

**ENGG233 Final Project**  
**Calgary Weather Analyzer**  
**Milestone 2**

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**Lecture: Lecture #03**

**TA Group: Yellow**

**1- Get Minimum Temperature of 1990-2019**

```
1- Get Minimum Temperature of 1990-2019
2- Get Maximum Temperature of 1990-2019
3- Get Minimum Temperature of 1990-2019 Annually
4- Get Maximum Temperature of 1990-2019 Annually
5- Get Average Snowfall between 1990-2019 Annually
6- Get Average Temperature between 1990-2019 Annually
7- LineChart Minimum Temperature of 1990-2019 Annually
8- LineChart Maximum Temperature of 1990-2019 Annually
9- Barchart Average Snowfall between 1990-2019 Annually
10- Barchart Average Temperature between 1990-2019 Annually
11- Select Option: 1
-----
-15.9
```

According to provided Calgary weather data the minimum temperature between years 1990 and 2019 was -15.9 degrees Celsius.

**2- Get Maximum Temperature of 1990-2019**

```
1- Get Minimum Temperature of 1990-2019
2- Get Maximum Temperature of 1990-2019
3- Get Minimum Temperature of 1990-2019 Annually
4- Get Maximum Temperature of 1990-2019 Annually
5- Get Average Snowfall between 1990-2019 Annually
6- Get Average Temperature between 1990-2019 Annually
7- LineChart Minimum Temperature of 1990-2019 Annually
8- LineChart Maximum Temperature of 1990-2019 Annually
9- Barchart Average Snowfall between 1990-2019 Annually
10- Barchart Average Temperature between 1990-2019 Annually
11- Select Option: 2
-----
23.5
-----
```

According to provided Calgary weather data the maximum temperature between years 1990 and 2019 was 23.5 degrees Celsius.

### 3- Get Minimum Temperature of 1990-2019 Annually

```
-----
1- Get Minimum Temperature of 1990-2019
2- Get Maximum Temperature of 1990-2019
3- Get Minimum Temperature of 1990-2019 Annually
4- Get Maximum Temperature of 1990-2019 Annually
5- Get Average Snowfall between 1990-2019 Annually
6- Get Average Temperature between 1990-2019 Annually
7- LineChart Minimum Temperature of 1990-2019 Annually
8- LineChart Maximum Temperature of 1990-2019 Annually
9- Barchart Average Snowfall between 1990-2019 Annually
10- Barchart Average Temperature between 1990-2019 Annually
11- Select Option: 3
-----
1990 -15.84
1991 -15.71
1992 -15.9
1993 -15.67
1994 -15.66
1995 -15.77
1996 -15.63
1997 -15.56
1998 -15.61
1999 -15.66
2000 -15.14
2001 -15.03
2002 -14.62
2003 -14.34
2004 -14.32
2005 -14.15
2006 -14.19
2007 -14.04
2008 -13.91
2009 -13.72
2010 -13.49
2011 -13.21
2012 -13.41
2013 -12.93
2014 -12.92
2015 -12.92
2016 -12.81
2017 -12.95
2018 -13.08
2019 -13.02
```

The output visualises the minimum temperature every year from 1990 to 2019. The output data names the year on the first column and the corresponding minimum temperature of the year in the second column (e.g. 1995 -15.77)

#### 4- Get Maximum Temperature of 1990-2019 Annually

```
1- Get Minimum Temperature of 1990-2019
2- Get Maximum Temperature of 1990-2019
3- Get Minimum Temperature of 1990-2019 Annually
4- Get Maximum Temperature of 1990-2019 Annually
5- Get Average Snowfall between 1990-2019 Annually
6- Get Average Temperature between 1990-2019 Annually
7- LineChart Minimum Temperature of 1990-2019 Annually
8- LineChart Maximum Temperature of 1990-2019 Annually
9- Barchart Average Snowfall between 1990-2019 Annually
10- Barchart Average Temperature between 1990-2019 Annually
11- Select Option: 4
-----
1990 23.36
1991 23.21
1992 23.2
1993 23.09
1994 22.93
1995 22.92
1996 22.85
1997 22.9
1998 22.86
1999 22.9
2000 22.86
2001 22.85
2002 22.88
2003 23.08
2004 23.12
2005 23.12
2006 23.05
2007 23.11
2008 23.26
2009 23.25
2010 23.18
2011 23.15
2012 23.21
2013 23.28
2014 23.24
2015 23.24
2016 23.22
2017 23.29
2018 23.45
2019 23.5
-----
```

The output visualises the maximum temperature every year from 1990 to 2019. The output data names the year on the first column and the corresponding maximum temperature of the year in the second column (e.g. 1995 22.92)

## 5- Get Average Snowfall between 1990-2019 Annually

```
1- Get Minimum Temperature of 1990-2019
2- Get Maximum Temperature of 1990-2019
3- Get Minimum Temperature of 1990-2019 Annually
4- Get Maximum Temperature of 1990-2019 Annually
5- Get Average Snowfall between 1990-2019 Annually
6- Get Average Temperature between 1990-2019 Annually
7- LineChart Minimum Temperature of 1990-2019 Annually
8- LineChart Maximum Temperature of 1990-2019 Annually
9- Barchart Average Snowfall between 1990-2019 Annually
10- Barchart Average Temperature between 1990-2019 Annually
11- Select Option: 5
-----
1990 11.293333333333331
1991 11.265
1992 11.029166666666667
1993 11.090833333333334
1994 10.899166666666666
1995 10.818333333333333
1996 10.694166666666666
1997 10.854166666666666
1998 10.7575
1999 10.748333333333335
2000 10.65
2001 10.559166666666668
2002 10.444166666666668
2003 10.313333333333334
2004 10.565
2005 10.5525
2006 10.231666666666667
2007 10.268333333333333
2008 10.4975
2009 10.6625
2010 10.769166666666663
2011 10.7275
2012 10.879999999999997
2013 10.851666666666667
2014 10.9475
2015 11.144166666666669
2016 11.109166666666667
2017 10.993333333333332
2018 11.210833333333333
2019 10.860909090909091
-----
```

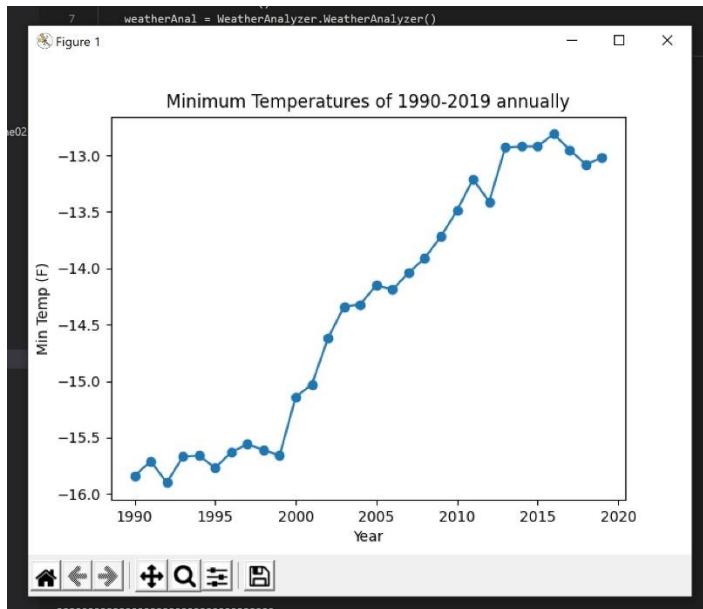
The output visualises the average snowfall every year from 1990 to 2019. The output data names the year on the first column and the corresponding average snowfall data of the year in the second column (e.g. 1995 10.818333333333333)

## 6- Get Average Temperature between 1990-2019 Annually

```
1- Get Minimum Temperature of 1990-2019
2- Get Maximum Temperature of 1990-2019
3- Get Minimum Temperature of 1990-2019 Annually
4- Get Maximum Temperature of 1990-2019 Annually
5- Get Average Snowfall between 1990-2019 Annually
6- Get Average Temperature between 1990-2019 Annually
7- LineChart Minimum Temperature of 1990-2019 Annually
8- LineChart Maximum Temperature of 1990-2019 Annually
9- Barchart Average Snowfall between 1990-2019 Annually
10- Barchart Average Temperature between 1990-2019 Annually
11- Select Option: 6
-----
1990 3.823749999999999
1991 3.838333333333334
1992 3.849583333333334
1993 3.86875
1994 3.842083333333335
1995 3.865833333333332
1996 3.9
1997 3.875833333333333
1998 3.903333333333338
1999 3.950833333333333
2000 4.03875
2001 4.05875
2002 4.114583333333333
2003 4.17
2004 4.196666666666666
2005 4.22375
2006 4.295
2007 4.296666666666667
2008 4.320416666666667
2009 4.380416666666667
2010 4.402916666666666
2011 4.420833333333333
2012 4.364166666666667
2013 4.4475
2014 4.46875
2015 4.472499999999999
2016 4.555
2017 4.586250000000001
2018 4.531666666666666
2019 5.500454545454546
```

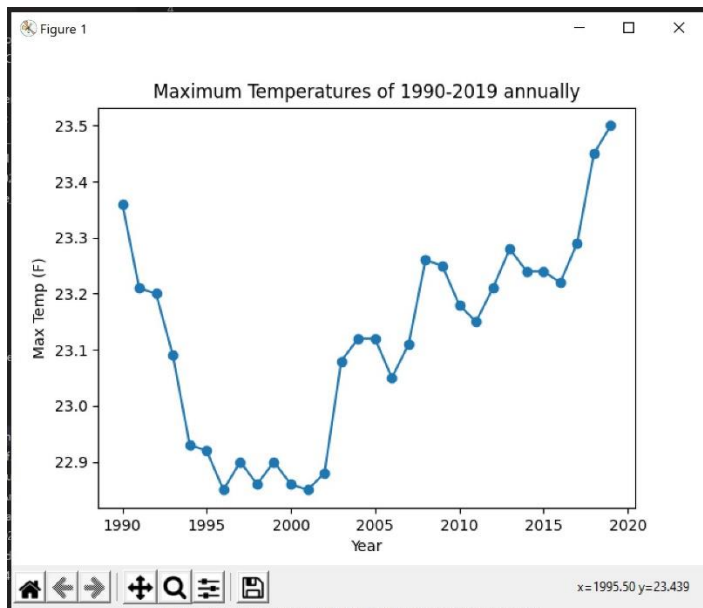
The output visualises the average temperature every year from 1990 to 2019. The output data names the year on the first column and the corresponding average temperature of the year in the second column (e.g. 1995 3.865833333333332)

## 7- LineChart Minimum Temperature of 1990-2019 Annually



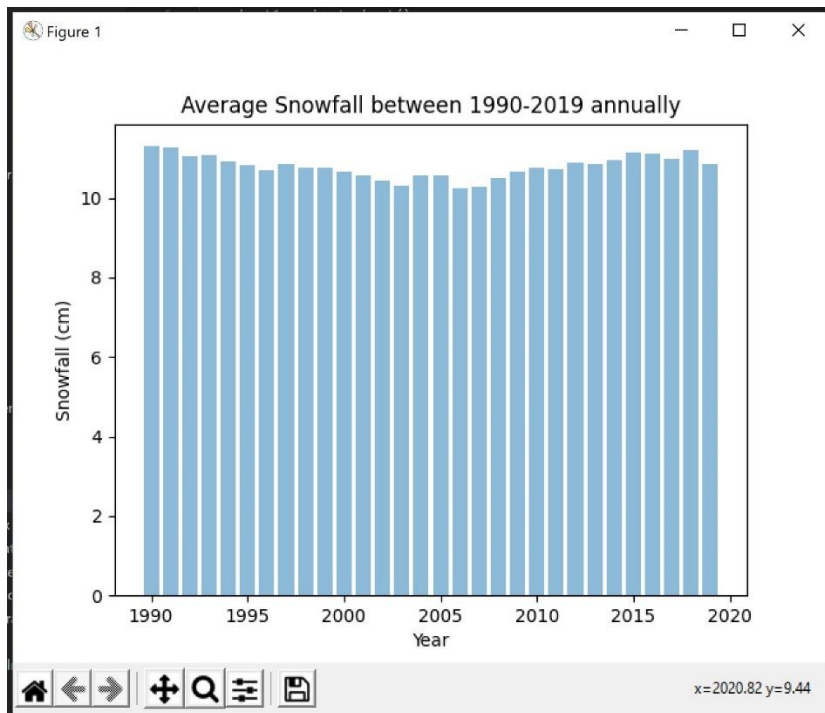
According to the Calgary weather analysis done on the given data in (CalgaryWeather.csv) file. The visualization shows the annual minimum temperatures from 1990 to 2019 as a line graph. On an average we can see the annual minimum temperature increases over time. The lowest temperature in the 30 years was -15.2 degrees in 1992.

## 8- LineChart Maximum Temperature of 1990-2019 Annually



According to the Calgary weather analysis done on the given data in (CalgaryWeather.csv) file. The visualization shows the annual maximum temperatures from 1990 to 2019 as a line graph. On an average we can see the annual maximum temperature fluctuates highly over time. The lowest maximum temperature in the 30 years was 22.85 degrees in 1996, and the highest maximum temperature was 23.5 degrees in 2019.

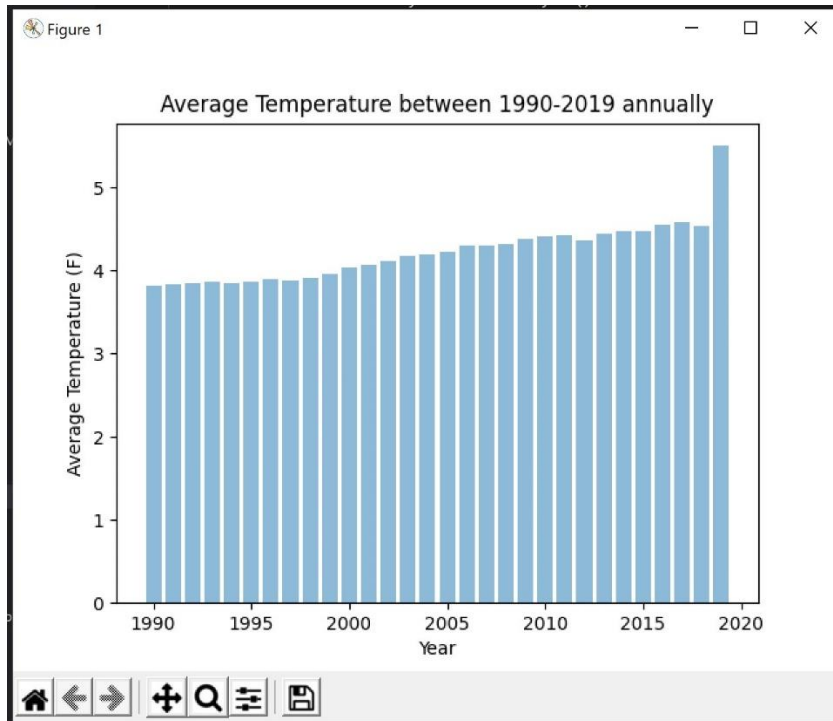
## 9- BarChart Average Snowfall between 1990-2019 Annually



According to the Calgary weather analysis done on the given data in (CalgaryWeather.csv) file. The visualization shows the annual average snowfall from 1990 to 2019 as a bar chart graph. On an average we can see the average snowfall is always greater than 10cm. The average snowfall were lowest in 2006 at 10.2166cm.



## 10- BarChart Average Temperature between 1990-2019 Annually



According to the Calgary weather analysis done on the given data in (CalgaryWeather.csv) file. The visualization shows the annual average temperature from 1990 to 2019 as a bar chart graph. On an average we can see the annual average is always greater than 3 degrees . The average temperature were lowest shows a gradual increase from 1990 to 2018. And in 2019 the temperature average suddenly increases to 5.5005 degrees.