

Lab 2

Members: jinya425 (Jin Yan), siyli424 (Siyu Liu)

We take first 20 rows of the result on each assignment, please check the `output` folder if need to see all results

Q1: What are the lowest and highest temperatures measured each year for the period 1950-2014. Provide the lists sorted in the descending order with respect to the maximum temperature.

year	yearly_max_temp	yearly_min_temp
2014	34.4	-42.5
2013	31.6	-40.7
2012	31.3	-42.7
2011	32.5	-42.0
2010	34.4	-41.7
2009	31.5	-38.5
2008	32.2	-39.3
2007	32.2	-40.7
2006	32.7	-40.6
2005	32.1	-39.4
2004	30.2	-39.7
2003	32.2	-41.5
2002	33.3	-42.2
2001	31.9	-44.0
2000	33.0	-37.6
1999	32.4	-49.0
1998	29.2	-42.7
1997	31.8	-40.2
1996	30.8	-41.7
1995	30.8	-37.6

only showing top 20 rows

Q2: Count the number of readings for each month in the period of 1950-2014 which are higher than 10 degrees.

year	month	count
2014	12	1
2014	11	158

2014	10	270
2014	9	296
2014	8	296
2014	7	297
2014	6	298
2014	5	296
2014	4	254
2014	3	169
2014	2	15
2013	12	8
2013	11	114
2013	10	270
2013	9	299
2013	8	300
2013	7	301
2013	6	302
2013	5	301
2013	4	208

+-----+-----+-----+

only showing top 20 rows

Q3: Find the average monthly temperature for each available station in Sweden. Your result should include average temperature for each station for each month in the period of 1960- 2014. Bear in mind that not every station has the readings for each month in this timeframe.

year	month	station	avg_monthly_temp
+-----+	+-----+	+-----+	+-----+
2014	12	99450	1.9
2014	12	99280	2.3
2014	12	99270	2.4
2014	12	98490	-1.6
2014	12	98290	0.5
2014	12	98230	0.3
2014	12	98210	0.6
2014	12	98180	0.0
2014	12	98040	0.4
2014	12	97530	-1.8
2014	12	97510	-1.2
2014	12	97400	-0.9
2014	12	97370	-1.6
2014	12	97280	0.3
2014	12	97120	-0.7
2014	12	97100	-0.8
2014	12	96560	-2.4

```
| 2014 | 12 | 96550 | -2.5 |
| 2014 | 12 | 96350 | -1.2 |
| 2014 | 12 | 96190 | -0.9 |
+-----+-----+-----+-----+
only showing top 20 rows
```

Q4: Provide a list of stations with their associated maximum measured temperatures and maximum measured daily precipitation. Show only those stations where the maximum temperature is between 25 and 30 degrees and maximum daily precipitation is between 100 mm and 200mm.

```
+-----+-----+-----+
| station | max_daliy_precip | max_temp |
+-----+-----+-----+
+-----+-----+-----+
```

Q5: Calculate the average monthly precipitation for the Östergotland region (list of stations is provided in the separate file) for the period 1993-2016. In order to do this, you will first need to calculate the total monthly precipitation for each station before calculating the monthly average (by averaging over stations).

```
+-----+-----+-----+
| year | month | avg_monthly_precip |
+-----+-----+-----+
| 2016 | 7 | 0.0 |
| 2016 | 6 | 47.7 |
| 2016 | 5 | 29.3 |
| 2016 | 4 | 26.9 |
| 2016 | 3 | 20.0 |
| 2016 | 2 | 21.6 |
| 2016 | 1 | 22.3 |
| 2015 | 12 | 28.9 |
| 2015 | 11 | 63.9 |
| 2015 | 10 | 2.3 |
| 2015 | 9 | 101.3 |
| 2015 | 8 | 27.0 |
| 2015 | 7 | 119.1 |
| 2015 | 6 | 78.7 |
| 2015 | 5 | 93.2 |
| 2015 | 4 | 15.3 |
```

2015	3	42.6
2015	2	24.8
2015	1	59.1
2014	12	35.5

+-----+-----+-----+

only showing top 20 rows