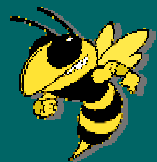# FundExplorer – Supporting the Diversification of Mutual Fund Portfolios using Context Treemaps

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Disclaimer

- Yes, although this is about treemaps, this is not from the University of Maryland

Overview

- Terminology: Mutual Funds and Diversification

- Diversification of Mutual Fund Portfolios

- Context Treemaps

- Demo

- Conclusion/Future Work

Mutual Funds and Diversification: Terminology

- Investing money can be risky, diversification can reduce risk

- Mutual funds: A security that gives small investors access to a professionally managed portfolio of equities, bonds, and other securities.

- High-level view: Mutual fund=collection of different stocks

- The set of stocks a mutual funds invests in remains relatively stable

Diversification of Mutual Funds Portfolios

- If multiple funds are owned: Where does the money really go? Diversification may be an illusion

- What fund to pick to get to the desired portfolio structure?

- Key to diversification: Manage the relation between stocks owned and stocks not owned

- Show the user her portfolio (stocks she bought) and its context (stocks she might want to buy)
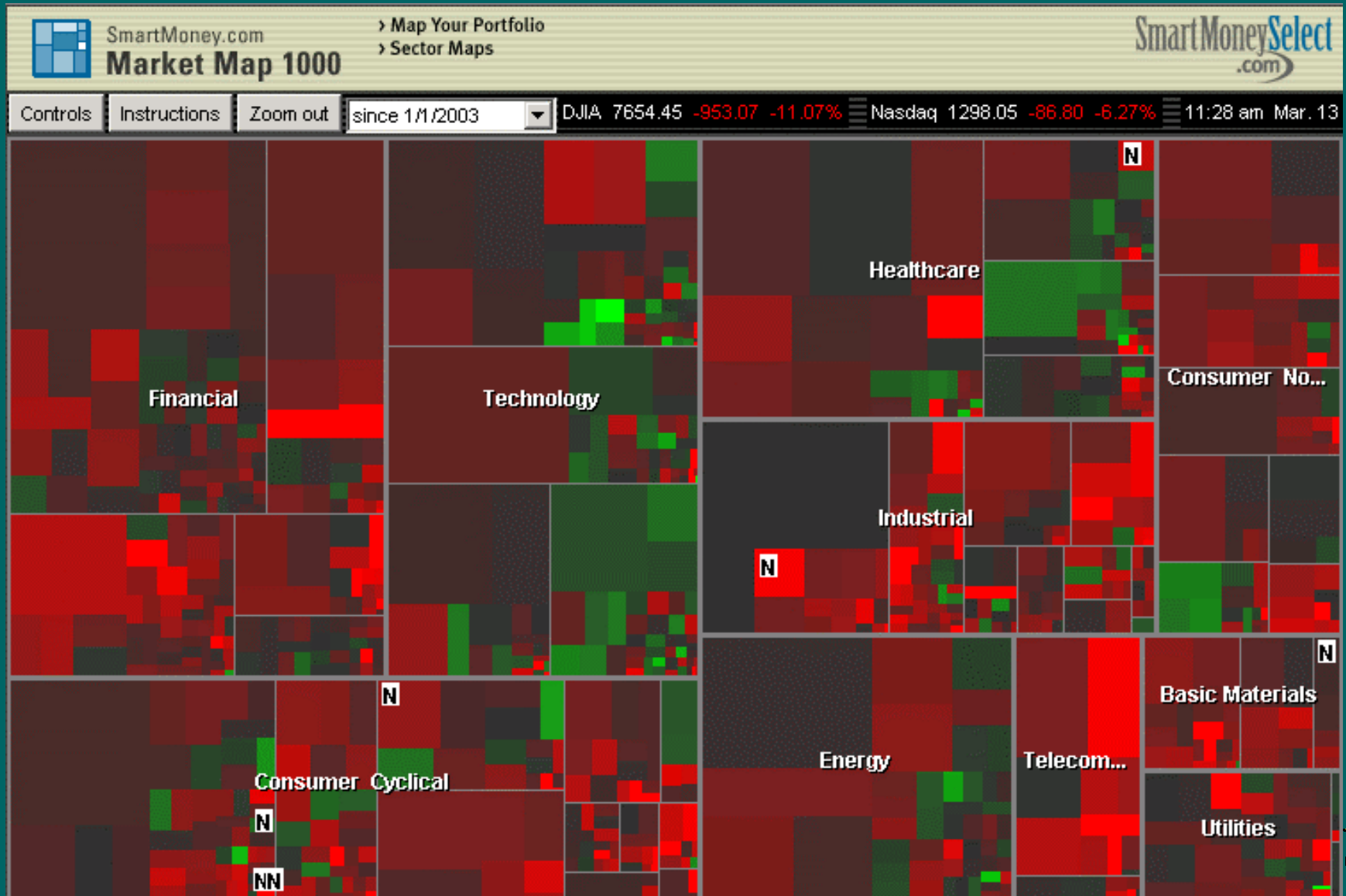
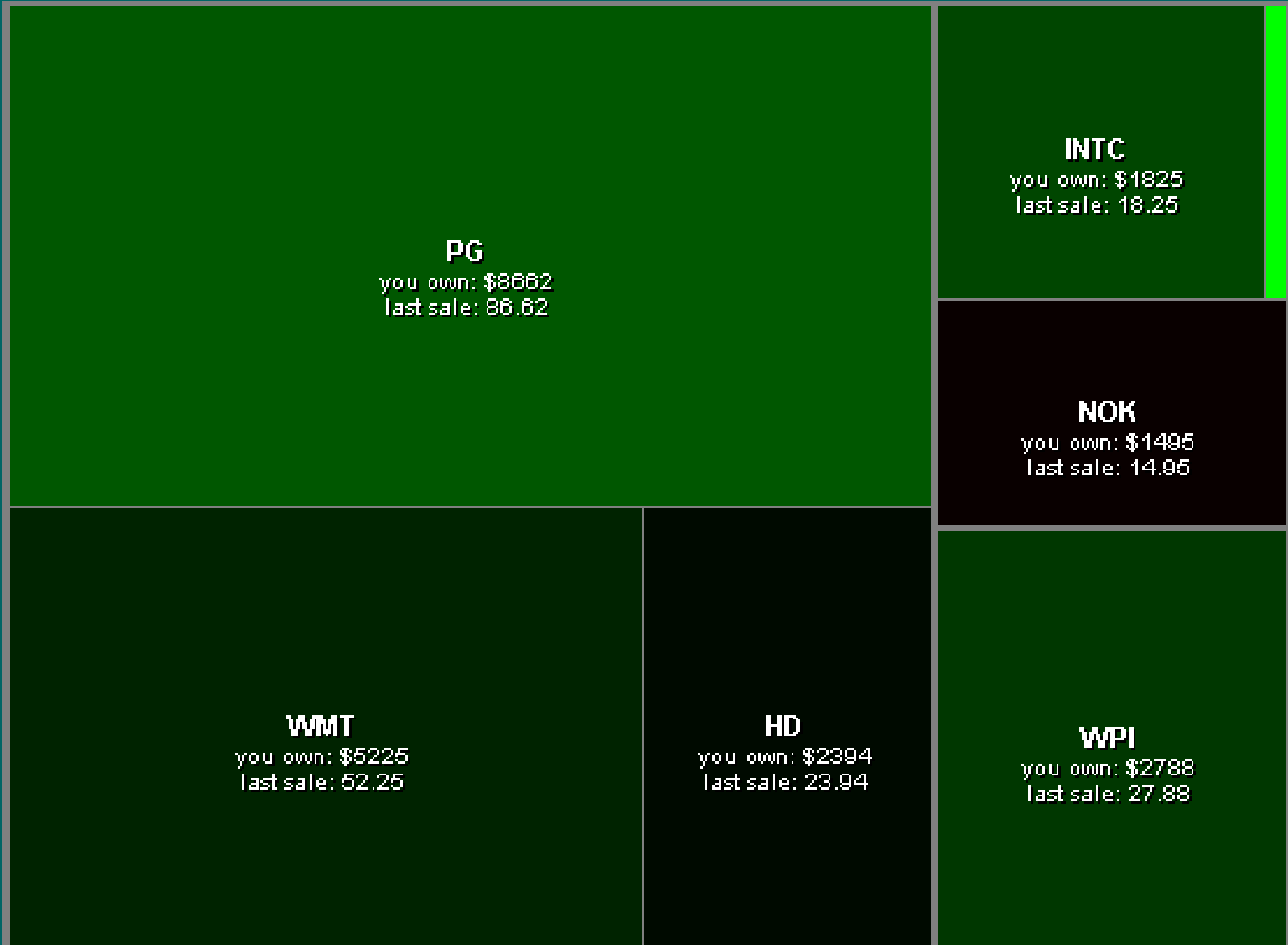# Treemaps for Portfolio Visualization

- Jungmeister and Turo

- Smartmoney's Market Map

Related Work: Smartmoney's Market Map

Smartmoney's Portfolio Map

PG
you own: $8662
last sale: 86.62

INTC
you own: $1825
last sale: 18.25

NOK
you own: $1495
last sale: 14.95

WMT
you own: $5225
last sale: 52.25

HD
you own: $2394
last sale: 23.94

WPI
you own: $2788
last sale: 27.88

The 0-Value Problem

- Drawback of treemaps: They only show stocks that are owned ($ invested>0)

- Existing approaches
  - Constant Minimum Value
  - Constant Minimum Area
  - Exponential Mapping

The Context Treemap

- Context Treemaps: Distorted treemaps which show all data elements, also 0-nodes (here: stocks with $ invested=0)

- Conceptually: Reserves portion of screen real estate, distributes that space amongst 0-nodes (33% works well for funds)

- 0-nodes have the same size, size of non-zero nodes depends on their value

- 0-nodes show the context and can be used as query elements

- Can be used together with existing treemap layout algorithms

FundExplorer

- Tool that supports the diversification of mutual fund portfolios

- Implements the Context Treemap algorithm

- Shows stock portfolio and context

- Uses context as query device

Demo

Conclusion and Future Work

- The FundExplorer project
  - Introduced a treemap extension that also shows the context of tree nodes
  - Developed a system that combines the Context Treemap technique with dynamic querying to support mutual funds portfolio diversification

- Can be useful for other domains in which 0-value nodes are relevant and should be visualized

- Future Work: Increase richness of context representation

Questions