

# WilliViz - A Data Visualization Framework For iOS

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## Objectives

- Objective header here.
- Develop a framework for data visualization on iOS devices
  - Identify data visualization techniques/principles that are specifically suited for mobile devices.
  - Framework should be generic enough to allow developers to easily integrate with their apps
  - Develop a portfolio of data visualizations
  - Develop a tutorial / documentation to allow developers to learn how to use WilliViz

## Introduction

We live in a time of Big Data. We have access to more data than ever before. We also have mobile devices that we carry with us at all times. Visualizing this data is an important step in analyzing and making use of this abundant information. Mobile devices present a unique and different platform for data visualization. The nature of the device and the manner in which we use them influences how we can use mobile devices as a platform for data visualization. WilliViz attempts to leverage some of these mobile-platform specific characteristics and provide a toolkit to allow other software developers to create beautiful, rich, interactive data visualizations for iOS devices.

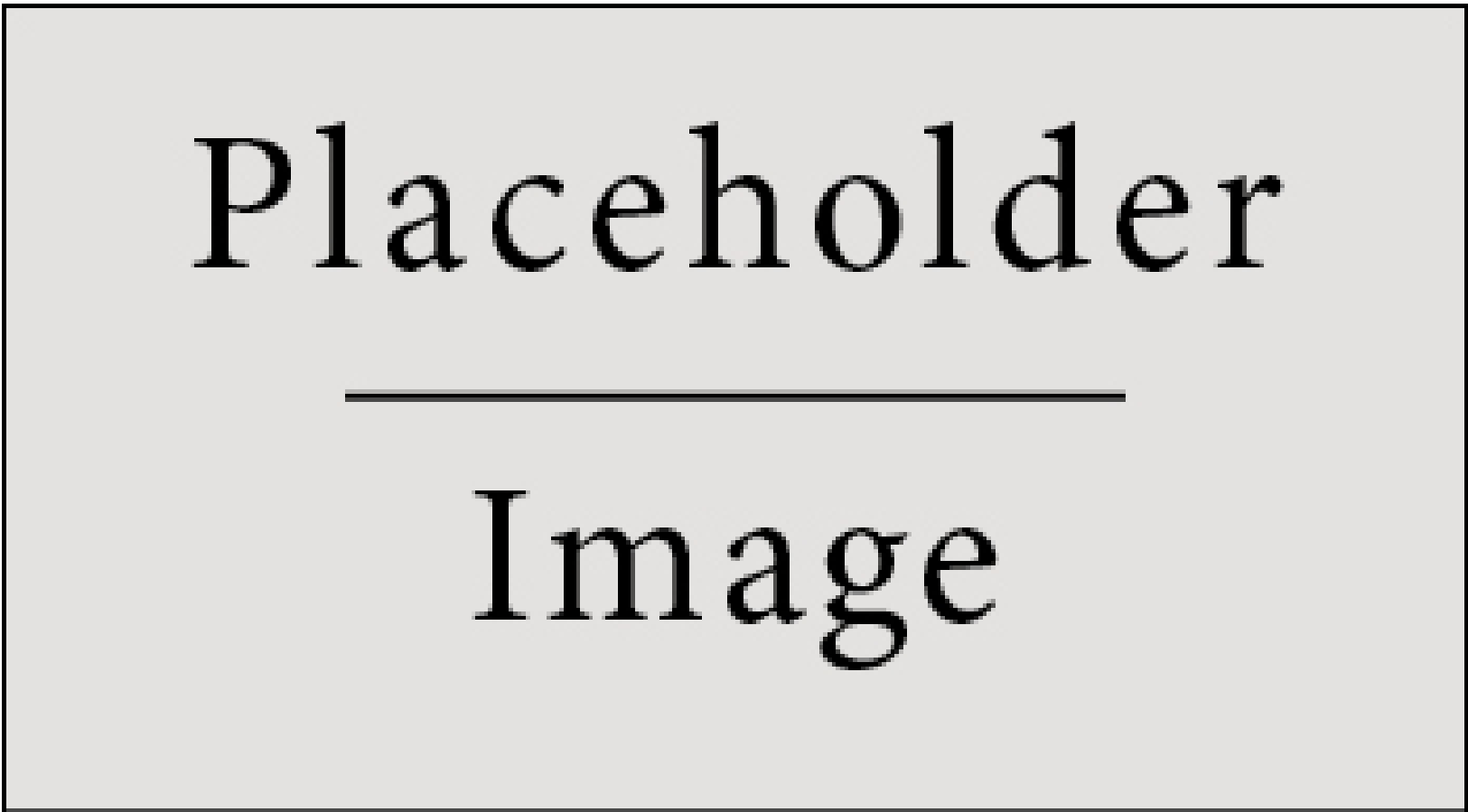


Figure 1: Figure caption

## Data Visualization Paradigms For Mobile

The following help describe the paradigm of data visualization for mobile devices:

- ➊ Identify data visualizations to be implemented
- ➋ Delegate / Protocol software design pattern used to allow easy integration for developers
- ➌ Duis porta consequat lorem
- ➍ Curabitur pellentesque dignissim

## Code Example

```
-(void)drawWilliViz:<WilliVizDataSourceDelegate>id delete;
[setDataSourceDelegate: self];
```

## Code Section / How to use

FLOWCHART HERE

## Implementation

- ➊ Objective-C Programming Language
- ➋ CoreGraphics drawing library
- ➌ Delegate / protocol design pattern
- ➍ Scaling coordiante system based on data
- ➎ Built on top of Apple's UIView class
- ➏ Plots are drawn independently, multiple plots on screen at one time

## Examples

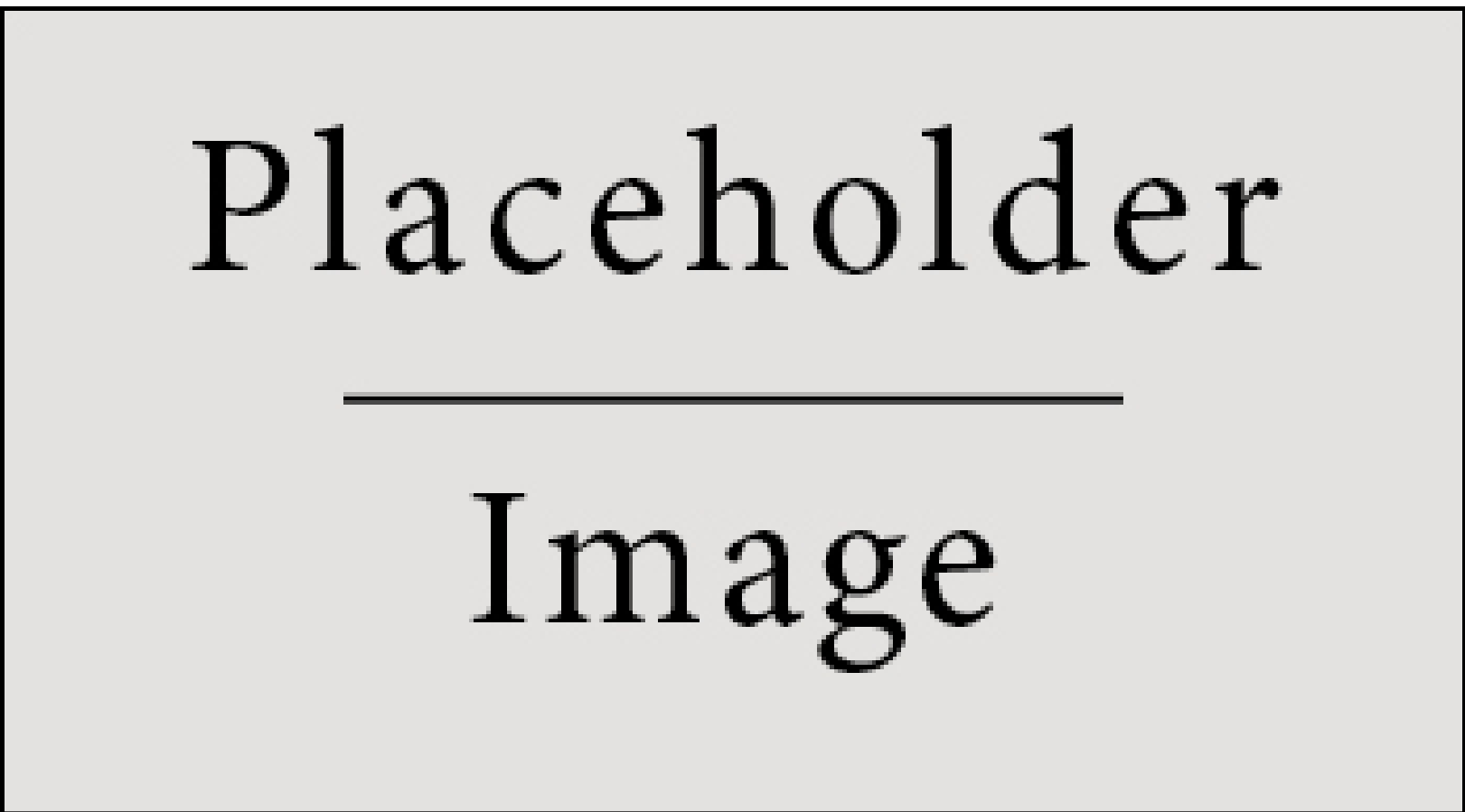


Figure 2: Figure caption

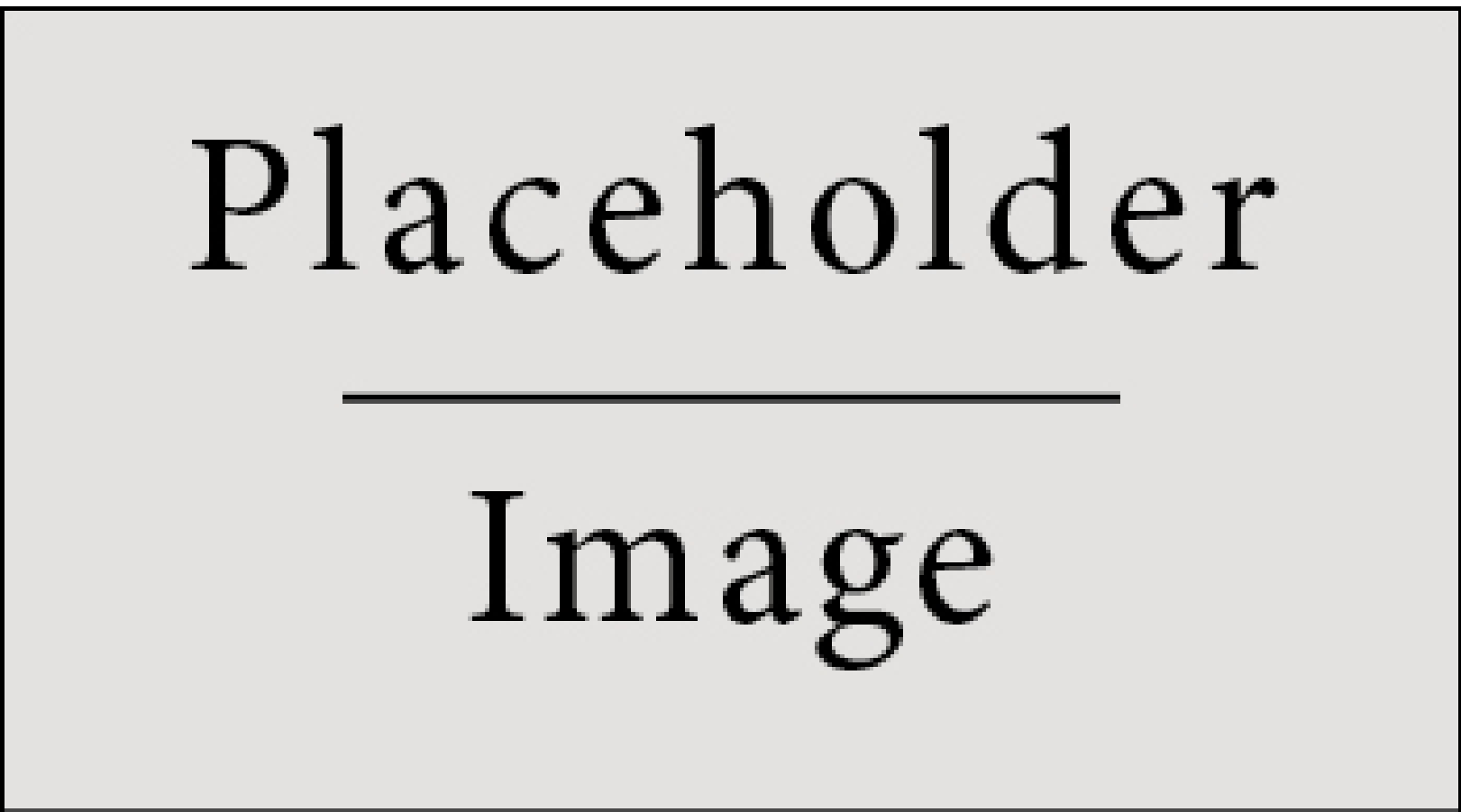


Figure 3: Figure caption

## Conclusion

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## Future Work

Future things to do with WilliViz

- Developer documentation
- Distribution - open source?
- App showcase / portfolio
- Data collection
- User interactiveness

## References

- Stanford CS193p course
- Apple CoreGraphics developer documentation
- WWDC video
- Carnegie Mellon data visualization for iPad course

## Acknowledgements

This research is the product of a Special Topics course facilitated by Professor Jesse Johnson. The purpose of which was to identify a Massive Open Online Course (MOOC) for study. Special thanks to Professor Jesse Johnson for facilitating this course and encouraging me to work on this project.

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