Artistically Conveying Peripheral Information with the InfoCanvas

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Information Interfaces

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Information Overload

- Large amounts of data available
  - Public information
    - News
    - Weather
    - Traffic
    - Sports scores
  - Personal information
    - Financial information
    - E-mails
    - Family photos

Peripheral Awareness Information

- Desire to maintain a level of awareness
- Will vary from person to person
- Difficult to maintain awareness
  - Have to remember
  - Requires explicit action

Yahoo! Finance - ^IXIC - Netscape

File Edit View Go Communicator Help

Bookmarks Location: http://quote.yahoo.com/q?s=^IXIC&d=1d

NAS/NMS COMPSITE (NasdaqSC:^IXIC)- More Info: News - Ti

Last Trade	Change		Prev Cls	Volume
	0.00 (0.00%)		1928.68	N/A
Day's Range	Bid	Ask	Open	Avg Vol
0.00 - 0.00	N/A	N/A	0.00	N/A
52-week Range	Earn/Shr	P/E	Mkt Cap	Div/Shr
1794.21 - 5022.23	N/A	N/A	N/A	N/A

Splits: none

1d | 5d | 3m | 1y | 2y | 5y | max Other: historical qu

Basic | Moving Avg | Compare ^IXIC vs. S&P Nasdaq D

Add to My Portfolio - Set Alert Non-Tables Version - Dow

Document: Done

weeradej_sup@hotmail.com	Saturday	
Linda Williams	Saturday	
Linda Williams	Saturday	
drigden	Saturday	
Khai Nhut Truong	Sunday	6 couple o
Kori Inkpen	Saturday	3 Short Ta
Elaine May Huang	11:08 AM	1 thanks!
Heather Richter	11:31 AM	3 Re: Part
Michael Andrew Terry	12:27 PM	2 Re: Stuc
Linda Williams	05:50 PM	3 Frank D

1324/4086K/0K

Stephen Geer, Thu... In

Task	Persona	Status	Progress
Checking	<Domin...	Logging into POP Server	

For Help, press F1

Netscape

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Bookmarks Location: AMS=on&SPDS=on&REGION=OVERVIEW What's Related

Yahoo! ...

Login Message

Friends Y! Help

Message Chat Call

Friends for - Kiawah2

Friends

doctorverne

frauen1

gt8167c (Idle)

weather.com - Local Weather - Atlanta, GA (30309) - Netscape

File Edit View Go Communicator Help

Bookmarks Location: http://www.weather.com/weather/local/30309 What's Related

34 °F

Fair

Feels Like 19 °F

Wind: From the North at 12 mph gusting to 20 mph

Dew Point: 13 °F

Humidity: 42 %

Visibility: Unlimited

Barometer: 30.17 inches and rising

UV Index 0 Minimal

Temperature Converter - Enter a number and click outside the box

F: C: reset

Averages and Records | Detailed Local Forecast | Hour by Hour Details | Regional Audio Forecast

10 Day Forecast

Atlanta, GA (30309)

Monday, March 26, at 7:34 AM Eastern Standard Time

		Hi (°F)	Lo (°F)
Today Mar 26	Partly Cloudy	54 °F	30 °F
	UV Index: 8 High		
Tue Mar 27	Sunny	55 °F	33 °F
	UV Index: 8 High		
Wed Mar 28	Partly Cloudy	59 °F	44 °F
	UV Index: 7 High		
Thu Mar 29	Rain	60 °F	51 °F
	UV Index: 4 Low		
Fri Mar 30	Showers	67 °F	50 °F
	UV Index: 5 Moderate		
Sat Mar 31	Mostly Cloudy	72 °F	52 °F
	UV Index: 7 High		
Sun	Mostly Cloudy	73 °F	55 °F

Explore Related Sites

Allergies? Click here to learn about relief for your nasal allergies

Allstate. Get Rewarded! In most states safe drivers can save up to 20%

NetCard As low as 2.99% Intro APR-Rewards Points-Apply Now!

ClassMates Your 24 hr/7 day a week High School Class Reunion on the Net

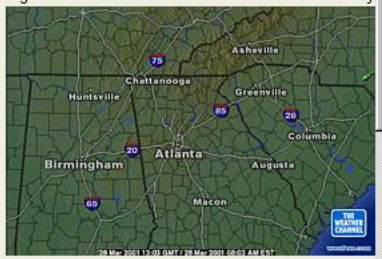
Go Shopping

Maps

Doppler Radar 600 Mile

Precipitation Intensity

Light Heavy



Show map in motion Click to enlar

How to read this map Go to maps inde

Doppler Radar 600 Mile

Document: Done

Informal Study

- 25 participants
- 80% check news or finance sites
- Most check at least once or twice a day
- Most had habitual browsing
- Great diversity in actual sites
- Many used “start pages” like MyYahoo!

Dealing with Overload

- Personalized Portals
  - \+ Quick to configure
  - \- Limited information & representation
  - \- Requires explicit interaction
- Windows Active Desktop
  - \+ Allows for any web page
  - \- Difficult to configure
  - \- Explicitly have to minimize all windows

Dealing with Overload

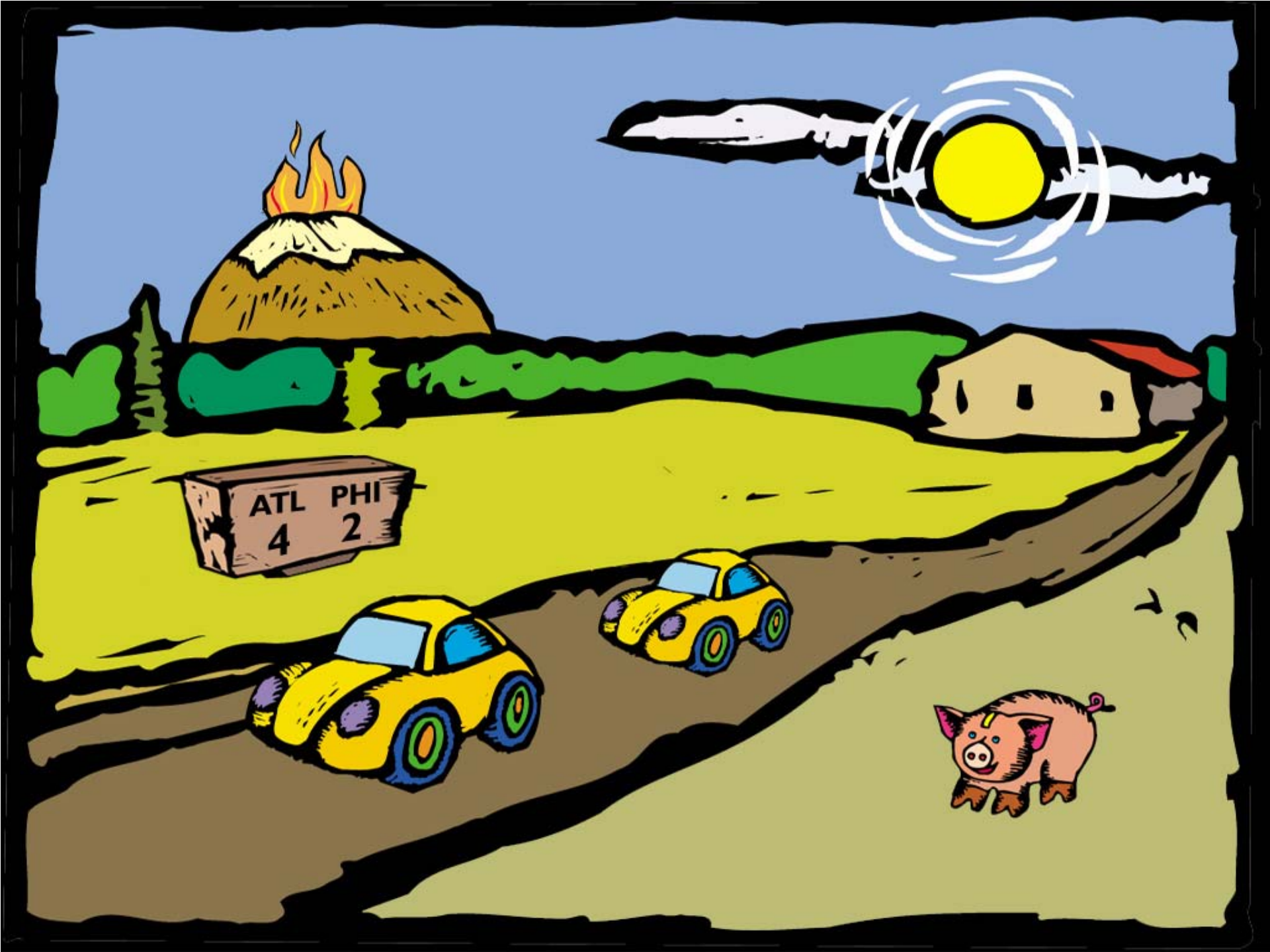
- Second Monitor
  - \+ Highly customizable
  - \- Still subject to information overload
- Ambient Displays
  - \+ Abstract and integrated into environment
  - \- Limited bandwidth

Design Principles

- Available – Minimal user interaction
- Consolidated – Integrated view of data
- Peripheral – Calm and undemanding
- Personalized – Highly customizable
- Secure – Obscure personal data

The InfoCanvas

- Information Artwork
- An ambient LCD display
  - Like picture on desk or hung on wall
- Presents an eye-pleasing picture
- Elements of picture represent data and subtly change
- Allow the user to define both the information and its representation


ATL PHI
4 2

A Quick Tour

- Early prototype of InfoCanvas
  - Restricts data and visualization
  - Written as Java Servlets
  - Completely accessible over the web

InfoCanvas - IE

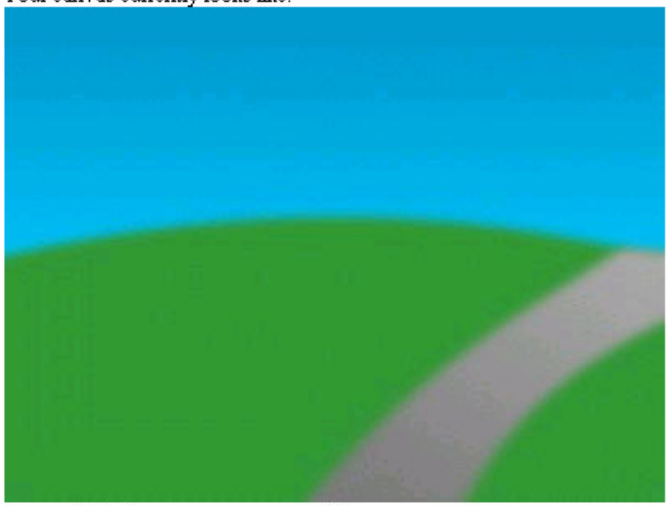
File Edit View Favorites Tools Help

Back

Address http://127.0.0.1:8080/webcanvas/servlet/Overview

InfoCanvas Manager

Your canvas currently looks like:



Here are links to view your canvas with:
640x480 800x600 1024x768 1280x1024

You can **add** any of this information to your InfoCanvas:

Stock - Stock quote from Yahoo! | Add to Canvas

You can **edit** or **remove** any of this information from your InfoCanvas:

Edit Delete

You can change the background of your InfoCanvas

Done Internet

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Address http://127.0.0.1:8080/webcanvas/servlet/AddSource

InfoCanvas Manager

Please provide the specifics on what you'd like to add to the canvas:

Enter the ticker symbol to show the current price of: MSFT

Please choose the way you'd like this to be represented on the canvas:

- (•) Change icon based upon the daily percent change of the stock
- ( ) Vary the size of an icon based upon the daily percent change
- ( ) Show an icon when the stock price rises above a certain threshold
- ( ) Show an icon when the stock price falls below a certain threshold

Add to Canvas

Done Internet

art 1

canvas

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art 2

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Address http://127.0.0.1:8080/webcanvas/servlet/AddSource2

InfoCanvas Manager

Information Details

You are adding "Stock price quote for MSFT" to your canvas. Here is the information you supplied about this data:

symbol: **MSFT**

Representation

Please choose from the images on the right that you want to associate with this representation:

show Change to

When the value of **percent** equals **0.0**, .

show Change to

When the value of **percent** is greater than **0.0** and lesser than **5.0**, .

show Change to

When the value of **percent** is greater than or equal to **5.0** and lesser than **10.0**, .

show Change to

When the value of **percent** is greater than or equal to **10.0**, .

show Change to

When the value of **percent** is greater than **-5.0** and lesser than **0.0**, .

show Change to

When the value of **percent** is greater than **-10.0** and lesser than or equal to **-5.0**, .

show Change to

When the value of **percent** is lesser than or equal to **-10.0**, .

Next >

Image Library

Done

Internet

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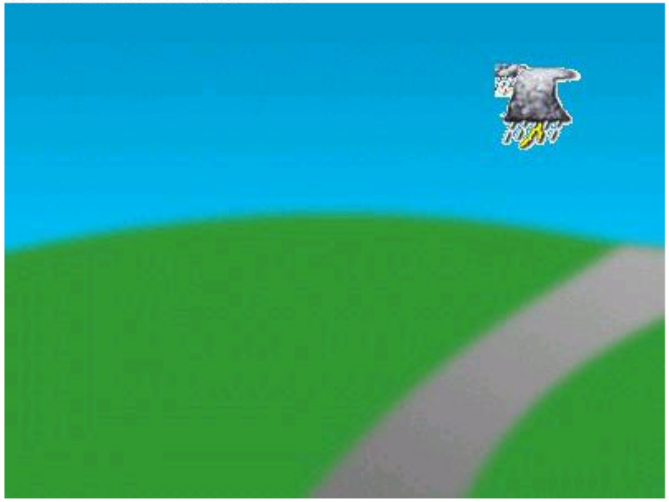
Address http://127.0.0.1:8080/webcanvas/servlet/EditRep2

The new canvas will look like this:



Click on the canvas to position the information representation. It will be moved to the position that you click on. **When done positioning**, click on the "Finished" button to return to the overview.

10% Bigger | 10% Smaller
25% Bigger | 25% Smaller
50% Bigger | 50% Smaller
100% Bigger | 100% Smaller

Set to 100% | Finished

Done | Internet

Part 3

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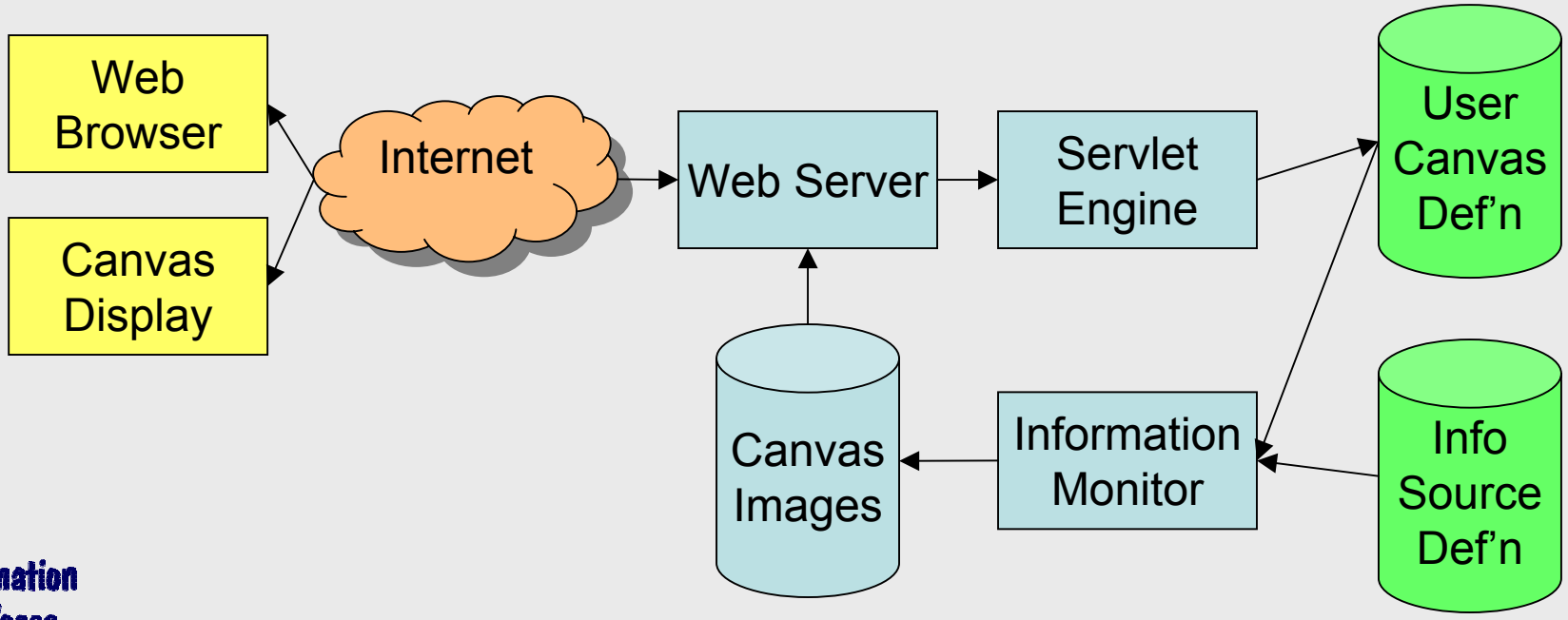
Behind the Scenes

- General Architecture
  - Monitoring information
  - XML definitions of sources & user canvases



Advanced Users

- XML permits high degree of customization
  - Both canvas and sources
- Bypass web interface by FTP'ing

```
<canvas name="AVI Canvas" password="12345">
<background src="basic_background.gif"/>
<source class="WebSource" def="stockquote.xml">
        <base x="0.8075" y="0.21"/>
        <scale percent="1.0"/>
        <param name="symbol" value="MSFT"/>
        <oparam name="price" value="0.0"/>
        <oparam name="percent" value="0.0"/>
        <rule class="ValueCompare">
                <param name="paramName" value="percent"/>
                <param name="et" value="0.0"/>
                <rep class="ShowImage">
                        <param name="imageFilename" value="clear.gif"/>
                        <param name="x" value="0.0"/>
                        <param name="y" value="0.0"/>
                </rep>
        </rule>
        <rule class="ValueCompare">
```

Satisfying the Design Principles

- Available – 2nd display requires no interaction for user to use
- Consolidated – Allows a large amount of information to be portrayed in one space
- Peripheral – Subtly updates display
- Personalized – User defines data & display
- Secure – Abstractness protects privacy

InfoCanvas of the Future

- Any type of electronic information
- Information painting tool
  - Importing & drawing info representations
  - Point and click data capture
  - Still a need for pre-defined
    - Similar to PLAY's InformativeArt

Conclusions & Future Work

- Peripheral information is important
- InfoCanvas provides a novel way of representing peripheral information
- Moving towards an “information painting” tool

For More Information

- www.cc.gatech.edu/gvu/ii/infoart
- tomiller@cc.gatech.edu

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