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A Problem With Presidents

Summary

In this task we were provided CSV data containing the birth and death information of the presidents of the United States. The task was to add extra columns containing the number of days, months, years lived by each of these presidents and then discover relation between them.

With these details I was able to calculate the mean which was 26409.245 days which is the same as weighted average (since no weights were given in the dataset the weighted average is the same as mean). The median was 26227 days, the mode was 24767 days, the Max was 35762 days the Min was 16978 days the Standard Deviation was 4531.67 days.

Implementation

I used Python programming language to implement this project. I created a “main.py” file which contains the source code of all the calculations along with the tables and graphs. To perform the statistical methods I used the builtin numpy library functions.

To handle inconsistencies in the birth date and death date column (Most of the months were 3 lettered words apart from June and July which were 4 lettered) while creating the birthObj and deathObj, I used a try/catch block to convert the string object in Date Object as per the given option.

Also, for calculating the weighted average, since no weights were provided in the dataset I have simply calculated the average.

Tables and Plots

I was able to create the following tables and plots as of 30th Aug, 2022.

Top 10 Oldest Presidents

PRESIDENT	BIRTH DATE	BIRTH PLACE	DEATH DATE	LOCATION OF DEATH	year_of_birth	lived_years	lived_months	lived_days
Jimmy Carter	Oct 1, 1924	Plains, Georgia			1924	97	1174	35762
George Bush	June 12, 1924	Milton, Mass.	Nov 30, 2018	Houston, Texas	1924	94	1133	34504
Gerald Ford	July 14, 1913	Omaha, Nebraska	Dec 26, 2006	Rancho Mirage, Cal.	1913	93	1121	34133
Ronald Reagan	Feb 6, 1911	Tampico, Illinois	June 5, 2004	Los Angeles, Cal.	1911	93	1119	34088
John Adams	Oct 30, 1735	Quincy, Mass.	July 4, 1826	Quincy, Mass.	1735	90	1088	33119
Herbert Hoover	Aug 10, 1874	West Branch, Iowa	Oct 20, 1964	New York, New York	1874	90	1082	32943
Harry S. Truman	May 8, 1884	Lamar, Missouri	Dec 26, 1972	Kansas City, Missouri	1884	88	1063	32373
James Madison	Mar 16, 1751	Port Conway, Va.	June 28, 1836	Orange Co., Va.	1751	85	1023	31150
Thomas Jefferson	Apr 13, 1743	Albemarle Co., Va.	July 4, 1826	Albemarle Co., Va.	1743	83	998	30397
Richard Nixon	Jan 9, 1913	Yorba Linda, Cal.	Apr 22, 1994	New York, New York	1913	81	975	29688

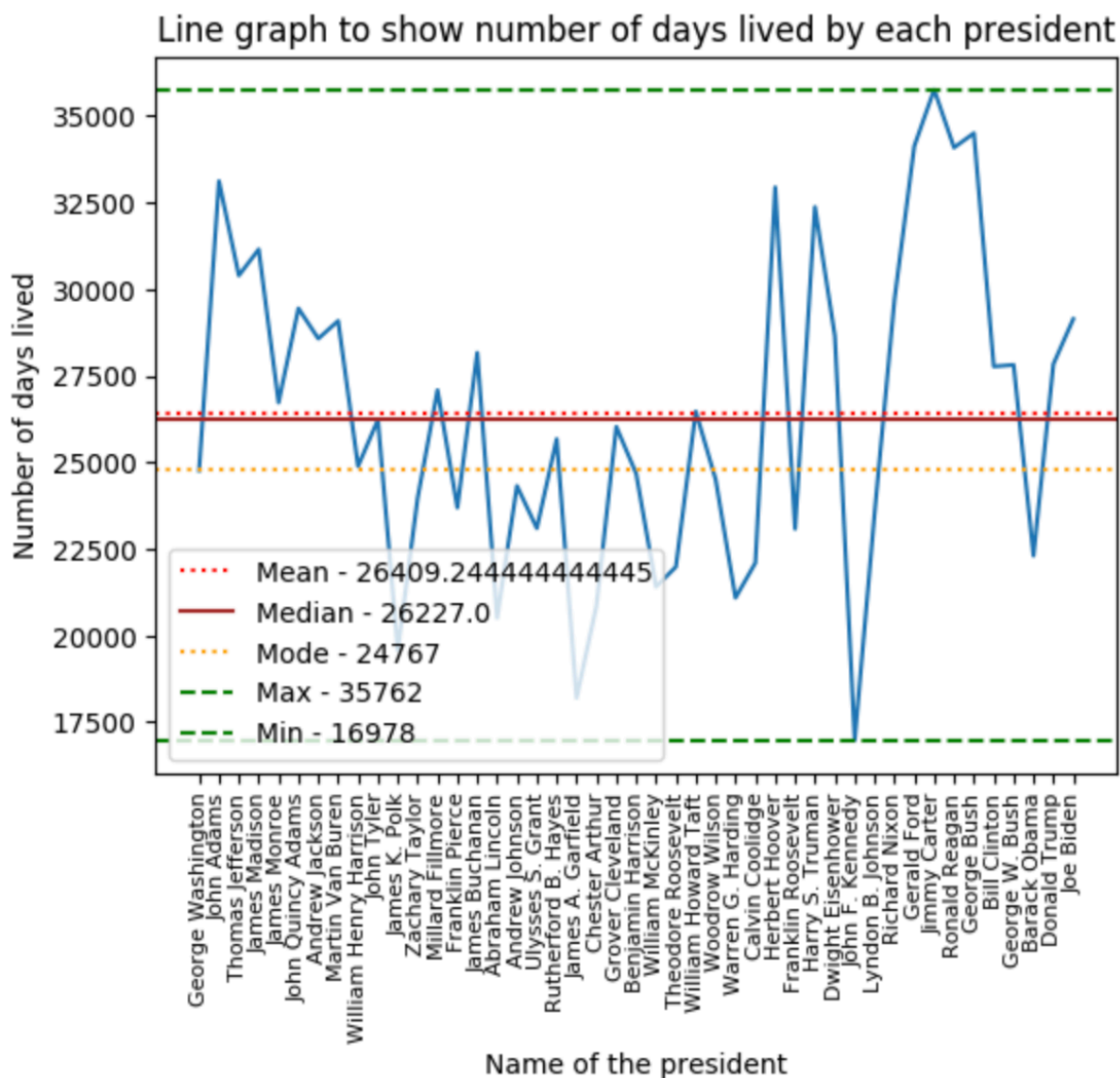
Top 10 Youngest Presidents

PRESIDENT	BIRTH DATE	BIRTH PLACE	DEATH DATE	LOCATION OF DEATH	year_of_birth	lived_years	lived_months	lived_days
John F. Kennedy	May 29, 1917	Brookline, Mass.	Nov 22, 1963	Dallas, Texas	1917	46	557	16978
James A. Garfield	Nov 19, 1831	Cuyahoga Co., Ohio	Sep 19, 1881	Elberon, New Jersey	1831	49	598	18202
James K. Polk	Nov 2, 1795	Mecklenburg Co., N.C.	June 15, 1849	Nashville, Tennessee	1795	53	643	19583
Abraham Lincoln	Feb 12, 1809	LaRue Co., Kentucky	Apr 15, 1865	Washington, D.C.	1809	56	674	20516
Chester Arthur	Oct 5, 1829	Fairfield, Vermont	Nov 18, 1886	New York, New York	1829	57	685	20863
Warren G. Harding	Nov 2, 1865	Morrow County, Ohio	Aug 2, 1923	San Francisco, Cal.	1865	57	693	21091
William McKinley	Jan 29, 1843	Niles, Ohio	Sep 14, 1901	Buffalo, New York	1843	58	703	21412
Theodore Roosevelt	Oct 27, 1858	New York, New York	Jan 6, 1919	Oyster Bay, New York	1858	60	722	21985
Calvin Coolidge	July 4, 1872	Plymouth, Vermont	Jan 5, 1933	Northampton, Mass.	1872	60	726	22099
Barack Obama	Aug 4, 1961	Honolulu, Hawaii			1961	61	732	22306

Statistical Analysis of the Data

Statistics Type	Value
Mean	26409.244444444445
Weighted Average	26409.244444444445
Median	26227.0
Mode	24767.0
Max	35762.0
Min	16978.0
Standard Deviation	4531.673427262607

Plot



Conclusion

With the given data we can look at the trends of the presidents life expectancy. The range of ages were 46-97 years , with the average age of 72 years.

This project gave me hands-on experience in Python, Numpy, Pandas and other libraries available in the Python environment. Although I have been in software development from the past 3 years but this was a great learning experience for me as I have mostly coded in Java earlier but this assignment helped me learn Python. I am really looking forward to discuss with you about this opportunity and work with CTS-IT this year. Thank You!