AMERICAN INTERNATIONAL UNIVERSITY–BANGLADESH (AIUB)

FACULTY OF SCIENCE & TECHNOLOGY

DEPARTMENT OF MATHEMATICS

COMPUTATIONAL STATISTICS AND PROBABILITY

Summer 2023-2024

Section: C, Group: Data Crew

PROJECT TITLE

The Study of Climate Change Using Statistical Analysis

Course Teacher

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Introduction

The temperature trends from January to August offer valuable insights into seasonal changes and climate patterns. This analysis examines temperature data across these months using various visualization tools such as bar graphs, histograms, pie charts, and correlation metrics. we have taken 200+ secondary data of these months from Weather in January 2024 in Dhaka, Bangladesh (timeanddate.com) . The bar graph will showcase monthly average temperatures, while the histogram provides a frequency distribution of temperature ranges. A pie chart breaks down temperature proportions within certain thresholds, and a correlation analysis assesses the relationship between temperature and dates. Together, these visualizations help us better understand weather variations over time and identify potential patterns that might impact sectors like agriculture, energy, and tourism.

Data Table:

	January	February	March	April	May	June	July	August
1	25.0	25.0	30.0	38.0	39.0	32.0	27.0	28.0
2	22.0	27.0	30.0	36.0	38.0	30.0	28.0	27.0
3	22.0	27.0	31.0	35.0	36.0	29.0	28.0	29.0
4	25.0	27.0	29.0	35.0	37.0	35.0	30.0	33.0
5	22.0	28.0	30.0	36.0	36.0	34.0	30.0	30.0
6	26.0	25.0	29.0	37.0	30.0	34.0	33.0	32.0
7	27.0	25.0	29.0	38.0	32.0	35.0	33.0	33.0
8	25.0	25.0	30.0	35.0	30.0	34.0	34.0	32.0
9	24.0	26.0	29.0	36.0	34.0	31.0	34.0	32.0
10	23.0	27.0	29.0	35.0	33.0	35.0	33.0	32.0
11	22.0	28.0	32.0	36.0	31.0	36.0	29.0	31.0
12	18.0	29.0	33.0	36.0	34.0	35.0	31.0	33.0
13	17.0	30.0	34.0	38.0	34.0	34.0	32.0	33.0
14	18.0	28.0	27.0	37.0	35.0	32.0	32.0	35.0
15	21.0	29.0	34.0	37.0	36.0	34.0	34.0	34.0
16	18.0	29.0	34.0	37.0	36.0	34.0	31.0	32.0
17	18.0	28.0	31.0	35.0	37.0	35.0	35.0	32.0
18	23.0	29.0	31.0	36.0	30.0	31.0	37.0	30.0
19	25.0	30.0	32.0	38.0	35.0	26.0	37.0	28.0
20	23.0	29.0	26.0	38.0	32.0	30.0	37.0	32.0
21	23.0	31.0	26.0	38.0	35.0	34.0	36.0	29.0
22	17.0	28.0	29.0	38.0	33.0	32.0	36.0	27.0
23	22.0	29.0	31.0	38.0	38.0	35.0	34.0	30.0
24	23.0	28.0	31.0	39.0	38.0	36.0	34.0	31.0
25	22.0	26.0	33.0	39.0	38.0	30.0	35.0	31.0
26	24.0	29.0	32.0	38.0	34.0	32.0	35.0	30.0
27	24.0	29.0	33.0	37.0	28.0	33.0	35.0	32.0
28	25.0	30.0	32.0	39.0	34.0	31.0	35.0	31.0
29	25.0	30.0	33.0	40.0	34.0	33.0	33.0	35.0
30	26.0	.	34.0	38.0	34.0	30.0	30.0	35.0
31	26.0	.	32.0	.	32.0	.	35.0	33.0
32								

Bar Chat

FREQUENCIES VARIABLES=January February March April May June July August

/STATISTICS=STDDEV VARIANCE RANGE MINIMUM MAXIMUM SEMEAN MEAN MEDIAN MODE

/BARCHART FREQ

/ORDER=ANALYSIS

Statistics

		Temperature on January	Temperature on February	Temperature on March	Temperature on April	Temperature on May
N	Valid	31	29	31	30	31
	Missing	0	2	0	1	0
Mean		22.613	27.966	30.839	37.100	34.290
Std. Error of Mean		.5157	.3158	.4019	.2553	.4977
Median		23.000	28.000	31.000	37.000	34.000
Mode		22.0[a]	29.0	29.0	38.0	34.0
Std. Deviation		2.8714	1.7005	2.2375	1.3983	2.7712
Variance		8.245	2.892	5.006	1.955	7.680
Range		10.0	6.0	8.0	5.0	11.0
Minimum		17.0	25.0	26.0	35.0	28.0
Maximum		27.0	31.0	34.0	40.0	39.0

Statistics

		Temperature on June	Temperature on July	Temperature on August
N	Valid	30	31	31
	Missing	1	0	0
Mean		32.733	33.000	31.355
Std. Error of Mean		.4340	.5016	.3923
Median		33.500	34.000	32.000
Mode		34.0	35.0	32.0
Std. Deviation		2.3771	2.7928	2.1840
Variance		5.651	7.800	4.770
Range		10.0	10.0	8.0
Minimum		26.0	27.0	27.0
Maximum		36.0	37.0	35.0

a. Multiple modes exist. The smallest value is shown

Frequency Table

Temperature on January

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	17.0	2	6.5	6.5	6.5
	18.0	4	12.9	12.9	19.4
	21.0	1	3.2	3.2	22.6
	22.0	6	19.4	19.4	41.9
	23.0	5	16.1	16.1	58.1
	24.0	3	9.7	9.7	67.7
	25.0	6	19.4	19.4	87.1
	26.0	3	9.7	9.7	96.8
	27.0	1	3.2	3.2	100.0
	Total	31	100.0	100.0	

Temperature on February

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	25.0	4	12.9	13.8	13.8
	26.0	2	6.5	6.9	20.7
	27.0	4	12.9	13.8	34.5
	28.0	6	19.4	20.7	55.2
	29.0	8	25.8	27.6	82.8
	30.0	4	12.9	13.8	96.6
	31.0	1	3.2	3.4	100.0
	Total	29	93.5	100.0	
Missing	System	2	6.5		
Total		31	100.0		

Temperature on March

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	26.0	2	6.5	6.5	6.5
	27.0	1	3.2	3.2	9.7
	29.0	6	19.4	19.4	29.0
	30.0	4	12.9	12.9	41.9
	31.0	5	16.1	16.1	58.1
	32.0	5	16.1	16.1	74.2
	33.0	4	12.9	12.9	87.1
	34.0	4	12.9	12.9	100.0
	Total	31	100.0	100.0	

Temperature on April

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	35.0	5	16.1	16.7	16.7
	36.0	6	19.4	20.0	36.7
	37.0	5	16.1	16.7	53.3
	38.0	10	32.3	33.3	86.7
	39.0	3	9.7	10.0	96.7
	40.0	1	3.2	3.3	100.0
	Total	30	96.8	100.0	
Missing	System	1	3.2		
Total		31	100.0		

Temperature on May

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	28.0	1	3.2	3.2	3.2
	30.0	3	9.7	9.7	12.9
	31.0	1	3.2	3.2	16.1
	32.0	3	9.7	9.7	25.8
	33.0	2	6.5	6.5	32.3
	34.0	7	22.6	22.6	54.8
	35.0	3	9.7	9.7	64.5
	36.0	4	12.9	12.9	77.4
	37.0	2	6.5	6.5	83.9

	38.0	4	12.9	12.9	96.8
	39.0	1	3.2	3.2	100.0
	Total	31	100.0	100.0	

Temperature on June

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	26.0	1	3.2	3.3	3.3
	29.0	1	3.2	3.3	6.7
	30.0	4	12.9	13.3	20.0
	31.0	3	9.7	10.0	30.0
	32.0	4	12.9	13.3	43.3
	33.0	2	6.5	6.7	50.0
	34.0	7	22.6	23.3	73.3
	35.0	6	19.4	20.0	93.3
	36.0	2	6.5	6.7	100.0
	Total	30	96.8	100.0	
Missing	System	1	3.2		
Total		31	100.0		

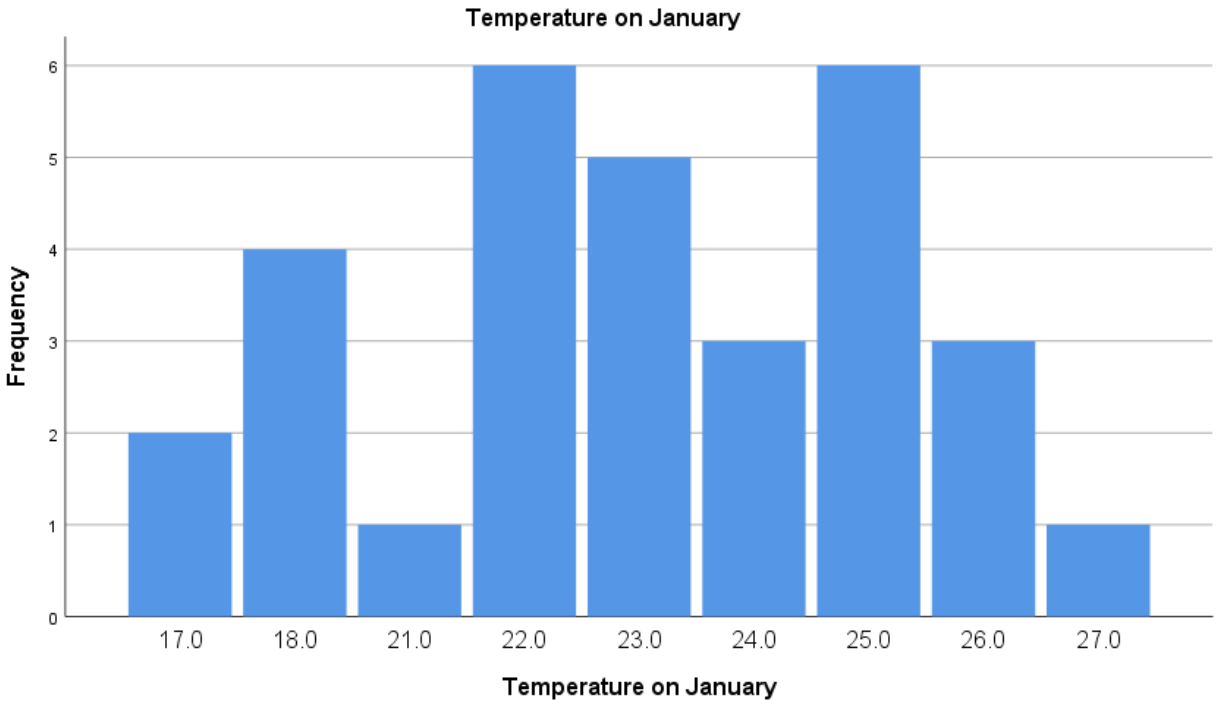
Temperature on July

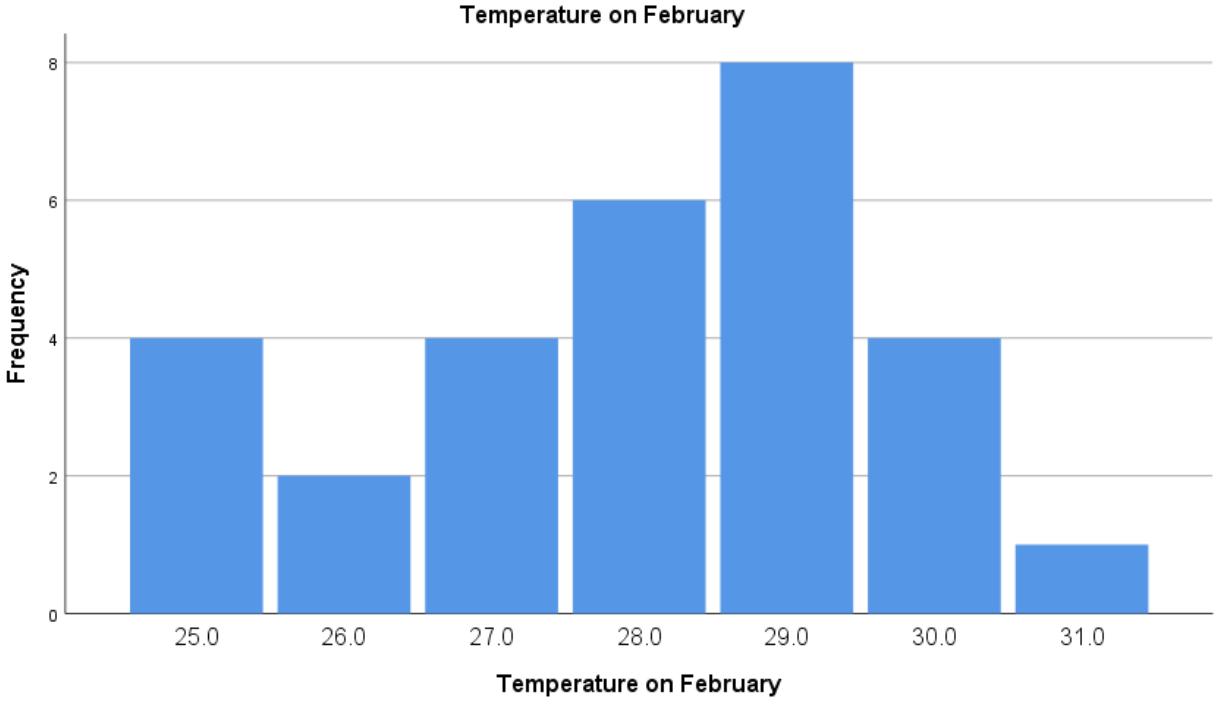
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	27.0	1	3.2	3.2	3.2
	28.0	2	6.5	6.5	9.7
	29.0	1	3.2	3.2	12.9
	30.0	3	9.7	9.7	22.6
	31.0	2	6.5	6.5	29.0
	32.0	2	6.5	6.5	35.5
	33.0	4	12.9	12.9	48.4
	34.0	5	16.1	16.1	64.5
	35.0	6	19.4	19.4	83.9
	36.0	2	6.5	6.5	90.3
	37.0	3	9.7	9.7	100.0
	Total	31	100.0	100.0	

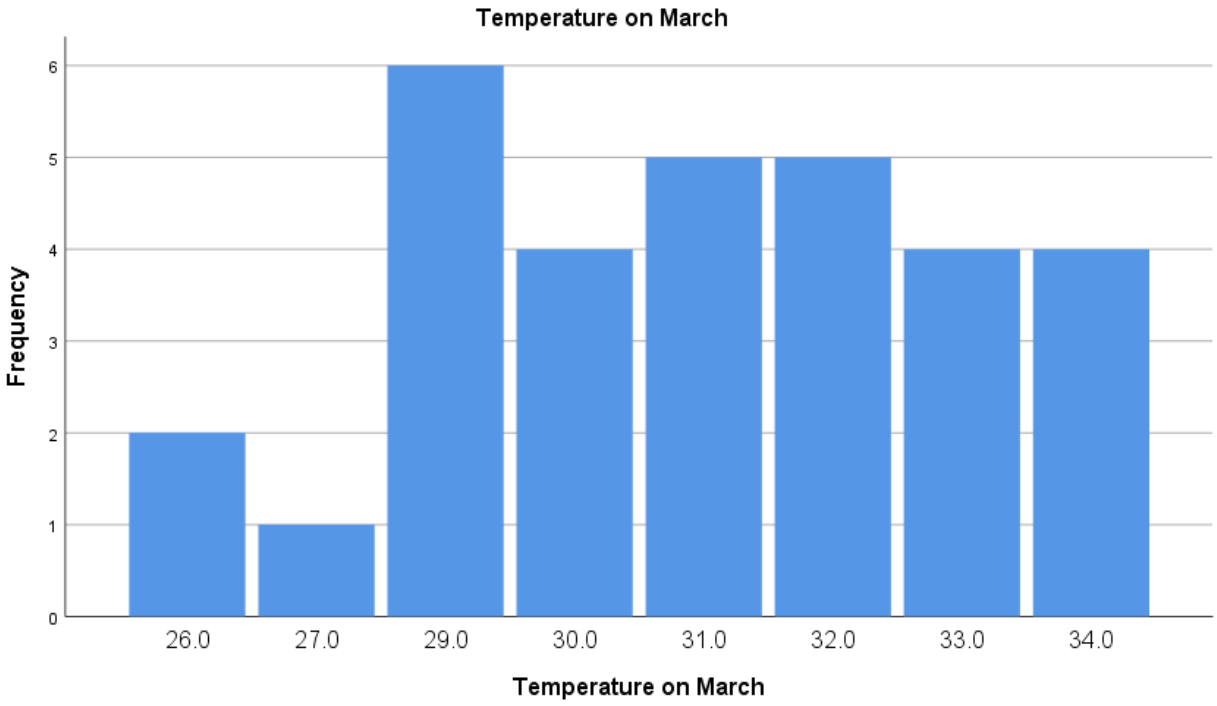
Temperature on August

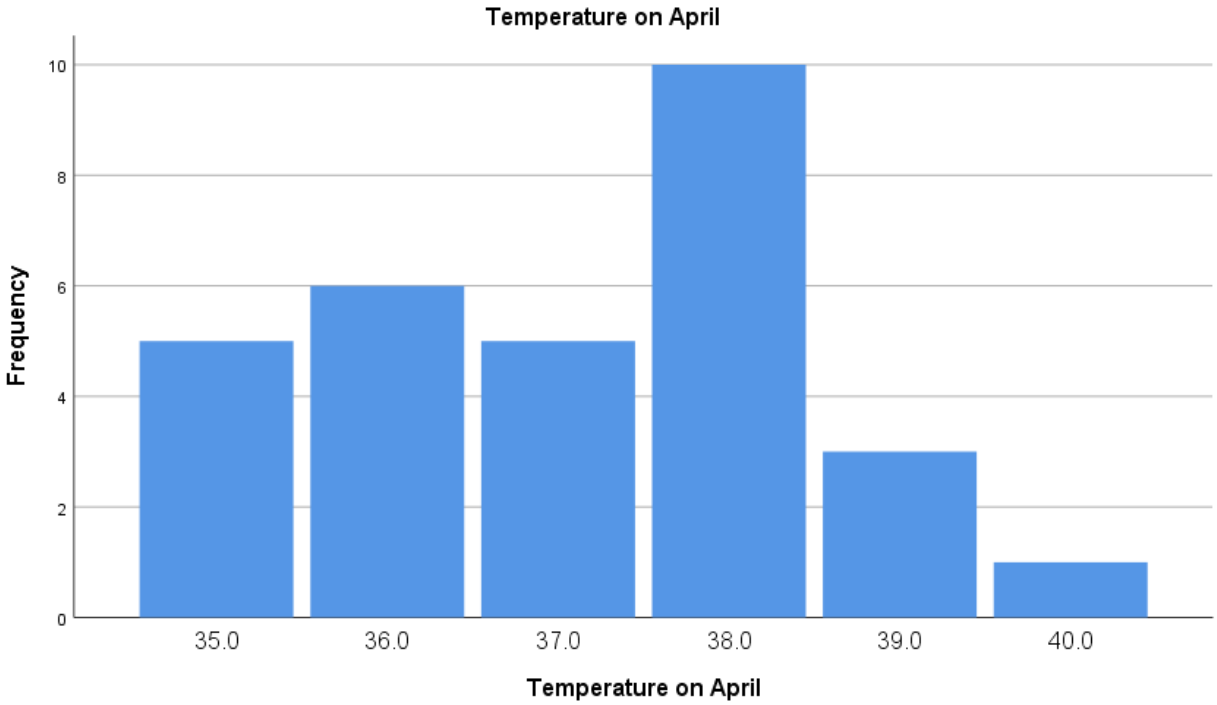
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	27.0	2	6.5	6.5	6.5
	28.0	2	6.5	6.5	12.9
	29.0	2	6.5	6.5	19.4
	30.0	4	12.9	12.9	32.3
	31.0	4	12.9	12.9	45.2
	32.0	8	25.8	25.8	71.0
	33.0	5	16.1	16.1	87.1
	34.0	1	3.2	3.2	90.3
	35.0	3	9.7	9.7	100.0
	Total	31	100.0	100.0	

Bar Chart


Temperature on January
Frequency
0
1
2
3
4
5
6
17.0
18.0
21.0
22.0
23.0
24.0
25.0
26.0
27.0
Temperature on January


Temperature on February
Frequency
0
2
4
6
8
25.0
26.0
27.0
28.0
29.0
30.0
31.0
Temperature on February


Temperature on March
Frequency
0
1
2
3
4
5
6
26.0
27.0
29.0
30.0
31.0
32.0
33.0
34.0
Temperature on March


Temperature on April
Frequency
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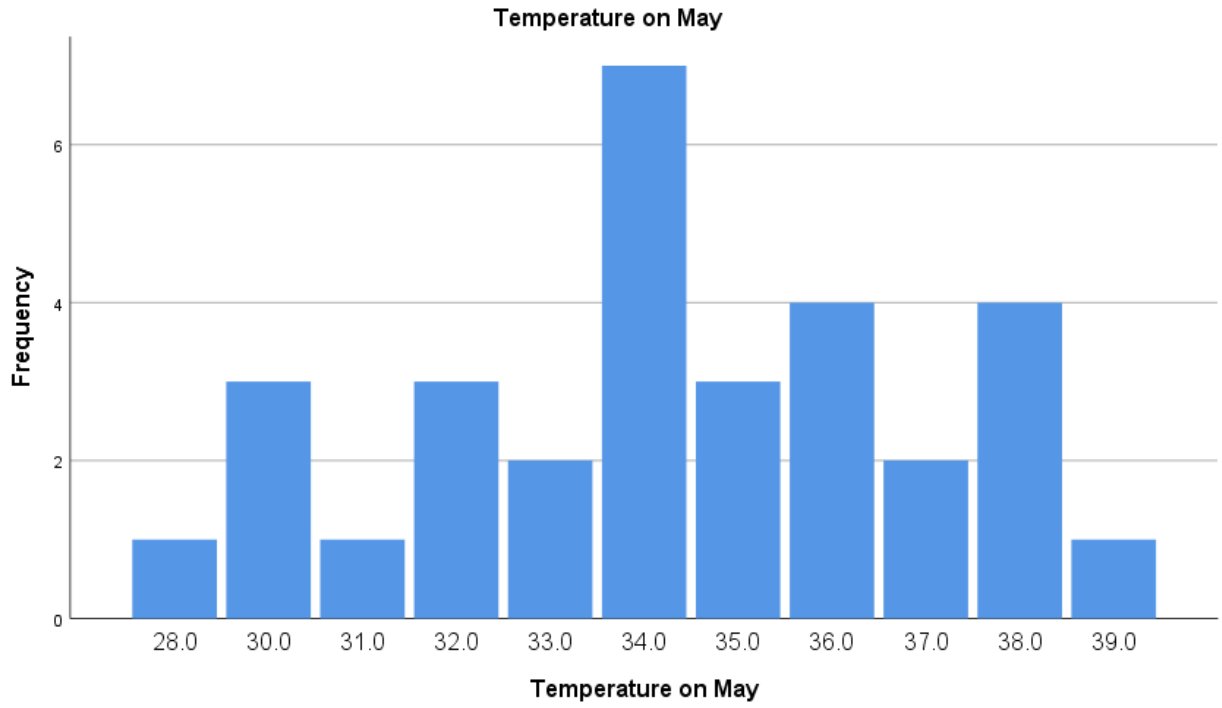
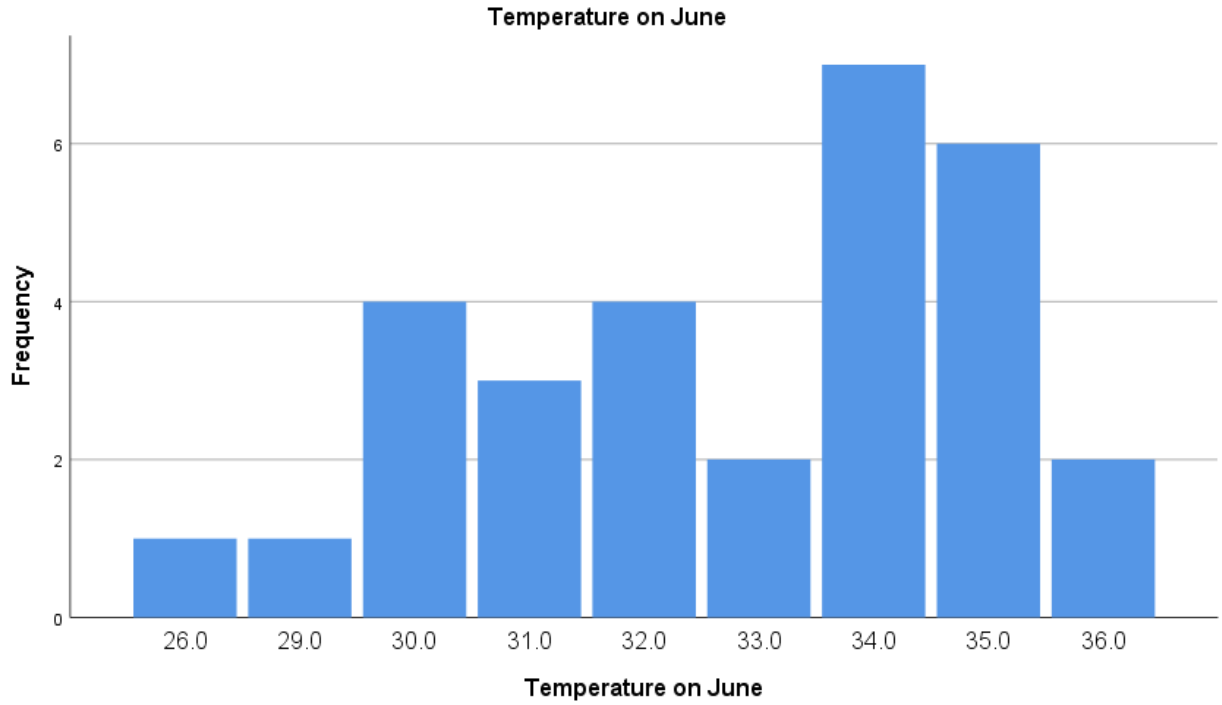
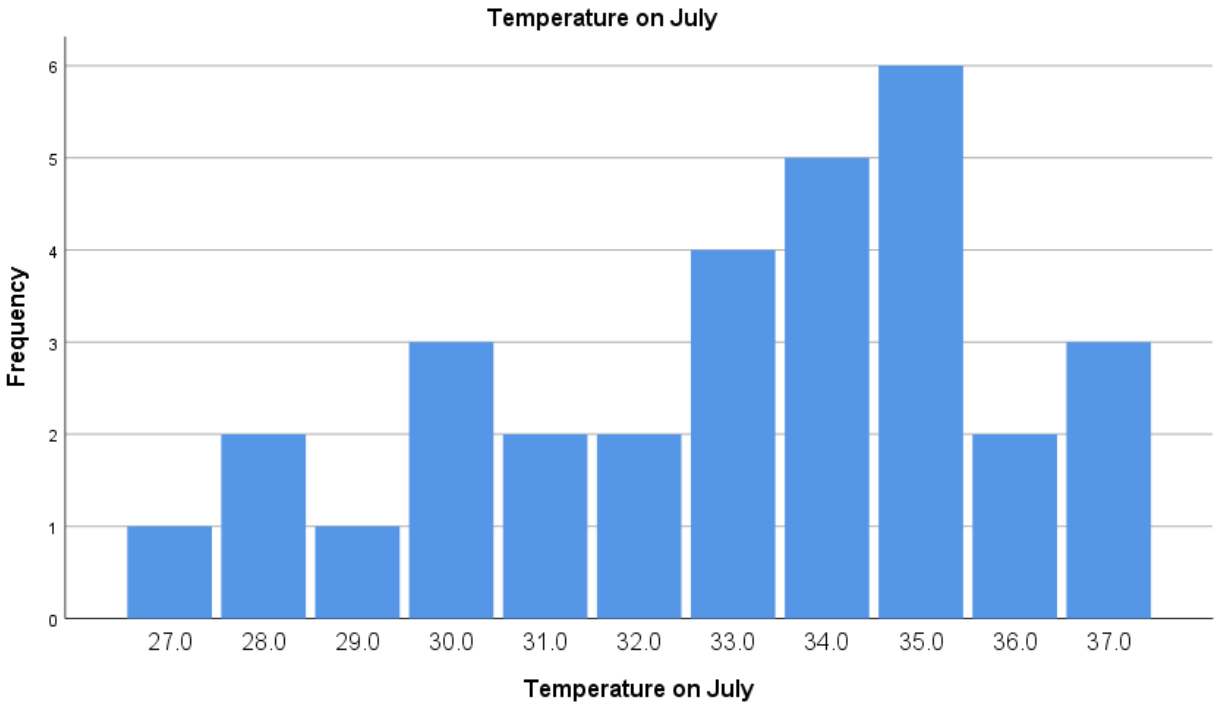
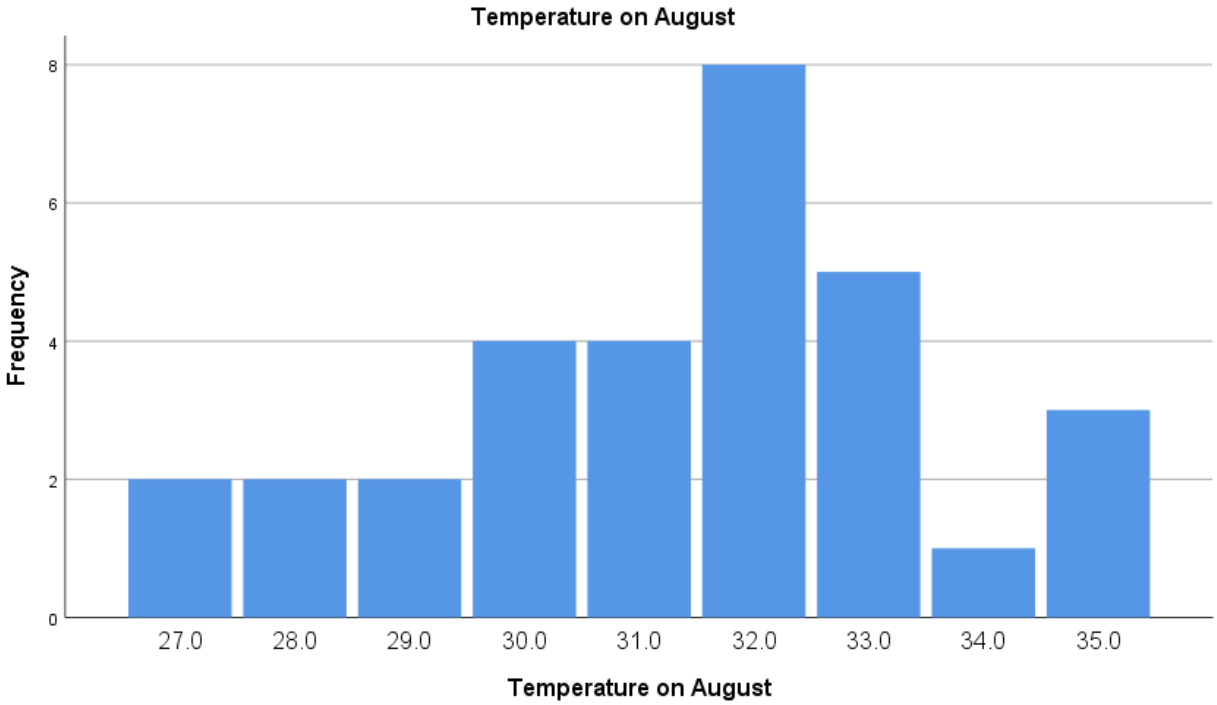
2
4
6
8
10
35.0
36.0
37.0
38.0
39.0
40.0
Temperature on April


Temperature on May
Frequency
0
2
4
6
28.0
30.0
31.0
32.0
33.0
34.0
35.0
36.0
37.0
38.0
39.0
Temperature on May


Temperature on June
Frequency
0
2
4
6
26.0
29.0
30.0
31.0
32.0
33.0
34.0
35.0
36.0
Temperature on June


Temperature on July
Frequency
0
1
2
3
4
5
6
27.0
28.0
29.0
30.0
31.0
32.0
33.0
34.0
35.0
36.0
37.0
Temperature on July


Temperature on August
Frequency
0
2
4
6
8
27.0
28.0
29.0
30.0
31.0
32.0
33.0
34.0
35.0
Temperature on August

PIE Chart

```
FREQUENCIES VARIABLES=January February March April May June July
August
  /STATISTICS=STDDEV VARIANCE RANGE MINIMUM MAXIMUM SEMEAN
  /PIECHART FREQ
  /ORDER=ANALYSIS.
```

Statistics

		Temperature on January	Temperature on February	Temperature on March	Temperature on April	Temperature on May
N	Valid	31	29	31	30	31
	Missing	0	2	0	1	0
Std. Error of Mean		.5157	.3158	.4019	.2553	.4977
Std. Deviation		2.8714	1.7005	2.2375	1.3983	2.7712
Variance		8.245	2.892	5.006	1.955	7.680
Range		10.0	6.0	8.0	5.0	11.0
Minimum		17.0	25.0	26.0	35.0	28.0
Maximum		27.0	31.0	34.0	40.0	39.0

Statistics

		Temperature on June	Temperature on July	Temperature on August
N	Valid	30	31	31
	Missing	1	0	0
Std. Error of Mean		.4340	.5016	.3923
Std. Deviation		2.3771	2.7928	2.1840
Variance		5.651	7.800	4.770
Range		10.0	10.0	8.0
Minimum		26.0	27.0	27.0
Maximum		36.0	37.0	35.0

Frequency Table

Temperature on January

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	17.0	2	6.5	6.5	6.5
	18.0	4	12.9	12.9	19.4
	21.0	1	3.2	3.2	22.6
	22.0	6	19.4	19.4	41.9
	23.0	5	16.1	16.1	58.1
	24.0	3	9.7	9.7	67.7
	25.0	6	19.4	19.4	87.1
	26.0	3	9.7	9.7	96.8
	27.0	1	3.2	3.2	100.0
	Total	31	100.0	100.0	

Temperature on February

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	25.0	4	12.9	13.8	13.8
	26.0	2	6.5	6.9	20.7
	27.0	4	12.9	13.8	34.5
	28.0	6	19.4	20.7	55.2
	29.0	8	25.8	27.6	82.8
	30.0	4	12.9	13.8	96.6
	31.0	1	3.2	3.4	100.0
	Total	29	93.5	100.0	
Missing	System	2	6.5		
Total		31	100.0		

Temperature on March

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	26.0	2	6.5	6.5	6.5
	27.0	1	3.2	3.2	9.7
	29.0	6	19.4	19.4	29.0

	30.0	4	12.9	12.9	41.9
	31.0	5	16.1	16.1	58.1
	32.0	5	16.1	16.1	74.2
	33.0	4	12.9	12.9	87.1
	34.0	4	12.9	12.9	100.0
	Total	31	100.0	100.0	

Temperature on April

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	35.0	5	16.1	16.7	16.7
	36.0	6	19.4	20.0	36.7
	37.0	5	16.1	16.7	53.3
	38.0	10	32.3	33.3	86.7
	39.0	3	9.7	10.0	96.7
	40.0	1	3.2	3.3	100.0
	Total	30	96.8	100.0	
Missing	System	1	3.2		
Total		31	100.0		

Temperature on May

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	28.0	1	3.2	3.2	3.2
	30.0	3	9.7	9.7	12.9
	31.0	1	3.2	3.2	16.1
	32.0	3	9.7	9.7	25.8
	33.0	2	6.5	6.5	32.3
	34.0	7	22.6	22.6	54.8
	35.0	3	9.7	9.7	64.5
	36.0	4	12.9	12.9	77.4
	37.0	2	6.5	6.5	83.9
	38.0	4	12.9	12.9	96.8
	39.0	1	3.2	3.2	100.0
	Total	31	100.0	100.0	

Temperature on June

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	26.0	1	3.2	3.3	3.3
	29.0	1	3.2	3.3	6.7
	30.0	4	12.9	13.3	20.0
	31.0	3	9.7	10.0	30.0
	32.0	4	12.9	13.3	43.3
	33.0	2	6.5	6.7	50.0
	34.0	7	22.6	23.3	73.3
	35.0	6	19.4	20.0	93.3
	36.0	2	6.5	6.7	100.0
	Total	30	96.8	100.0	
Missing	System	1	3.2		
Total		31	100.0		

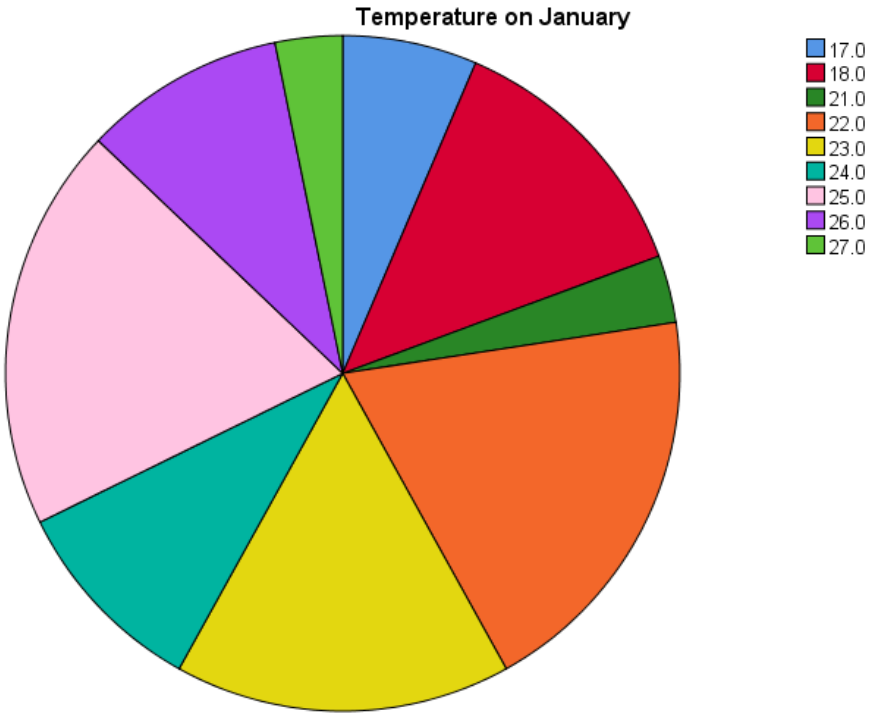
Temperature on July

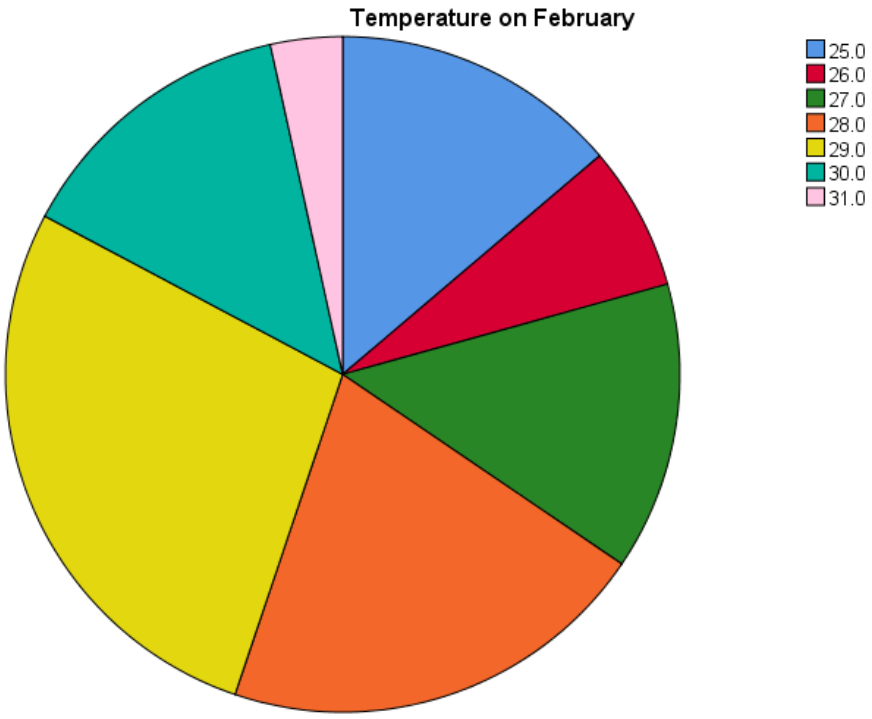
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	27.0	1	3.2	3.2	3.2
	28.0	2	6.5	6.5	9.7
	29.0	1	3.2	3.2	12.9
	30.0	3	9.7	9.7	22.6
	31.0	2	6.5	6.5	29.0
	32.0	2	6.5	6.5	35.5
	33.0	4	12.9	12.9	48.4
	34.0	5	16.1	16.1	64.5
	35.0	6	19.4	19.4	83.9
	36.0	2	6.5	6.5	90.3
	37.0	3	9.7	9.7	100.0
	Total	31	100.0	100.0	

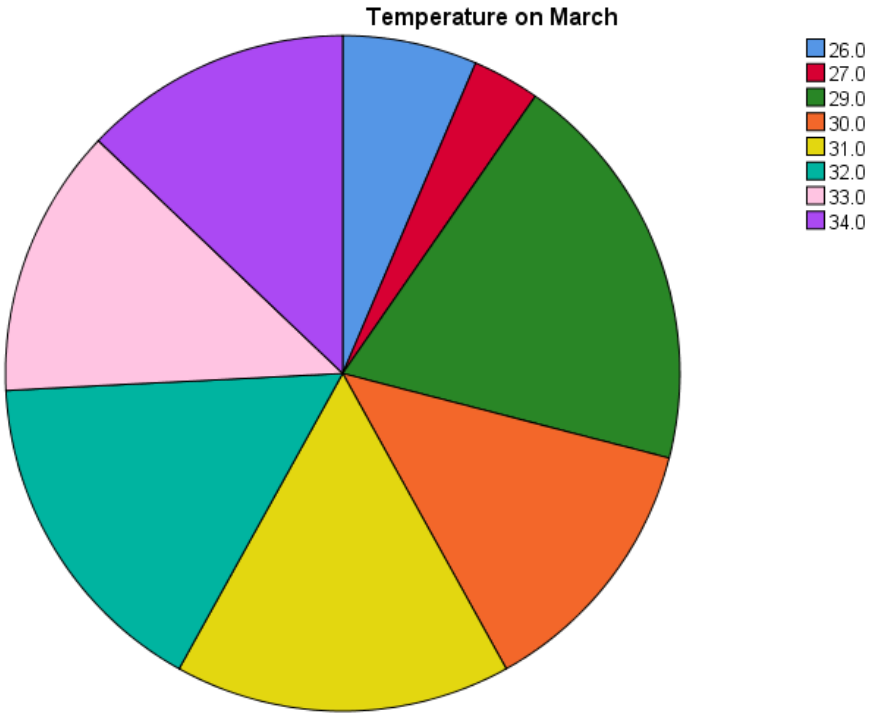
Temperature on August

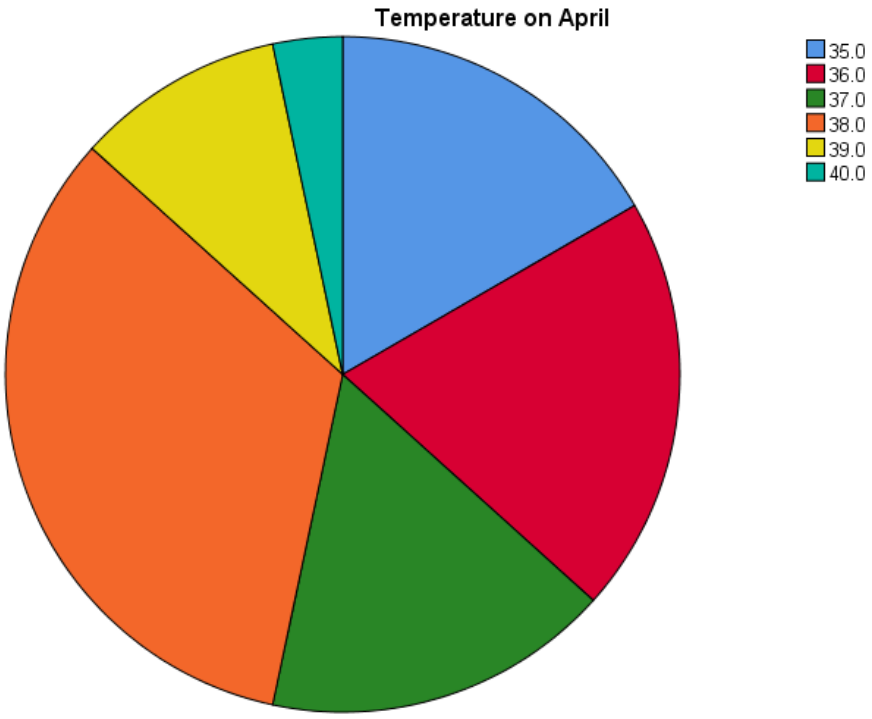
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	27.0	2	6.5	6.5	6.5
	28.0	2	6.5	6.5	12.9
	29.0	2	6.5	6.5	19.4
	30.0	4	12.9	12.9	32.3
	31.0	4	12.9	12.9	45.2
	32.0	8	25.8	25.8	71.0
	33.0	5	16.1	16.1	87.1
	34.0	1	3.2	3.2	90.3
	35.0	3	9.7	9.7	100.0
	Total	31	100.0	100.0	

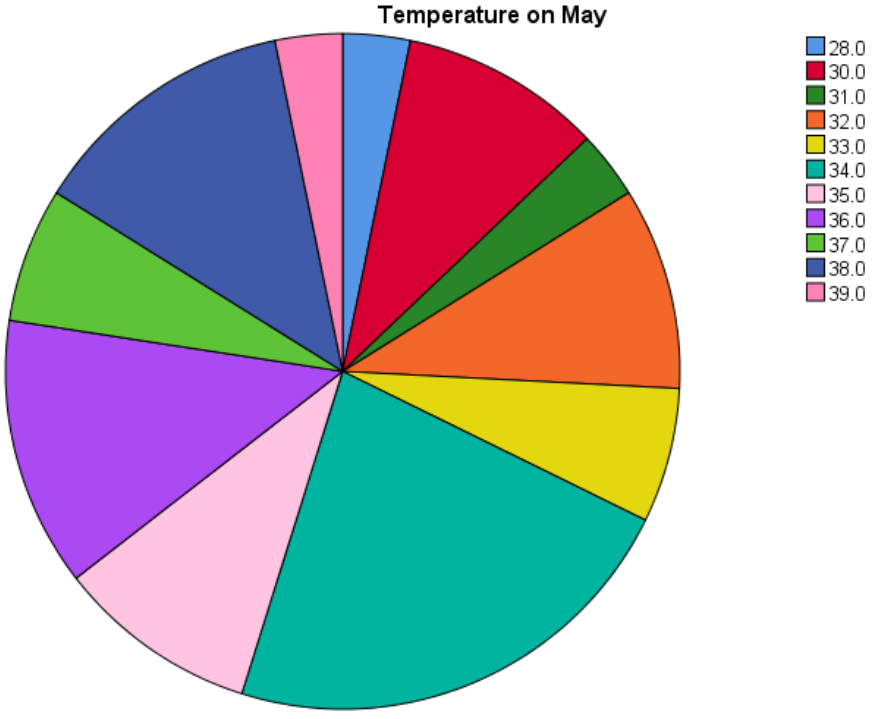
Pie Chart

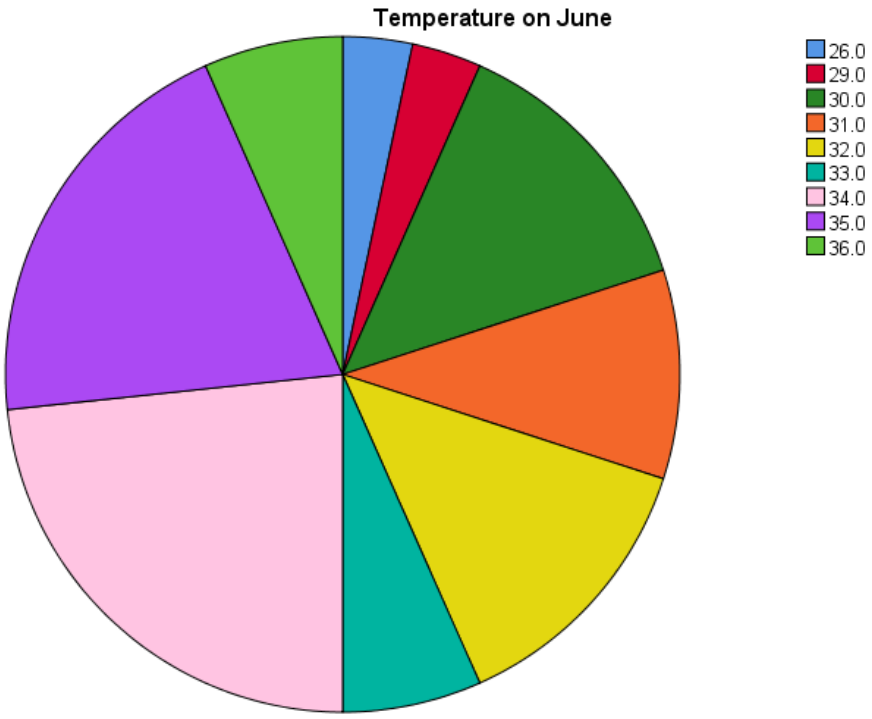


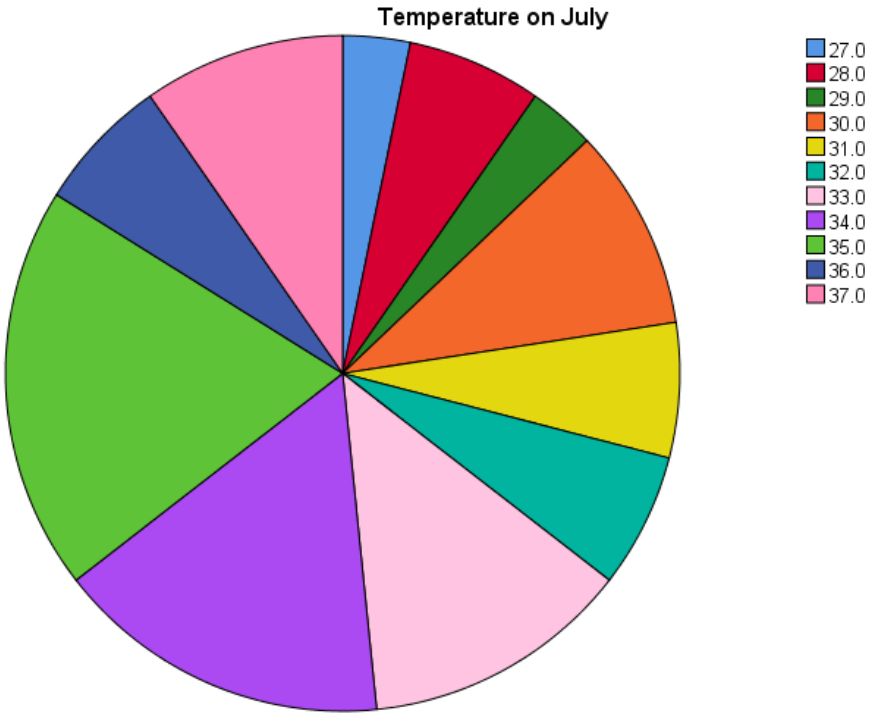

Temperature on February
25.0
26.0
27.0
28.0
29.0
30.0
31.0

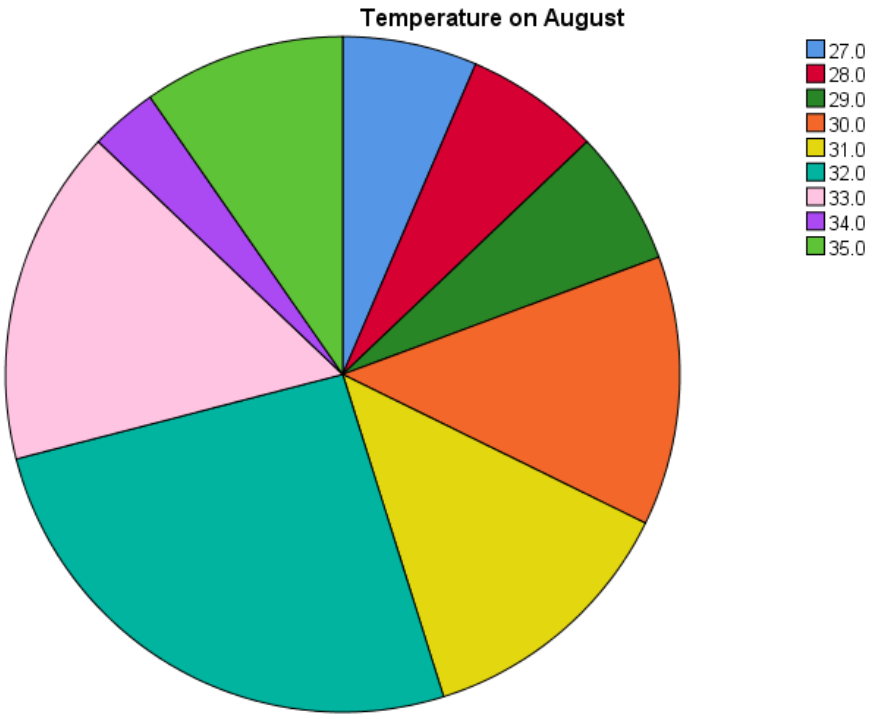

Temperature on March
26.0
27.0
29.0
30.0
31.0
32.0
33.0
34.0


Temperature on April
35.0
36.0
37.0
38.0
39.0
40.0


Temperature on May
28.0
30.0
31.0
32.0
33.0
34.0
35.0
36.0
37.0
38.0
39.0


Temperature on June
26.0
29.0
30.0
31.0
32.0
33.0
34.0
35.0
36.0


Temperature on July
27.0
28.0
29.0
30.0
31.0
32.0
33.0
34.0
35.0
36.0
37.0



Histogram

```
FREQUENCIES VARIABLES=January February March April May June July August
  /STATISTICS=STDDEV VARIANCE RANGE MINIMUM MAXIMUM SEMEAN MEAN
MEDIAN MODE
  /HISTOGRAM NORMAL
  /ORDER=ANALYSIS.
```

Statistics

		Temperature on January	Temperature on February	Temperature on March	Temperature on April	Temperature on May
N	Valid	31	29	31	30	31
	Missing	0	2	0	1	0
Mean		22.613	27.966	30.839	37.100	34.290
Std. Error of Mean		.5157	.3158	.4019	.2553	.4977
Median		23.000	28.000	31.000	37.000	34.000
Mode		22.0[a]	29.0	29.0	38.0	34.0
Std. Deviation		2.8714	1.7005	2.2375	1.3983	2.7712

Statistics

		Temperature on June	Temperature on July	Temperature on August
N	Valid	30	31	31
	Missing	1	0	0
Mean		32.733	33.000	31.355
Std. Error of Mean		.4340	.5016	.3923
Median		33.500	34.000	32.000
Mode		34.0	35.0	32.0
Std. Deviation		2.3771	2.7928	2.1840
Variance		5.651	7.800	4.770
Range		10.0	10.0	8.0
Minimum		26.0	27.0	27.0
Maximum		36.0	37.0	35.0

Variance	8.245	2.892	5.006	1.955	7.680
Range	10.0	6.0	8.0	5.0	11.0
Minimum	17.0	25.0	26.0	35.0	28.0
Maximum	27.0	31.0	34.0	40.0	39.0

a. Multiple modes exist. The smallest value is shown

Frequency Table
Temperature on January

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	17.0	2	6.5	6.5	6.5
	18.0	4	12.9	12.9	19.4
	21.0	1	3.2	3.2	22.6
	22.0	6	19.4	19.4	41.9
	23.0	5	16.1	16.1	58.1
	24.0	3	9.7	9.7	67.7
	25.0	6	19.4	19.4	87.1
	26.0	3	9.7	9.7	96.8
	27.0	1	3.2	3.2	100.0
	Total	31	100.0	100.0	

Temperature on February

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	25.0	4	12.9	13.8	13.8
	26.0	2	6.5	6.9	20.7
	27.0	4	12.9	13.8	34.5
	28.0	6	19.4	20.7	55.2
	29.0	8	25.8	27.6	82.8
	30.0	4	12.9	13.8	96.6
	31.0	1	3.2	3.4	100.0

	Total	29	93.5	100.0	
Missing	System	2	6.5		
Total		31	100.0		

Temperature on March

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	26.0	2	6.5	6.5	6.5
	27.0	1	3.2	3.2	9.7
	29.0	6	19.4	19.4	29.0
	30.0	4	12.9	12.9	41.9
	31.0	5	16.1	16.1	58.1
	32.0	5	16.1	16.1	74.2
	33.0	4	12.9	12.9	87.1
	34.0	4	12.9	12.9	100.0
	Total	31	100.0	100.0	

Temperature on April

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	35.0	5	16.1	16.7	16.7
	36.0	6	19.4	20.0	36.7
	37.0	5	16.1	16.7	53.3
	38.0	10	32.3	33.3	86.7
	39.0	3	9.7	10.0	96.7
	40.0	1	3.2	3.3	100.0
	Total	30	96.8	100.0	
Missing	System	1	3.2		
Total		31	100.0		

Temperature on May

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	28.0	1	3.2	3.2	3.2
	30.0	3	9.7	9.7	12.9
	31.0	1	3.2	3.2	16.1
	32.0	3	9.7	9.7	25.8
	33.0	2	6.5	6.5	32.3
	34.0	7	22.6	22.6	54.8
	35.0	3	9.7	9.7	64.5
	36.0	4	12.9	12.9	77.4

	37.0	2	6.5	6.5	83.9
	38.0	4	12.9	12.9	96.8
	39.0	1	3.2	3.2	100.0
	Total	31	100.0	100.0	

Temperature on June

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	26.0	1	3.2	3.3	3.3
	29.0	1	3.2	3.3	6.7
	30.0	4	12.9	13.3	20.0
	31.0	3	9.7	10.0	30.0
	32.0	4	12.9	13.3	43.3
	33.0	2	6.5	6.7	50.0
	34.0	7	22.6	23.3	73.3
	35.0	6	19.4	20.0	93.3
	36.0	2	6.5	6.7	100.0
	Total	30	96.8	100.0	
Missing	System	1	3.2		
Total		31	100.0		

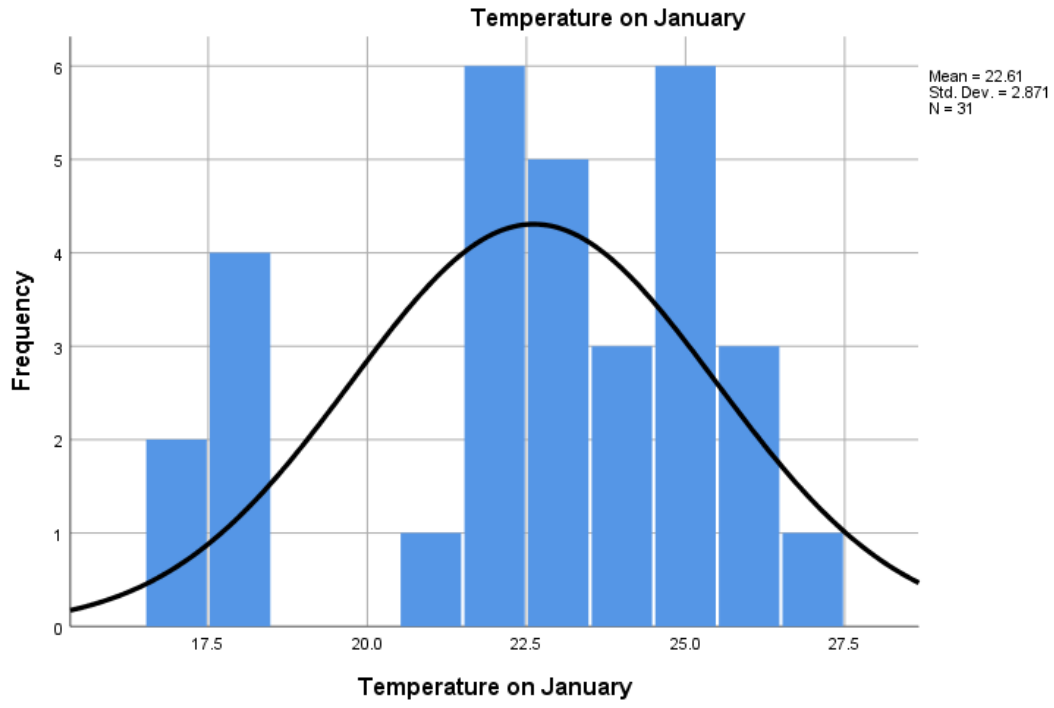
Temperature on July

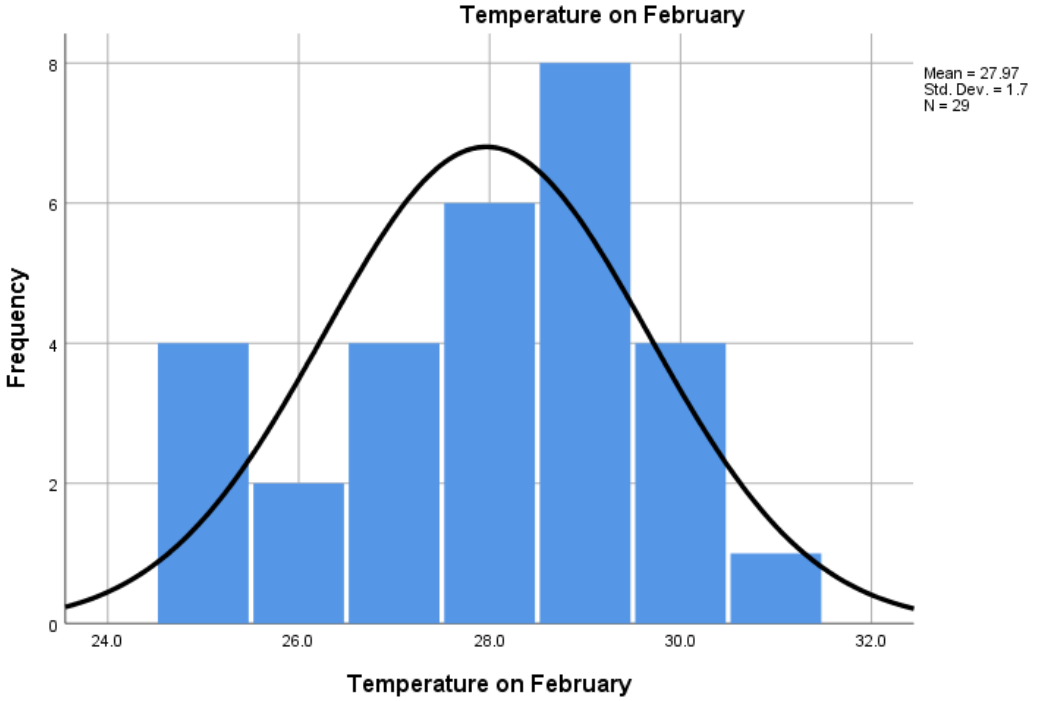
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	27.0	1	3.2	3.2	3.2
	28.0	2	6.5	6.5	9.7
	29.0	1	3.2	3.2	12.9
	30.0	3	9.7	9.7	22.6
	31.0	2	6.5	6.5	29.0
	32.0	2	6.5	6.5	35.5
	33.0	4	12.9	12.9	48.4
	34.0	5	16.1	16.1	64.5
	35.0	6	19.4	19.4	83.9
	36.0	2	6.5	6.5	90.3
	37.0	3	9.7	9.7	100.0
	Total	31	100.0	100.0	

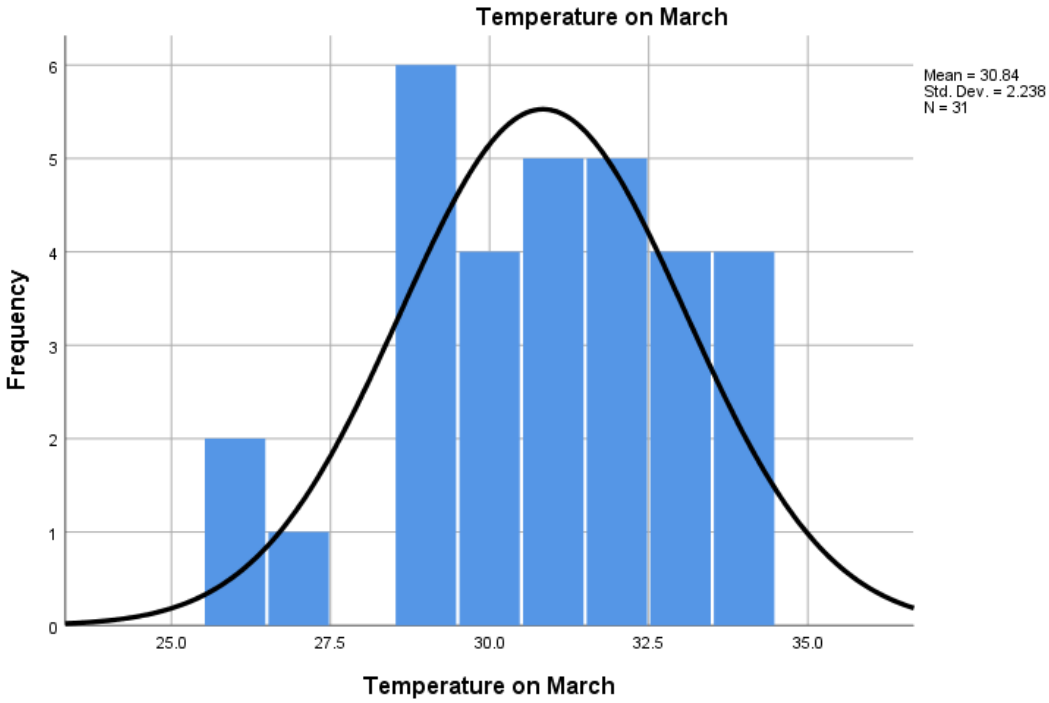
Temperature on August

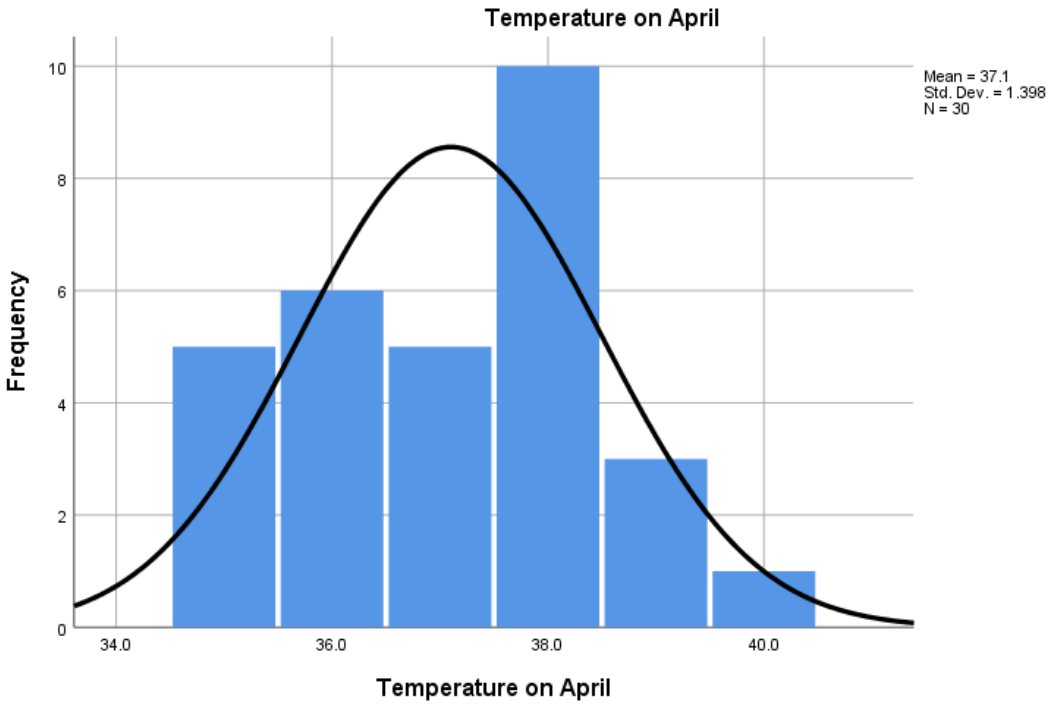
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	27.0	2	6.5	6.5	6.5
	28.0	2	6.5	6.5	12.9
	29.0	2	6.5	6.5	19.4
	30.0	4	12.9	12.9	32.3
	31.0	4	12.9	12.9	45.2
	32.0	8	25.8	25.8	71.0
	33.0	5	16.1	16.1	87.1
	34.0	1	3.2	3.2	90.3
	35.0	3	9.7	9.7	100.0
	Total	31	100.0	100.0	

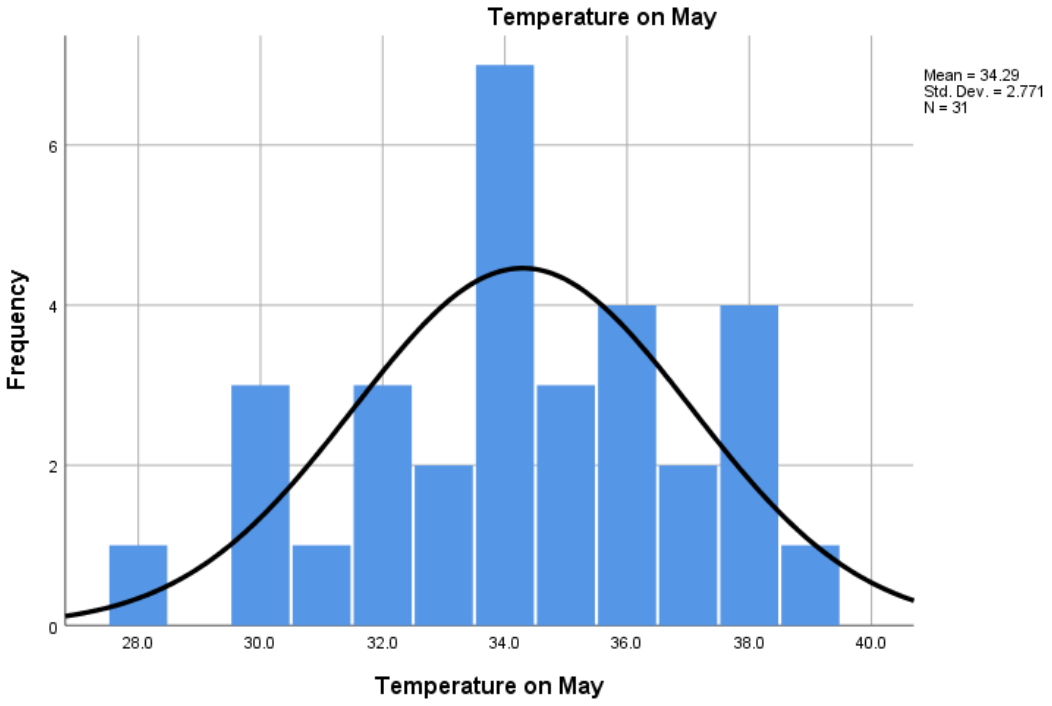
Histogram

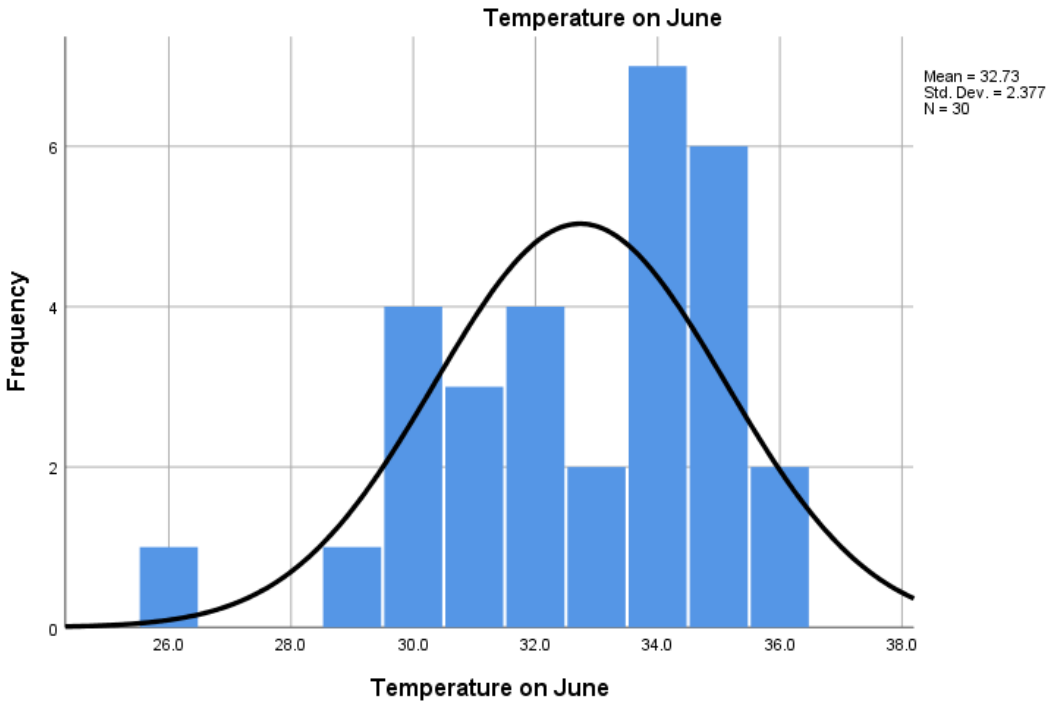


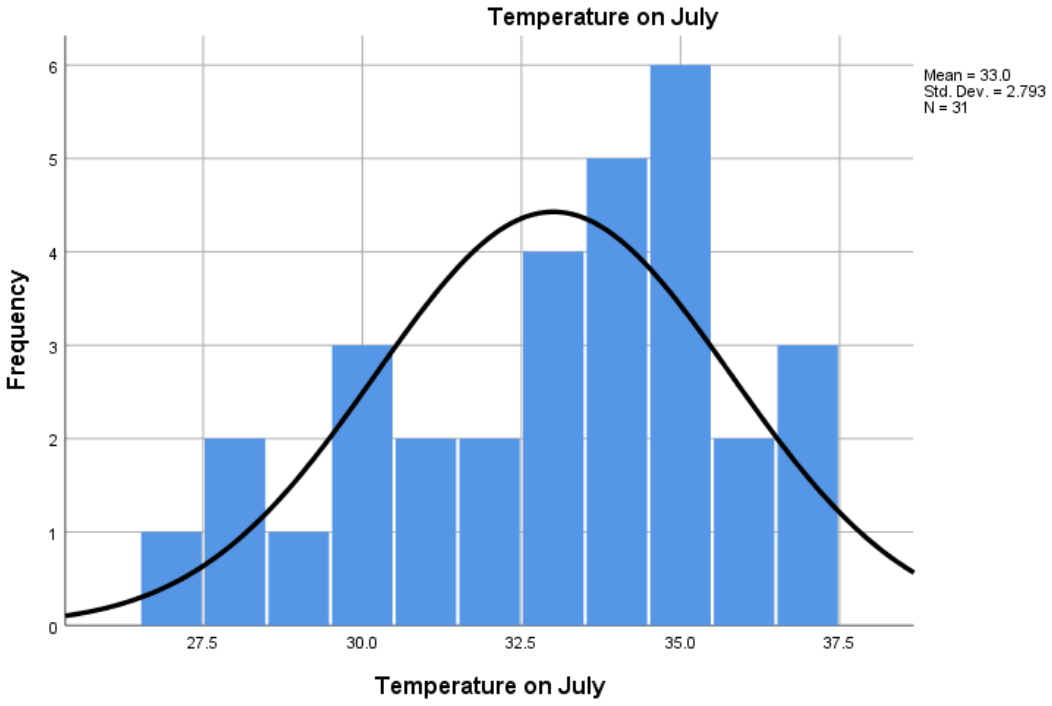

Temperature on February
Mean = 27.97
Std. Dev. = 1.7
N = 29
Frequency
0
2
4
6
8
24.0
26.0
28.0
30.0
32.0
Temperature on February

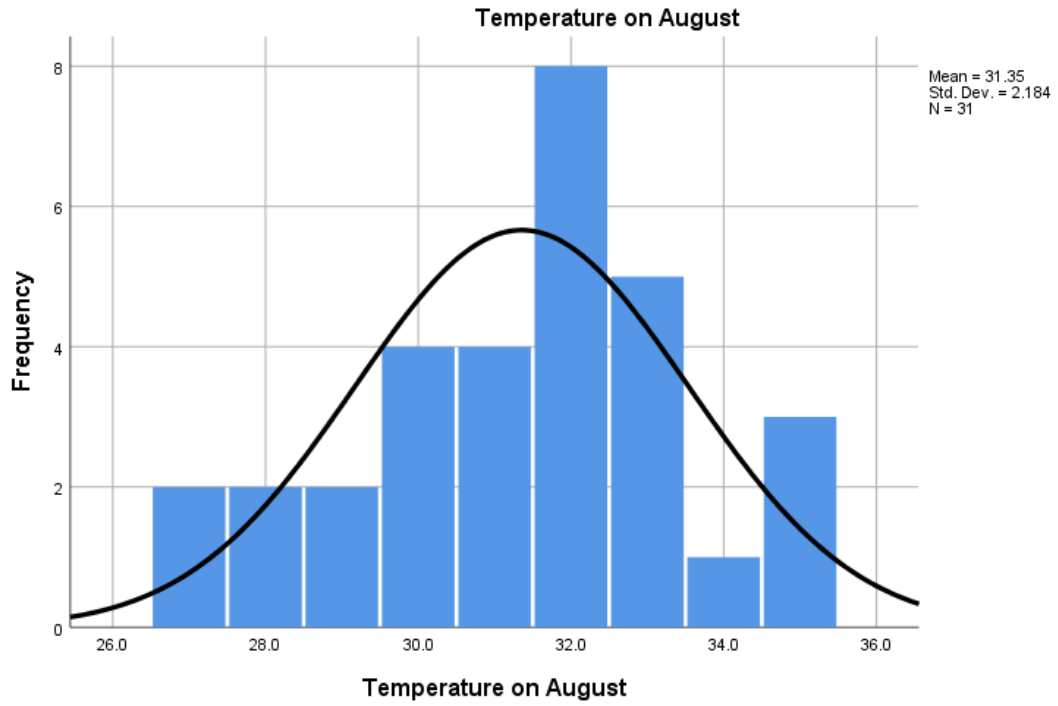

Temperature on March
Mean = 30.84
Std. Dev. = 2.238
N = 31
Frequency
0
1
2
3
4
5
6
25.0
27.5
30.0
32.5
35.0
Temperature on March


Temperature on April
Mean = 37.1
Std. Dev. = 1.398
N = 30
Frequency
0
2
4
6
8
10
34.0
36.0
38.0
40.0
Temperature on April


Temperature on May
Mean = 34.29
Std. Dev. = 2.771
N = 31
Frequency
0
2
4
6
28.0
30.0
32.0
34.0
36.0
38.0
40.0
Temperature on May


Temperature on June
Mean = 32.73
Std. Dev. = 2.377
N = 30
Frequency
0
2
4
6
26.0
28.0
30.0
32.0
34.0
36.0
38.0
Temperature on June


Temperature on July
Mean = 33.0
Std. Dev. = 2.793
N = 31
Frequency
0
1
2
3
4
5
6
27.5
30.0
32.5
35.0
37.5
Temperature on July



Correlation

```
CORRELATIONS
  /VARIABLES=January February March April May June July August
  /PRINT=TWOTAIL NOSIG
  /MISSING=PAIRWISE.
```

Correlations

		Temperature on January	Temperature on February	Temperature on March
Temperature on January	Pearson Correlation	1	-.332	-.109
	Sig. (2-tailed)		.078	.561
	N	31	29	31
Temperature on February	Pearson Correlation	-.332	1	.262
	Sig. (2-tailed)	.078		.170
	N	29	29	29
Temperature on March	Pearson Correlation	-.109	.262	1
	Sig. (2-tailed)	.561	.170	
	N	31	29	31
Temperature on April	Pearson Correlation	.169	.343	.181

	Sig. (2-tailed)	.373	.069	.339
	N	30	29	30
Temperature on May	Pearson Correlation	-.249	.003	.051
	Sig. (2-tailed)	.176	.988	.786
	N	31	29	31
Temperature on June	Pearson Correlation	-.188	-.082	-.017
	Sig. (2-tailed)	.319	.674	.930
	N	30	29	30
Temperature on July	Pearson Correlation	.054	.382*	-.133
	Sig. (2-tailed)	.773	.041	.475
	N	31	29	31
Temperature on August	Pearson Correlation	.055	.031	.230
	Sig. (2-tailed)	.771	.872	.212
	N	31	29	31

Correlations

		Temperature on April	Temperature on May	Temperature on June
Temperature on January	Pearson Correlation	.169	-.249	-.188
	Sig. (2-tailed)	.373	.176	.319
	N	30	31	30
Temperature on February	Pearson Correlation	.343	.003	-.082
	Sig. (2-tailed)	.069	.988	.674
	N	29	29	29
Temperature on March	Pearson Correlation	.181	.051	-.017
	Sig. (2-tailed)	.339	.786	.930
	N	30	31	30
Temperature on April	Pearson Correlation	1	.141	-.189
	Sig. (2-tailed)		.458	.318
	N	30	30	30
Temperature on May	Pearson Correlation	.141	1	-.058
	Sig. (2-tailed)	.458		.762
	N	30	31	30
Temperature on June	Pearson Correlation	-.189	-.058	1
	Sig. (2-tailed)	.318	.762	
	N	30	30	30
Temperature on July	Pearson Correlation	.317	-.362*	-.147
	Sig. (2-tailed)	.088	.046	.438
	N	30	31	30
Temperature on August	Pearson Correlation	.035	-.249	.339
	Sig. (2-tailed)	.855	.177	.067
	N	30	31	30

Correlations

		Temperature on July	Temperature on August
Temperature on January	Pearson Correlation	.054	.055
	Sig. (2-tailed)	.773	.771
	N	31	31
Temperature on February	Pearson Correlation	.382*	.031
	Sig. (2-tailed)	.041	.872
	N	29	29
Temperature on March	Pearson Correlation	-.133	.230
	Sig. (2-tailed)	.475	.212
	N	31	31
Temperature on April	Pearson Correlation	.317	.035
	Sig. (2-tailed)	.088	.855
	N	30	30
Temperature on May	Pearson Correlation	-.362*	-.249
	Sig. (2-tailed)	.046	.177
	N	31	31
Temperature on June	Pearson Correlation	-.147	.339
	Sig. (2-tailed)	.438	.067
	N	30	30
Temperature on July	Pearson Correlation	1	.005
	Sig. (2-tailed)		.977
	N	31	31
Temperature on August	Pearson Correlation	.005	1
	Sig. (2-tailed)	.977	
	N	31	31

*. Correlation is significant at the 0.05 level (2-tailed).

Variance

```
DESCRIPTIVES VARIABLES=January February March April May June July August
  /STATISTICS=MEAN STDDEV VARIANCE RANGE MIN MAX.
```

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Temperature on January	31	10.0	17.0	27.0	22.613	2.8714
Temperature on February	29	6.0	25.0	31.0	27.966	1.7005
Temperature on March	31	8.0	26.0	34.0	30.839	2.2375
Temperature on April	30	5.0	35.0	40.0	37.100	1.3983
Temperature on May	31	11.0	28.0	39.0	34.290	2.7712

Temperature on June	30	10.0	26.0	36.0	32.733	2.3771
Temperature on July	31	10.0	27.0	37.0	33.000	2.7928
Temperature on August	31	8.0	27.0	35.0	31.355	2.1840
Valid N (listwise)	29					

Descriptive Statistics

	Variance
Temperature on January	8.245
Temperature on February	2.892
Temperature on March	5.006
Temperature on April	1.955
Temperature on May	7.680
Temperature on June	5.651
Temperature on July	7.800
Temperature on August	4.770
Valid N (listwise)	

Skewness

```
DESCRIPTIVES VARIABLES=January February March April May June July August
  /STATISTICS=MEAN STDDEV VARIANCE RANGE MIN MAX SKEWNESS.
```

Descriptive Statistics

	N Statistic	Range Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic
Temperature on January	31	10.0	17.0	27.0	22.613	2.8714
Temperature on February	29	6.0	25.0	31.0	27.966	1.7005
Temperature on March	31	8.0	26.0	34.0	30.839	2.2375
Temperature on April	30	5.0	35.0	40.0	37.100	1.3983
Temperature on May	31	11.0	28.0	39.0	34.290	2.7712
Temperature on June	30	10.0	26.0	36.0	32.733	2.3771
Temperature on July	31	10.0	27.0	37.0	33.000	2.7928
Temperature on August	31	8.0	27.0	35.0	31.355	2.1840
Valid N (listwise)	29					

Descriptive Statistics

	Variance Statistic	Skewness Statistic	Std. Error
Temperature on January	8.245	-.694	.421
Temperature on February	2.892	-.411	.434
Temperature on March	5.006	-.471	.421
Temperature on April	1.955	-.028	.427
Temperature on May	7.680	-.322	.421
Temperature on June	5.651	-.832	.427
Temperature on July	7.800	-.540	.421
Temperature on August	4.770	-.303	.421
Valid N (listwise)			

Conclusion:

The analysis of temperature data from January to August reveals clear trends in seasonal variation. The bar graph highlights the increase in temperature as we move toward the warmer months, while the histogram confirms the concentration of temperatures within specific ranges. The pie chart offers a visual summary of temperature distributions, and the correlation analysis shows a significant relationship between dates and temperature progression. These visual tools collectively provide a comprehensive overview, aiding in more informed decision-making for industries dependent on climate and offering insights into how temperatures change throughout the year.

Reference:

Weather in January 2024 in Dhaka, Bangladesh (timeanddate.com)