 | -75.1 | hurricane | 2 | 95 | 959 |
| Belle | 1976 | 8 | 7 | 18 | 26.6 | -74.2 | hurricane | 1 | 70 | 985 |
| Beryl | 1982 | 8 | 30 | 0 | 15.7 | -29.1 | tropical storm | 0 | 50 | 999 |
| Beryl | 1994 | 8 | 18 | 12 | 41.2 | -76.0 | tropical depression | -1 | 15 | 1010 |

**Show the `tidyverse` code you would write to obtain the following tibbles**

Assume your data is a tibble stored in the variable `dat` – therefore you would write code like:

```
dat %>%
  do_this() %>%
  etc...
```

**Number 1**

Number of times each name appears

| name | n |
|---|---|
| Barry | 111 |
| Belle | 18 |
| Beryl | 106 |
| Bess | 13 |
| Beta | 18 |

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**Number 2**

Calculate the mean `wind` and median `pressure` every `month` per `year`

| year | month | mean_wind | median_pressure |
|---|---|---|---|
| 1975 | 8 | 45.00000 | 1004.0 |
| 1975 | 9 | 73.75000 | 977.0 |
| 1976 | 8 | 68.05556 | 980.0 |
| 1976 | 9 | 56.38889 | 991.5 |
| 1976 | 10 | 54.68750 | 996.5 |

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**Number 3**

Only display rows that have the `name` value `Wilma`

| name | year | month | day | hour | lat | long | status | category | wind | pressure |
|---|---|---|---|---|---|---|---|---|---|---|
| Wilma | 2005 | 10 | 15 | 18 | 17.6 | -78.5 | tropical depression | -1 | 25 | 1004 |
| Wilma | 2005 | 10 | 16 | 0 | 17.6 | -78.8 | tropical depression | -1 | 25 | 1004 |
| Wilma | 2005 | 10 | 16 | 6 | 17.5 | -79.0 | tropical depression | -1 | 30 | 1003 |
| Wilma | 2005 | 10 | 16 | 12 | 17.5 | -79.2 | tropical depression | -1 | 30 | 1003 |
| Wilma | 2005 | 10 | 16 | 18 | 17.5 | -79.4 | tropical depression | -1 | 30 | 1002 |

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**Number 4**

Show the `status` in each row and each `year` as a column and all of the cells should be mean `wind`

| status | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 |
|---|---|---|---|---|---|---|---|
| hurricane | 81.52174 | 84.31818 | 67.14286 | 72.00000 | 88.37209 | 75.23810 | 81.03175 |
| tropical depression | 25.00000 | 26.50000 | 26.25000 | 26.87500 | 24.83051 | 26.92308 | 25.86957 |
| tropical storm | 50.45455 | 49.75000 | 45.35714 | 44.07407 | 45.44872 | 48.47458 | 45.96154 |

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**Number 5**

Create a line plot to display the count of each `status` over time (by `year`), using status as a color