

DAS 2022

Unified Line and Paragraph Detection by Graph Neural Networks

Shuang Liu, Renshen Wang, Michalis Raptis, Yasuhisa Fujii

s3liu@eng.ucsd.edu, {rewang, mraptis, yasuhisaf}@google.com

Google Research

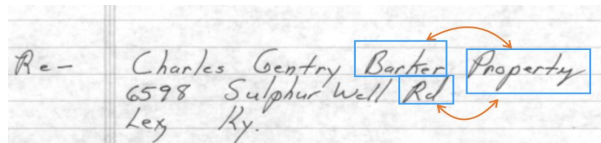


Agenda

- Problem Statement
- Related Work
- Main Challenge
- Proposed Method
- Experiments

Related Work — Layout Analysis

- Using heuristic algorithms to get line-level clusters (e.g. Text Flow [1])
- Clustering line-level bounding boxes into clusters [2]
- Image-based detection models [3]



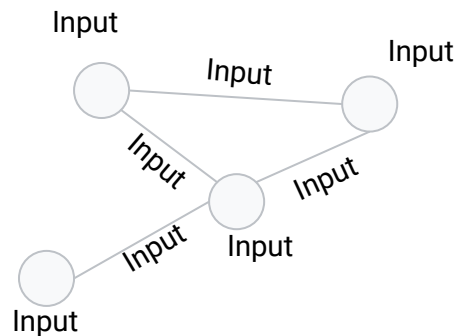
A difficult handwriting example for Text Flow

[1] Shangxuan Tian et al. Text Flow: A Unified Text Detection System in Natural Scene Images. In Proceedings of the IEEE/CVF International Conference on Computer Vision, 2015

[2] Renshen Wang et al. Post-OCR Paragraph Recognition by Graph Convolutional Networks. In Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision, 2022.

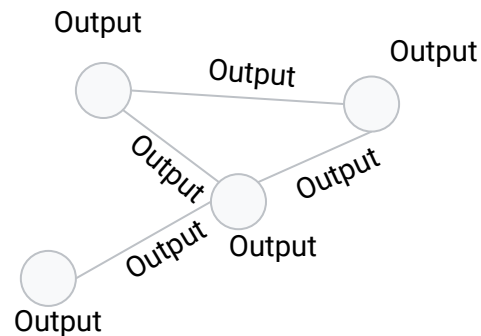
[3] Xu Zhong et al. Publaynet: Largest dataset ever for document layout analysis. International Conference on Document Analysis and Recognition, 2019

Related Work — Graph Convolutional Networks



Iterative
Message
Passing

A large, light gray arrow pointing from the left graph to the right graph, indicating the process of iterative message passing.



GCN prediction – box_left

- **box_left(b1, b2)**: 1 if **b1** and **b2** are in the same line and **b1** is adjacent to **b2** to the left, 0 otherwise

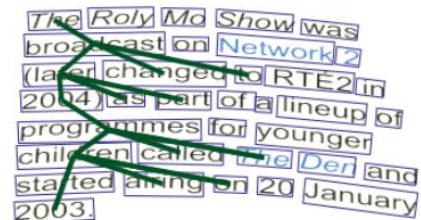
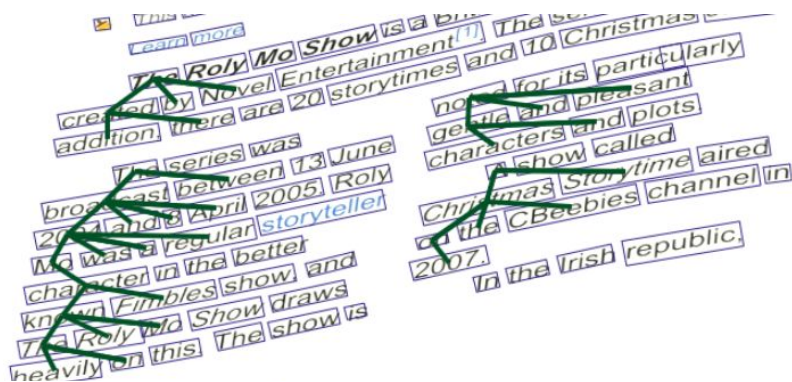
[Learn more](#)
The Roly Mo Show is a British children's television programme created by Noel Entertainments. The show, which is broadcast on RTE2, is a Christmas special. In addition, there are 20 storytimes and 10 Christmas storytimes. The series was broadcast between 13 June 2004 and 8 April 2005. Roly Mo was a regular storyteller on the CBeebies channel in 2007. The show is heavily based on the Irish folk tale of the Roly Mo. The show is noted for its particularly gentle and pleasant characters and plots. A show called Christmas Storytime aired on the CBeebies channel in 2007. In the Irish Republic.

The Roly Mo Show was broadcast on Network 2 (later changed to RTE2) in 2004. It is part of a lineup of programmes for younger children called **The Den** and started airing on 20 January 2003.

GCN boxes and **box_left** labels

GCN prediction – box_above

- **box_above(b1, b2)**: conditioned on **b1** being the first box in a line, **1** if **b1** and **b2** are in the same paragraph and **b1** is in a line that is directly above the line **b2** is in.



GCN boxes and **box_above** labels

GCN prediction – box_below

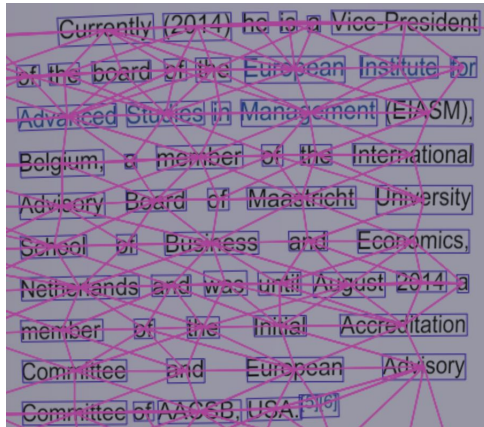
- **box_below(b1, b2)**: conditioned on **b1** being the first box in a line, **1** if **b1** and **b2** are in the same paragraph and **b1** is in a line that is directly below the line **b2** is in.



GCN boxes and **box_below** labels

Do we really need both box_above and box_below?

- **box_below** fails but **box_above** succeeds



Currently (2014) he is a Vice-President of the board of the European Institute for Advanced Studies in Management (EIASM), Belgium, a member of the International Advisory Board of Maastricht University School of Business and Economics, Netherlands and was until August 2014 a member of the Initial Accreditation Committee and European Advisory Committee of AACSB, USA.^{[5][6]}



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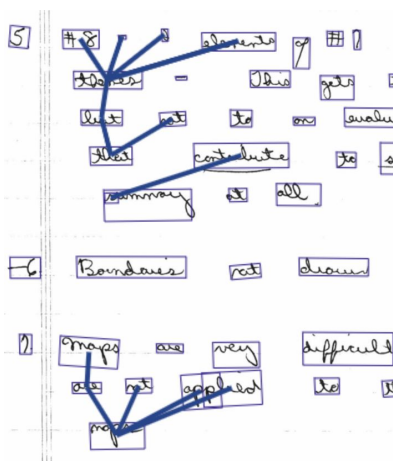


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The left image shows the graph edges. **box_below** could miss the connection between the first two lines (middle image), but this could be complemented by **box_above** (right image).

Do we really need both `box_above` and `box_below`?

- `box_above` fails but `box_below` succeeds



The left image shows the graph edges. `box_above` could miss the connection between the first two lines of paragraphs (right image), but this could be complemented by `box_below` (middle image).

GCN prediction visualization

- Blue: box_left
- Magenta: box_above/box_below

[This article](#)
[Learn more](#)

The Roly Mo Show is a British children's television series created by Noel-Entertainment. The series was first broadcast in addition, there are 20 storytimes and 10 Christmas storytimes.

The series was broadcast between 13 June 2004 and 8 April 2005. Roly Mo was a regular storyteller character in the better known *Fimbles* show, and *The Roly Mo Show* draws heavily on this. The show is noted for its particularly gentle and pleasant characters and plots.

A show called *Christmas Storytime* aired on the CBeebies channel in 2007.

In the Irish republic, *The Roly Mo Show* was broadcast on **Network 2** (later changed to RTÉ2 in 2004) as part of a lineup of programmes for younger children called *The Den* and started airing on 20 January 2003.

☰ Contents ▾

Forming lines and paragraphs

Forming Lines

1. Initially all GCN boxes belong to a different line.
2. Iteratively, if $\mathbf{box_left}(b1, b2) = 1$, then merge **b1** and **b2** into the same line.
3. A GCN box **b** is identified as the first box of a line if there is no **b'** such that $\mathbf{box_left}(b', b) = 1$.

Forming Paragraphs

1. Initially all lines belong to a different paragraph.
2. Iteratively, if $\mathbf{box_above}(b1, b2) = 1$ or $\mathbf{box_below}(b1, b2) = 1$, then merge **b1**'s line and **b2**'s line into the same paragraph.

Experiments — PubLayNet

Mini-Monograph — National environmental public health tracking

surveys under the National Health Interview Survey and administrative data systems such as hospital discharge data are sources that have been used for tracking health conditions. These varied sources have created a patchwork of health effect measures and relations to those data disseminate the need for standardized data for some disease surveillance. EPHI limits itself to those health effect with scientific evidence of possible environmental etiology. Health units recommended as starting points for a national EPHI network by the Peer Commission focus on the following chronic conditions: health effects developmental disabilities such as cerebral palsy, autism and mental retardation; cancer and other chronic respiratory disease such as asthma and emphysema; cancer and neurological diseases including Parkinson disease, multiple sclerosis and Alzheimer disease. Additionally, the commission recommended tracking amounts of exposure and health outcomes requiring rapid public health responses such as heavy metal poisoning and pesticide poisoning (Environmental Health Tracking Point Order 2000).

A key distinction between EPHI and national surveillance is the emphasis on data integration across health, human exposure, and hazard information systems (Figure 1). The program to build a national EPHI network is the first national effort to provide the United States with standardized data from multiple health surveillance systems. The national system that includes linkage of these data as part of regular surveillance activities. The network builds up systems ongoing efforts within the public health and environmental system to improve health surveillance, hazard monitoring, and exposure capacity (CDC 2000a, EPA 2000). The system will be used to identify potential relationships between exposure and health conditions that otherwise the need for additional research to remain interested in to prevent disease, disability, and injury.

Network Vision and Strategy

The national EPHI network will be broad-based. However, expanding on the work of Home-Partners (1999), an ideal environment for public health surveillance system should include the following elements:

- Data systems that use compatible data methods and vocabularies.
- High quality, timely, accurate, and available data with high resolution geographic coordinates.
- A wide range of exposure information based on biomonitoring, personal monitoring, and exposure models.

- Accessible, high quality and timely data on some data and monitoring data for water, waste, and food and other environmental

- media as well as geographic and temporal characteristics
- Access to exposure data including time, location, occupational and sociodemographic factors
- Tools to link data geographically
- Tools for descriptive and small area analysis
- Tools for data dissemination
- Support for public health action

Collaborative activities continue to support the development of the national EPHI network as well as infrastructure and methods are being developed and evaluated. Since 2002, CDC has funded 21 state health departments, three local health departments and three schools of public health to conduct activities that will be statewide EPHI network for its work in the state of large municipalities (Figure 2). The network of national tracking network (Figure 2). The schools of public health are developing methods and conducting spatial analysis studies to advance the science of environmental public health that includes the network and providing support state and local partners. Eleven state partners and New York City are conducting projects to demonstrate an approach for linking existing health effect surveillance data with exposure or hazard data as part of ongoing surveillance activities. It is a desirable effort to build capacity and the usefulness of linked data in guiding public health policy and practice. Other state and local partners are conducting planning and capacity building activities in the mini-monograph to present initial models of linking health surveillance systems currently evaluating the network's activities.

Additionally, we are emphasizing improving communications and disseminating information about the national EPHI network to the general public, health professionals and advisory groups including the Association of State and Territorial Health Officials (ASTHO), the National Association of County and City Health Officials (NACCHO), the Environmental Council of States, the National Environmental Health Association, the Association of Public Health Laboratories, the Council of State and Territorial Epidemiologists, Physicians for Social Responsibility (PSR), and the Federation of American Health. For example, NACCHO is developing and circulating educational materials about EPHI to their constituent states. ASTHO is working to consider of information among CDC state partners, Council of Excellence and the unaffiliated states and PR to disseminating with NACCHO information on the knowledge base and technical skills of scientists with need to EPHI.

The national level involves CDC, EPA and other national government and local Administration (NOAA) are active partners in development of the network because it is an essential high priority and timely data on some data and monitoring data for water, waste, and food and other environmental

Building Bridges

Developing and maintaining partnerships are essential to building and maintaining

the national EPHI network. Before the initiation of the tracking program, federal, state and local public health, environmental, occupational organizations, and academic institutions provided economic information to CDC. The Agency for Toxic Substances and Hazardous Waste Registry (ATSDR) that were incorporated into program development (CDC/ATSDR 2002). Collaborative activities continue to support the development of the national EPHI network as well as infrastructure and methods are being developed and evaluated. Since 2002, CDC has funded 21 state health departments, three local health departments and three schools of public health to conduct activities that will be statewide EPHI network for its work in the state of large municipalities (Figure 2). The network of national tracking network (Figure 2). The schools of public health are developing methods and conducting spatial analysis studies to advance the science of environmental public health that includes the network and providing support state and local partners. Eleven state partners and New York City are conducting projects to demonstrate an approach for linking existing health effect surveillance data with exposure or hazard data as part of ongoing surveillance activities. It is a desirable effort to build capacity and the usefulness of linked data in guiding public health policy and practice. Other state and local partners are conducting planning and capacity building activities in the mini-monograph to present initial models of linking health surveillance systems currently evaluating the network's activities.

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Fundamental Flaws of Hormesis for Public Health Decisions

Kristina A. Thayer,¹ Ronald Melnick,² Kathy Burns,³ Devra Davis,⁴ and James Huff⁵

¹National Institute of Environmental Health Sciences, National Institute of Health, Department of Health and Human Services, Research Triangle Park, North Carolina, USA; ²Science Center for Environmental Health, Massachusetts, USA; ³Johns Hopkins School of Public Policy & Management, George Mason University, Fairfax, Pennsylvania, USA

Hormesis defined operationally as low-dose stimulation, high-dose inhibition is often used to describe the action that while high level exposures to toxic chemicals would be detrimental to human health, low-level exposures would be beneficial. Some proponents claim hormesis is an adaptive, genetically programmed and argue that the default assumption for risk assessments should be that toxic chemicals induce stimulatory (i.e., "beneficial") effects at low exposures. In many cases, hormesis data require curves are called hormetic responses even in the absence of any mechanistic characterization of the response. Use of the term "hormesis" with its associated description, derives from the broader and more important questions regarding the frequency and interpretation of environmental dose response curves. A better understanding of the biological basis and emergence of nonmonotonic dose response curves is warranted for evaluating human health risks. The suggestion that hormesis is genetically adaptive is an oversimplification of complex biological processes. Even if it were true that effects were sometimes considered beneficial, that would not influence regulatory decisions to allow increased environmental exposures to toxic and carcinogenic agents, given factors such as interindividual differences in susceptibility and multiplicity in exposures. In this commentary we evaluate the hormesis hypothesis and present additional conceptualizing of incorporating low-dose beneficial effects into public health decisions. *Key words:* hormesis, low response, hormetic, individual susceptibility, low-dose response, nonmonotonic dose response, nonlinear dose response, public health, regulatory, risk assessment. *Environ Health Perspect* 113:1771–1776 (2005). doi:10.1289/ehp.7611 available via <http://dx.doi.org/> [Online 15 June 2005]

The concept of hormesis has received considerable attention over the past several years (Kaiser 2003a, 2003b). A recent literature search in the PubMed database on the term "hormesis" yielded 415 abstracts, with 100 published between 2000 and 2004 compared to 114 published in 1999 and earlier (PubMed 2005). In several communication and review forums, defined as low-dose stimulation, high-dose inhibition, has been used to promote the notion that low-level exposures to known toxic agents could be beneficial to human health (Goldman and Balshine 2003; Roman 2004). For example, it has been proposed that

low-dose stimulatory response may be used to describe the effect that while low-level exposures to toxic chemicals would be detrimental to human health, low-level exposures would be beneficial (Goldman and Balshine 2003a, b, 2004).

Some proponents of this view claim hormesis is an adaptive, broadly generalizable phenomenon and argue that in the absence of contrary information, the default assumption for risk assessments should be that at low exposure, toxic chemicals induce stimulatory and beneficial effects (Goldman and Balshine 2003a). We argue that many examples used to support the widespread frequency of hormesis are better described by the more general term "nonmonotonic" dose response. Nonmonotonicity is used to describe dose response relationships in which the direction of response changes with increasing or decreasing dose. Use of the term "hormesis" with its associated description of

low-dose beneficial effects often represent standards against other adverse effects that are induced by different mechanisms and the same or higher dose levels.

Health outcomes based on biological effects are additive, interindividual differences in response and susceptibility, modifying genetic, life-stage, and health status factors. Toxic potential and exposure levels vary among people over the course of a lifetime. In many cases timing of exposure can be more important than dose in determining health outcomes. Evolutionary physiological differences stemming from genetic heterogeneity and differences in health status will also influence susceptibility.

Health decisions based on biological effects must address the fact that other environmental and workplace exposures may alter the low-dose response of high-dose exposures for the real world (EPA 2000). Some single substances that do not interact with each other or different steps of metabolic disease processes. The mix of chemicals that individuals are exposed to varies depending on the nature of their work, where some environmental, drinking water, supply, food sources, school environments, and where they reside; in addition to identify choices such as those include hygiene practices and other factors such as the use of prescription and over-the-counter drugs. Many of these compounds can alter the same response but induce studies in different mechanisms of action.

The Concept of Hormesis as an Adaptive Response Does Not Adequately Consider Underlying Mechanisms of Action

An already-stated, hormesis is generally described as low-dose stimulation and high-dose inhibition, producing a nonmonotonic dose response. This may be considered to be an action in which low-dose exposures to an agent stimulate growth and high-dose exposure

Address correspondence to Dr. Thayer at 12055 Research Triangle Park, NC 27709. Telephone: 919/966-1214. Fax: 919/966-3411. E-mail: kristina.thayer@nc.nih.gov

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The authors thank the reviewers for their comments. Received 18 November 2004; accepted 14 June 2005.


Experiments — Successful Real-World Examples

Coast

From a Leader to a Business Committee

Many years ago, each Chumash village had a leader called a wot. The wot could be a man or a woman. The wot would make important decisions for the group.

Today, many Chumash live on the Santa Ynez Reservation. They have their own constitution. These Chumash elect, or choose, five people to a business committee. This committee decides important matters for the Chumash. All Chumash adults have a voice in decisions that the committee makes.



Thank you for restoring access on 01/30/2019. As you know, our secure website allows accounts and conduct most types of transactions online.

If you have any questions, please call us at one of these numbers:

- If you invest in Vanguard funds or brokerage securities through a personal account, call 1-800-523-3400 Monday through Friday from 8 a.m. to 10 p.m., Eastern time.
- If you invest in Vanguard funds or brokerage securities through an employer-sponsored plan, call Vanguard Participant Services at 800-523-1188 Monday through Friday from 8:30 a.m. to 5 p.m., Eastern time.
- If you have an annuity through Vanguard, call Vanguard Annuity and Insurance at 1-800-523-3400 Monday through Friday from 8 a.m. to 8 p.m., Eastern time.


Sincerely,
Retail Investor Group

Show-Me Sentences Handout

In the table below, there are two columns—one containing a telling sentence and one containing a space for rewriting that sentence into a descriptive scene. Rewrite each telling sentence into one or several sentences that recreate the scene more vividly. Think of word choice and use senses (e.g., smell, touch, sight, taste, sound) to show the scene—feel free to invent details within your revised sentences.

Telling Sentence	Showing Sentence
The old man stood in the grass and relaxed as the sun went down.	The grass caressed his feet and a smile softened his eyes. A hot puff of air brushed against his wrinkled cheek as the sky paled yellow, then crimson, and within a breath, electric indigo.
The boy pulled a large fish out of the river.	The young boy who was joyful, strained when he pulled a shining green, humongous fish out of the green river that had many scarier fish swimming in it with some seaweed.

Use your camera to find Pokémon in the real world!



Try it out. You can turn it off with the AR button anytime.

YES, CAMERA ON!

MAVE LATER

Experiments — Failed Real-World Examples

Our Chase SavingsSM account is loaded with conveniences, including

- Account Alerts
- PLUS** Automatic monthly transfers from checking to savings
- PLUS** Online access to your accounts virtually 24/7
- Use your savings account to help provide overdraft protection on your linked checking account for added peace of mind

Expires: 2/25/2019. Account subject to approval.

IMPORTANT INFORMATION

***Service Fee:** Chase SavingsSM has no Monthly Service Fee when you do at least one of the following: account; OR, **Option #2:** Have at least one repeating automatic transfer of \$25 or more from your owner who is an individual younger than 18; OR, **Option #4:** Have a linked Chase Premier Plus Card. A \$5 Savings Withdrawal Limit Fee will apply for each withdrawal or transfer out of see a banker or visit chase.com/savings.

Bonus/Account Information: Savings offer is not available to existing Chase savings customers, 1 balance. To receive the bonus: **1)** Open a new Chase SavingsSM account, which is subject to approval at least a \$15,000 balance for 90 days from the date of deposit. The new money cannot be funds he account within 10 business days. For a Chase SavingsSM account, the Annual Percentage Yield (APY) all states. Interest rates are variable and subject to change. Additionally, fees may reduce earnings last enrollment date and only one bonus per account. The bonus is considered interest and will be

****Account Closing:** If the savings account is closed by the customer or Chase within six months at

NAME: ★★★★★★★★★★ Presidential Fact Sheet ★★★★★★★★★★

PRENOMINAL	NAME	DOB	TERMINED	DEPT	PRENOMINAL	NAME	DOB	TERMINED	DEPT
George Washington	1797-01-19	1799-07-04	1800-07-14	1799	John Adams	1735-01-11	1791-07-04	1791-07-04	1791
John Adams	1735-01-11	1791-07-04	1791-07-04	1791	Thomas Jefferson	1743-01-18	1826-07-04	1826-07-04	1826
Thomas Jefferson	1743-01-18	1826-07-04	1826-07-04	1826	James Madison	1751-03-16	1836-07-04	1836-07-04	1836
James Madison	1751-03-16	1836-07-04	1836-07-04	1836	James Monroe	1758-09-18	1831-07-04	1831-07-04	1831
James Monroe	1758-09-18	1831-07-04	1831-07-04	1831	John Quincy Adams	1767-08-11	1848-07-04	1848-07-04	1848
John Quincy Adams	1767-08-11	1848-07-04	1848-07-04	1848	Andrew Jackson	1767-03-15	1845-07-04	1845-07-04	1845
Andrew Jackson	1767-03-15	1845-07-04	1845-07-04	1845	Martin Van Buren	1781-12-05	1862-07-04	1862-07-04	1862
Martin Van Buren	1781-12-05	1862-07-04	1862-07-04	1862	William Henry Harrison	1797-02-09	1841-04-04	1841-04-04	1841
William Henry Harrison	1797-02-09	1841-04-04	1841-04-04	1841	John Tyler	1790-03-29	1862-07-04	1862-07-04	1862
John Tyler	1790-03-29	1862-07-04	1862-07-04	1862	James K. Polk	1795-02-02	1843-06-15	1843-06-15	1843
James K. Polk	1795-02-02	1843-06-15	1843-06-15	1843	Zachary Taylor	1784-11-24	1850-07-09	1850-07-09	1850
Zachary Taylor	1784-11-24	1850-07-09	1850-07-09	1850	Millard Fillmore	1800-01-07	1850-07-04	1850-07-04	1850
Millard Fillmore	1800-01-07	1850-07-04	1850-07-04	1850	Franklin Pierce	1803-03-03	1853-07-04	1853-07-04	1853
Franklin Pierce	1803-03-03	1853-07-04	1853-07-04	1853	James Buchanan	1791-03-04	1868-07-04	1868-07-04	1868
James Buchanan	1791-03-04	1868-07-04	1868-07-04	1868	Abraham Lincoln	1809-01-12	1865-07-04	1865-07-04	1865
Abraham Lincoln	1809-01-12	1865-07-04	1865-07-04	1865	Andrew Johnson	1808-12-24	1875-07-04	1875-07-04	1875
Andrew Johnson	1808-12-24	1875-07-04	1875-07-04	1875	Ulysses S. Grant	1822-01-27	1875-07-04	1875-07-04	1875
Ulysses S. Grant	1822-01-27	1875-07-04	1875-07-04	1875	Rutherford B. Hayes	1827-10-04	1877-07-04	1877-07-04	1877
Rutherford B. Hayes	1827-10-04	1877-07-04	1877-07-04	1877	James A. Garfield	1831-07-19	1881-09-19	1881-09-19	1881
James A. Garfield	1831-07-19	1881-09-19	1881-09-19	1881	Benjamin Harrison	1833-08-13	1893-03-04	1893-03-04	1893
Benjamin Harrison	1833-08-13	1893-03-04	1893-03-04	1893	Grover Cleveland	1837-03-02	1895-07-04	1895-07-04	1895
Grover Cleveland	1837-03-02	1895-07-04	1895-07-04	1895	William McKinley	1827-01-29	1898-09-14	1898-09-14	1898
William McKinley	1827-01-29	1898-09-14	1898-09-14	1898	Theodore Roosevelt	1858-01-27	1901-09-06	1901-09-06	1901
Theodore Roosevelt	1858-01-27	1901-09-06	1901-09-06	1901	William H. Taft	1857-03-18	1909-03-09	1909-03-09	1909
William H. Taft	1857-03-18	1909-03-09	1909-03-09	1909	Woodrow Wilson	1856-12-28	1913-03-03	1913-03-03	1913
Woodrow Wilson	1856-12-28	1913-03-03	1913-03-03	1913	Warren G. Harding	1874-08-02	1921-08-02	1921-08-02	1921
Warren G. Harding	1874-08-02	1921-08-02	1921-08-02	1921	Cabot Corbridge	1874-08-02	1921-08-02	1921-08-02	1921
Cabot Corbridge	1874-08-02	1921-08-02	1921-08-02	1921	Markus Hansen	1874-08-02	1921-08-02	1921-08-02	1921
Markus Hansen	1874-08-02	1921-08-02	1921-08-02	1921	Herbert Hoover	1874-08-02	1921-08-02	1921-08-02	1921
Herbert Hoover	1874-08-02	1921-08-02	1921-08-02	1921	Franklin D. Roosevelt	1882-01-30	1945-04-12	1945-04-12	1945
Franklin D. Roosevelt	1882-01-30	1945-04-12	1945-04-12	1945	Eisenhower	1894-01-10	1961-09-08	1961-09-08	1961
Eisenhower	1894-01-10	1961-09-08	1961-09-08	1961	John F. Kennedy	1917-05-29	1963-11-22	1963-11-22	1963
John F. Kennedy	1917-05-29	1963-11-22	1963-11-22	1963	Lyndon B. Johnson	1908-08-27	1973-01-22	1973-01-22	1973
Lyndon B. Johnson	1908-08-27	1973-01-22	1973-01-22	1973	Richard M. Nixon	1913-01-09	1974-08-09	1974-08-09	1974
Richard M. Nixon	1913-01-09	1974-08-09	1974-08-09	1974	Ronald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974
Ronald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974	James Carter	1924-10-02	1977-01-17	1977-01-17	1977
James Carter	1924-10-02	1977-01-17	1977-01-17	1977	Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977
Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977	Richard M. Nixon	1913-01-09	1974-08-09	1974-08-09	1974
Richard M. Nixon	1913-01-09	1974-08-09	1974-08-09	1974	Gerald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974
Gerald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974	Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977
Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977	Ronald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974
Ronald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974	Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977
Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977	Richard M. Nixon	1913-01-09	1974-08-09	1974-08-09	1974
Richard M. Nixon	1913-01-09	1974-08-09	1974-08-09	1974	Gerald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974
Gerald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974	Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977
Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977	Ronald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974
Ronald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974	Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977
Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977	Richard M. Nixon	1913-01-09	1974-08-09	1974-08-09	1974
Richard M. Nixon	1913-01-09	1974-08-09	1974-08-09	1974	Gerald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974
Gerald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974	Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977
Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977	Ronald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974
Ronald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974	Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977
Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977	Richard M. Nixon	1913-01-09	1974-08-09	1974-08-09	1974
Richard M. Nixon	1913-01-09	1974-08-09	1974-08-09	1974	Gerald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974
Gerald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974	Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977
Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977	Ronald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974
Ronald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974	Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977
Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977	Richard M. Nixon	1913-01-09	1974-08-09	1974-08-09	1974
Richard M. Nixon	1913-01-09	1974-08-09	1974-08-09	1974	Gerald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974
Gerald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974	Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977
Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977	Ronald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974
Ronald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974	Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977
Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977	Richard M. Nixon	1913-01-09	1974-08-09	1974-08-09	1974
Richard M. Nixon	1913-01-09	1974-08-09	1974-08-09	1974	Gerald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974
Gerald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974	Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977
Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977	Ronald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974
Ronald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974	Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977
Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977	Richard M. Nixon	1913-01-09	1974-08-09	1974-08-09	1974
Richard M. Nixon	1913-01-09	1974-08-09	1974-08-09	1974	Gerald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974
Gerald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974	Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977
Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977	Ronald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974
Ronald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974	Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977
Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977	Richard M. Nixon	1913-01-09	1974-08-09	1974-08-09	1974
Richard M. Nixon	1913-01-09	1974-08-09	1974-08-09	1974	Gerald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974
Gerald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974	Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977
Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977	Ronald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974
Ronald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974	Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977
Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977	Richard M. Nixon	1913-01-09	1974-08-09	1974-08-09	1974
Richard M. Nixon	1913-01-09	1974-08-09	1974-08-09	1974	Gerald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974
Gerald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974	Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977
Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977	Ronald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974
Ronald R. Ford	1913-12-15	1974-08-09	1974-08-09	1974	Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977
Jimmy Carter	1924-10-02	1977-01-17	1977-01-17	1977	Richard M. Nixon	1913-0			

Thank You

