



pyTLEX 1.0: Python Timeline Extraction
&
jTLEX 3.0: Visualization for the TLEX Algorithm

Meet Our Team

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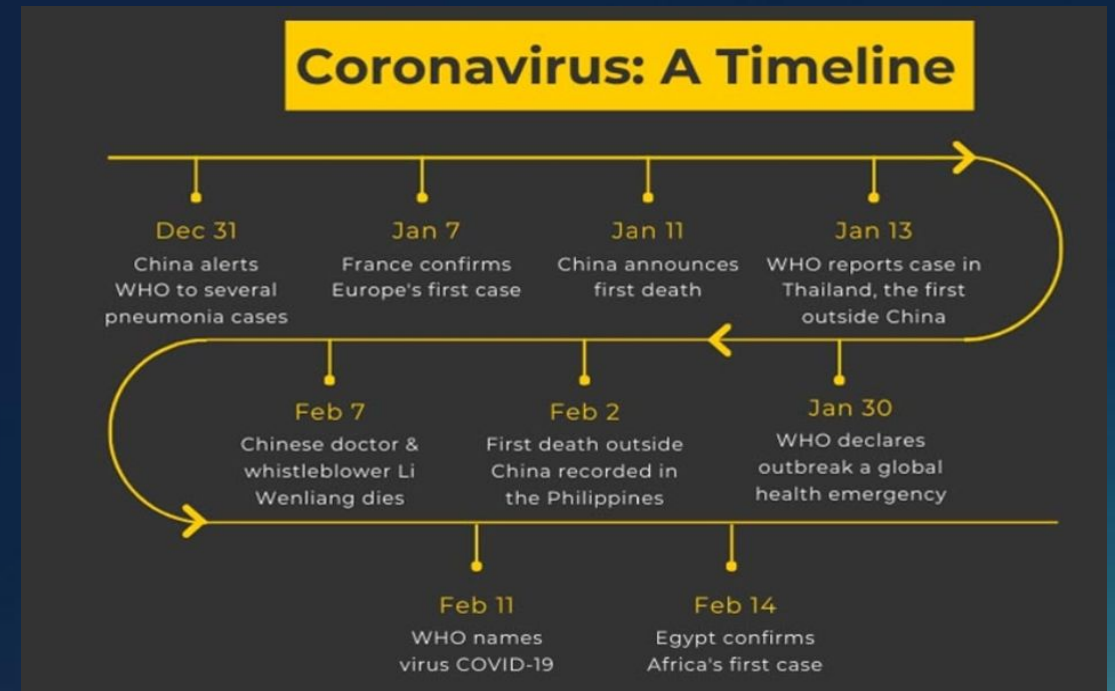
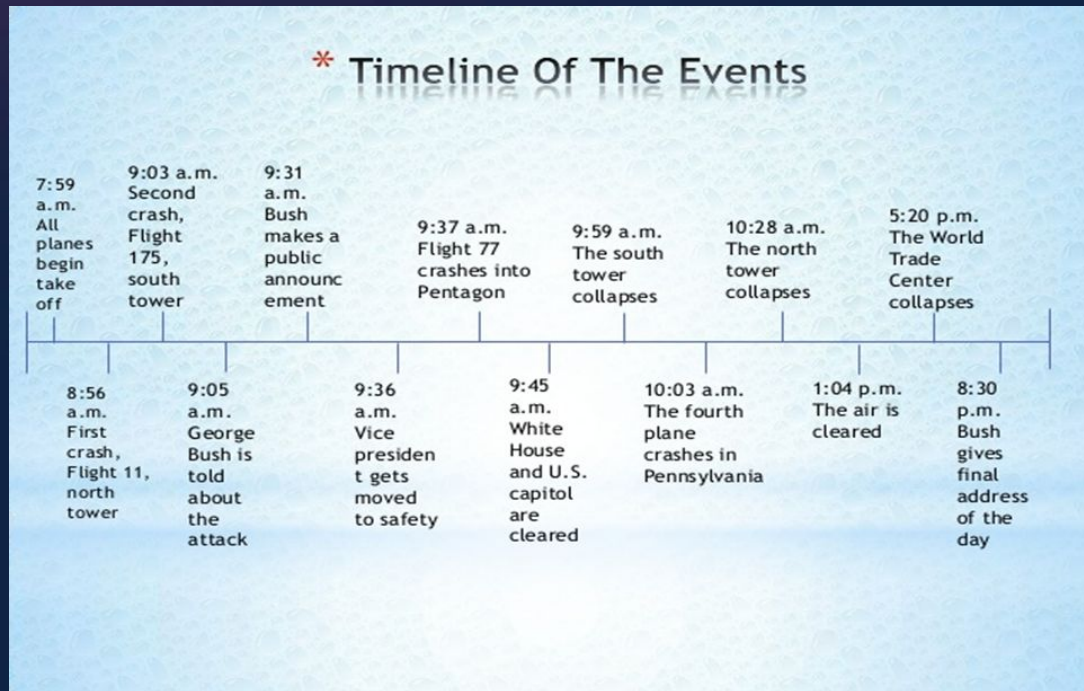
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Applications of Timelines

- Aiding Researchers in the Field of Temporal Processing
- Improving Q&A systems
- Visualization and Summarization



Previous Work

- TLEX
 - An algorithm for TimeLine EXtraction
 - Written by Mustafa Ocal and Dr. Mark Finlayson
- jTLEX
 - Previous semester's capstone project
 - Java implementation of TLEX
- TLEX: Timeline Visualization
 - Web-based visualization tool based on jTLEX
 - React.js Frontend / Spring Boot Backend

TimeML
Annotated File

Build TimeML
Graph via
Parsing

Detect
Indeterminacies

Partition
Subordination
Subgraphs

Detect
Inconsistencies

Transform into
TCSP

Solve TCSP and
Extract Timelines

Problem Definition

- Python Library: pyTLEX 1.0
 - Extend the reach of the TLEX algorithm
 - Popularity of Python for NLP research
 - Based off of jTLEX
- Improvements on Current Visualization Tool
 - Unaesthetic, unappealing layout
 - Unintuitive timeline visualization
 - Bugs

New Features and Hurdles

- pyTLEX 1.0

- New Features

- Parser uses Regex
 - Connectivity increaser functionality now in the partitioner
 - A file path is a valid input to create a TimeML Graph

- Hurdles

- Constraint satisfaction solver features
 - Indeterminacy Detection Algorithm

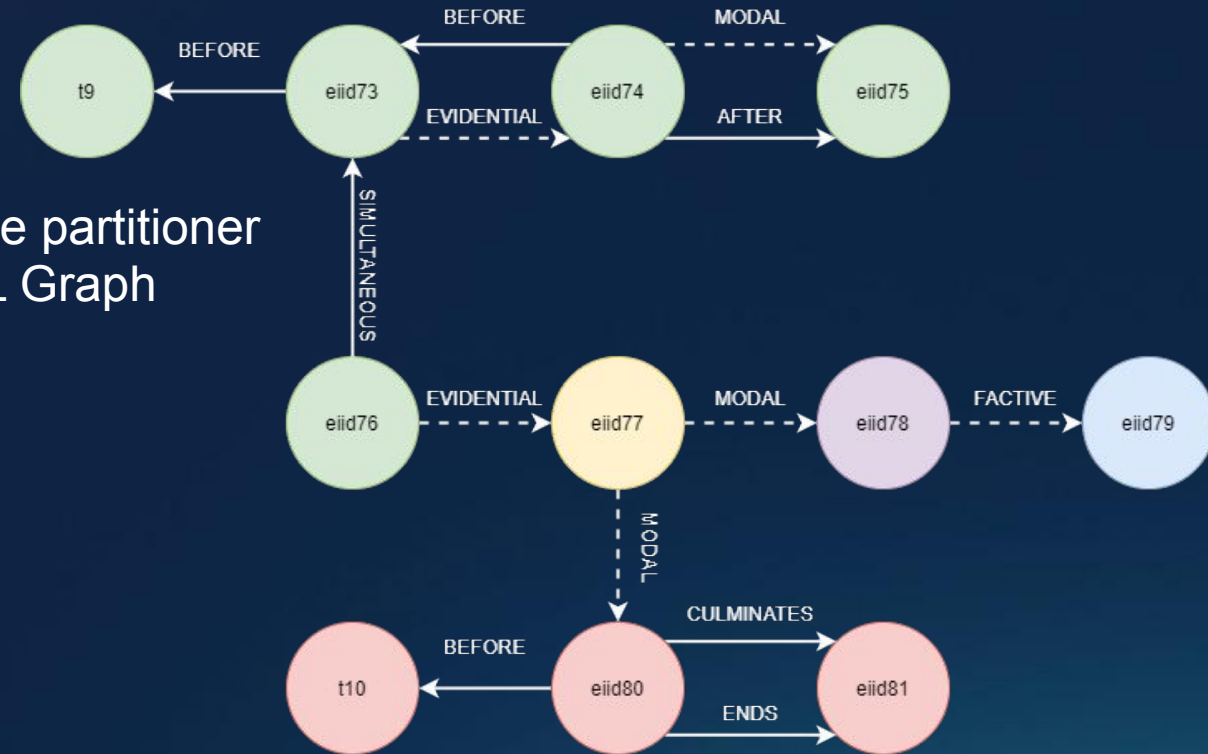
- TLEX: Timeline Visualization

- Improvements

- Optimization of node placement function
 - Overhaul of timeline visualization Section
 - Minor improvements

- Hurdles

- Presence of bugs
 - General lack of familiarity with tools/technologies



Contributions

- Implemented the first ever Python library for timeline extraction.
- Significantly improved the aesthetics and usability of the timeline visualization tool.