



Universitatea Tehnică din Cluj-Napoca
Facultatea de Inginerie Electrică

Cap.13

APLICATII PENTRU SISTEME DE MONITORIZARE SI CONTROL



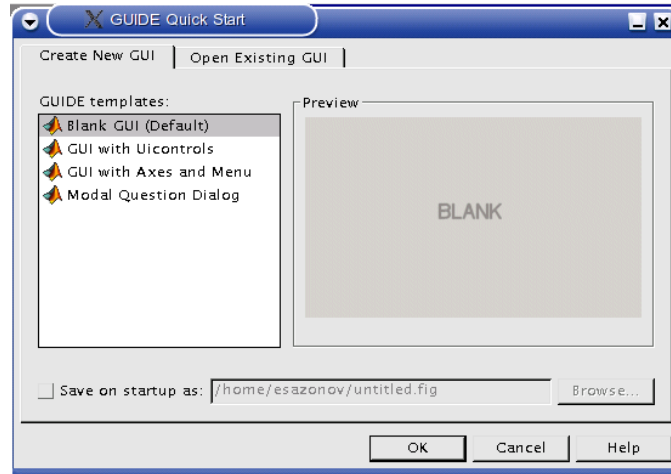
Curs: Proiectarea interfetelor grafice pentru monitorizare si control

CUPRINS

- Aplicatii utilizand Matlab
- Aplicatii utilizand Java
- Aplicatii utilizand Labview
- Aplicatii utilizand Visual Basic
- Aplicatii web de control industrial



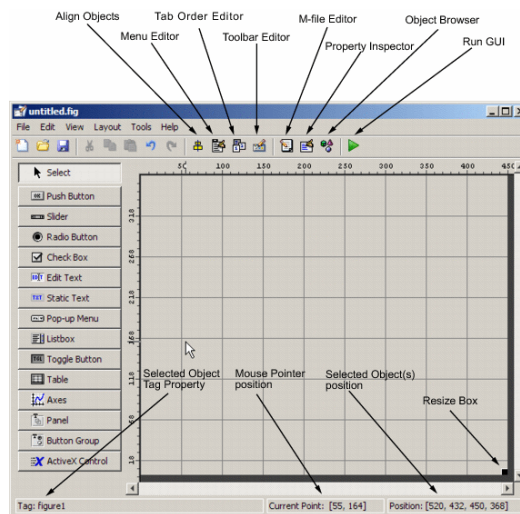
1. Matlab



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1. Matlab

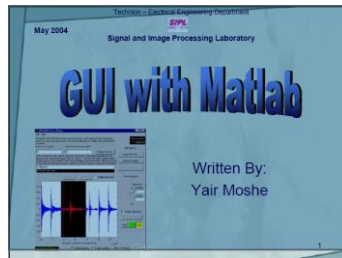


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1 Matlab

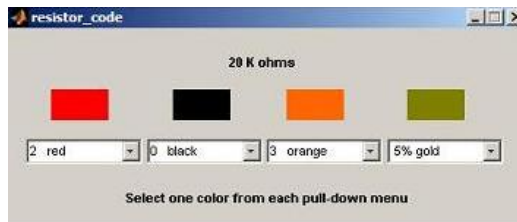
Tutoriale pentru proiectare interfete grafice



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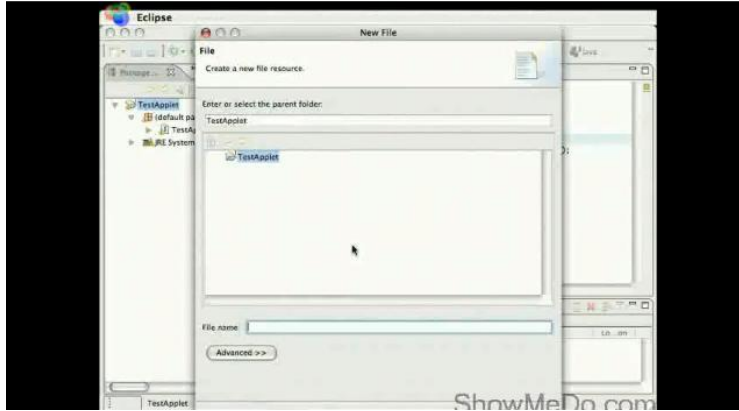
Aplicatii Matlab



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2. Java applets Tutoriale



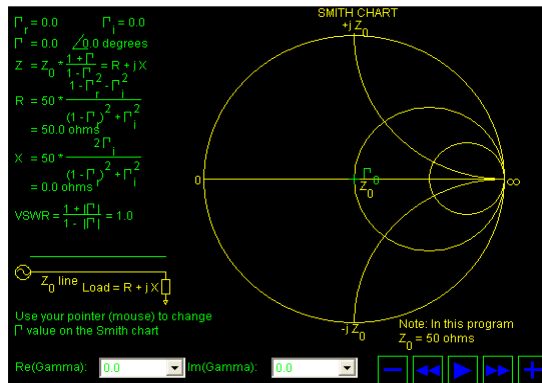
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2 Java applets Aplicatii

Smith Chart

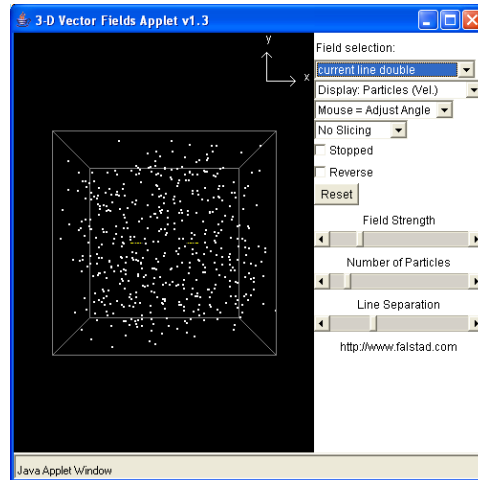
Position Gamma using the pointer device (mouse).
Press the play button to display the
constant VSWR circle on the chart



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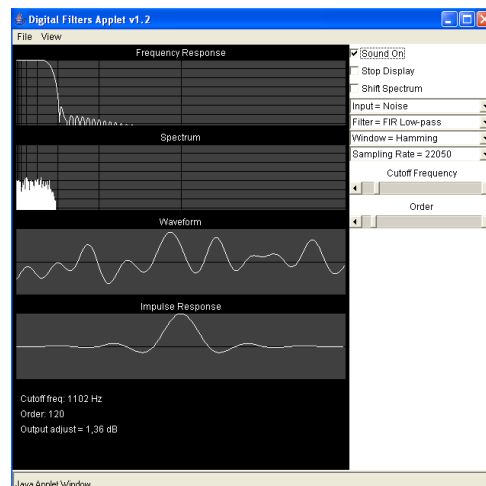
2 Java applets Aplicatii



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2 Java applets Aplicatii

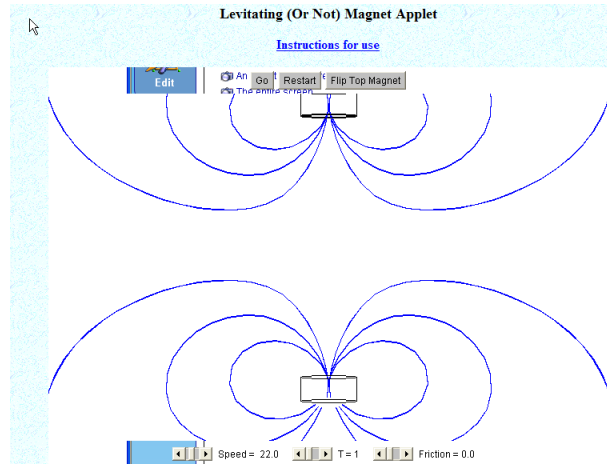


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2 Java applets

Aplicatii

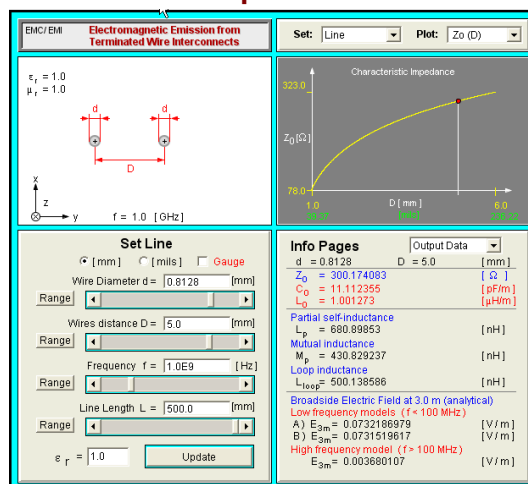


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2 Java applets

Aplicatii

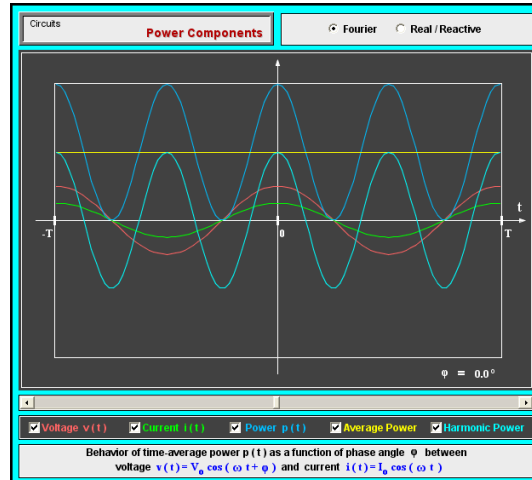


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2 Java applets

Aplicatii

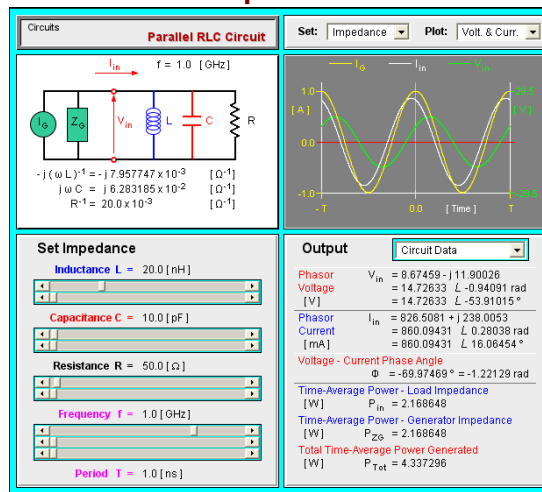


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2 Java applets

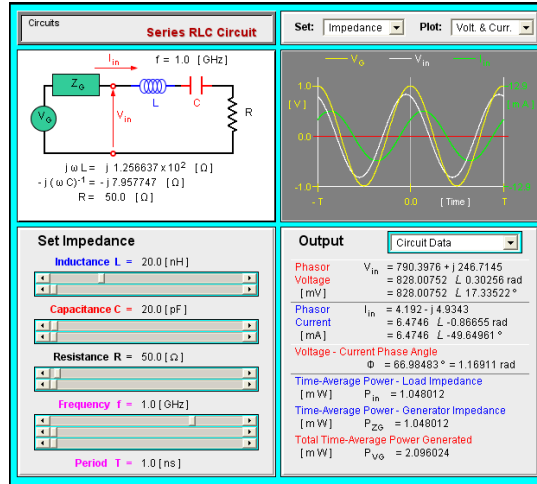
Aplicatii



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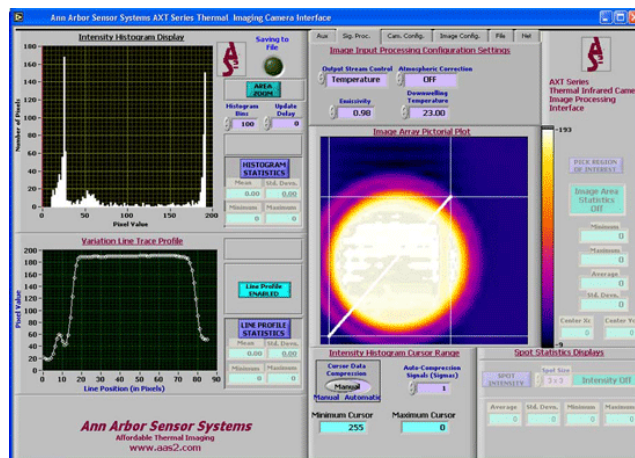
2 Java applets Aplicatii



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3 Labview Aplicatii



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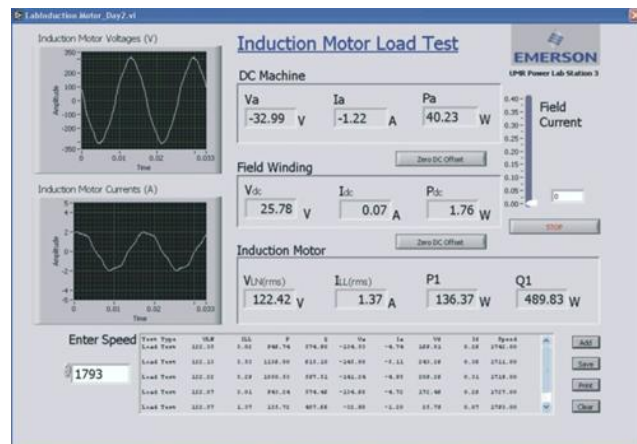
3 Labview Aplicatii



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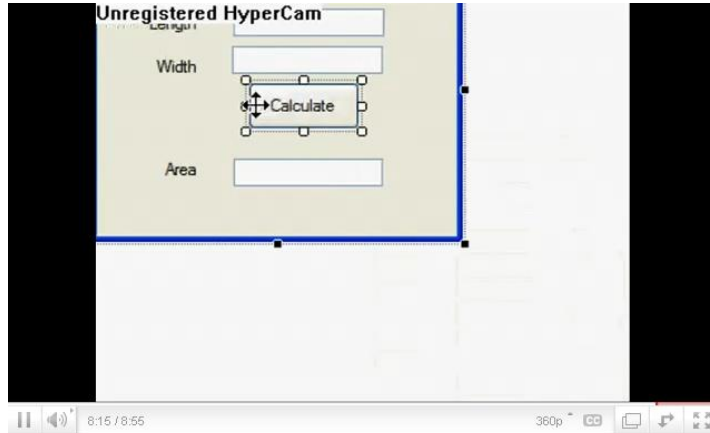
3 Labview Aplicatii



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4 Visual Basic Tutorial



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4 Visual Basic Aplicatii

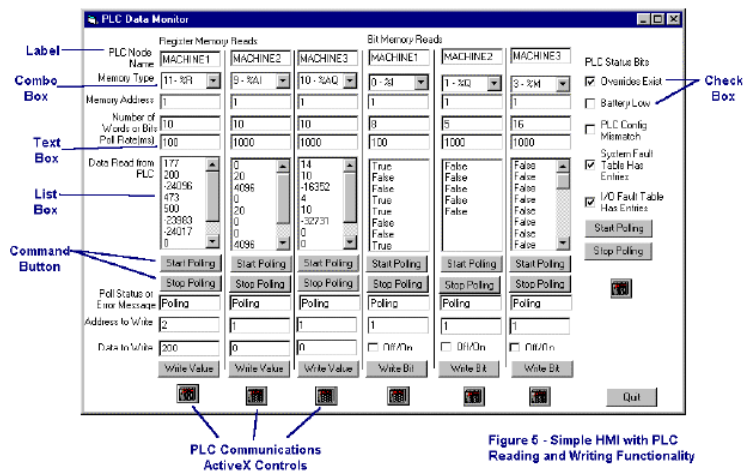
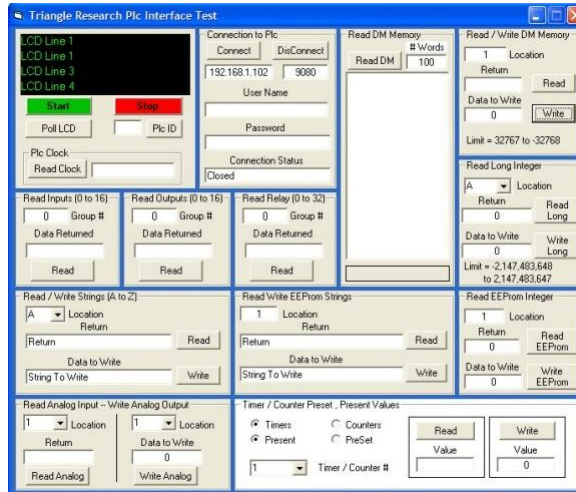


Figure 6 - Simple HMI with PLC Reading and Writing Functionality

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4 Visual Basic Aplicatii



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5 Aplicatii web de control industrial CSWorks

CSWorks is a web-based software framework for building web-based HMI, SCADA, EMI and M2M industrial automation solutions.

Key features **Web-based solution**: .NET server components, browser-based or desktop client applications

Support for a variety of data source types: popular PLC protocols like BACnet, Modbus; OPC Data Access Servers; SQL databases

SQL database integration: data acquisition from existing databases, historian using the SQL engine of your choice

Powerful scalable graphics: graphically impressive out-of-the box animated Silverlight components

Alarming: design that follows EEMUA publication 191 guidelines, alarm summary control, email and SMS notification

Real-time and historical trending: versatile trend control, integration with SQL database of your choice

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CSWorks

Key benefits **Unprecedented flexibility**

- server components as highly customizable building blocks
- client development using framework and programming/scripting language of your choice
- open architecture allows third-party server modules and client UI components

Cost efficiency

- flexible pricing model
- zero-administration browser-based client applications
- reuse of existing SQL database infrastructure

Security

- industry-standard communication security protocols
- no "security by obscurity"
- integration with existing security infrastructure

High-availability

- server component redundancy to provide fault tolerance
- virtually unlimited scalability to handle thousands of data points

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CSWorks: domenii de utilizare



Manufacturing :

CSWorks provides manufacturing companies with a powerful tool to minimize downtime, reduce costs of operation, minimize applications development and bridge the gap between corporate IT and the production floor. System integrators combine CSWorks with existing solutions to provide superior monitoring, control, reporting, alarming and trending features. CSWorks aggregates real-time and historical plant data gathered from many disparate sources and makes it available to anyone authorized - everyone from the plant floor to the top floor - to make immediate business decisions.



Oil and Gas

Oil and gas companies need to manage and control their operations while meeting regulatory requirements of federal and local governments. CSWorks provides a method of building a system tailored to the organizations' needs, providing a means for monitoring and controlling the overall operation from a single location while connecting all satellite and remote sites with secure and reliable networking technologies (LAN, WAN and the Internet).

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CSWorks: domenii de utilizare



Transportation

Operators of transportation systems need SCADA systems to manage critical infrastructures such as rail traction power and tunnel ventilation. Monitoring and controlling these systems is essential during equipment failures or critical incidents. One of the main difficulties that many organizations face is integration of multiple control systems that have been delivered over time. Transportation SCADA system is usually based on a redundant network consisting of high-performance, high-availability servers, workstations, front-end communication processors and field RTUs. CSWorks is a vendor-neutral software framework that can help build a distributed solution that functions on top of the existing subsystems.



Building Automation

Today's state-of-the-art Building Management System (BMS) provides maintenance personnel and operators with an easy way to navigate and control key operating parameters in multiple facilities. Now control and manage all aspects of a small or large building complex or campus. Use a common Web-enabled user interface to integrate facilities such as HVAC, lighting, energy, security, fire and elevators. CSWorks provides a method for creating highly customized building management systems and offers many features for handling and recording of all the operator actions, system events and alarms.

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CSWorks: domenii de utilizare



Water and Wastewater

CSWorks provides water and wastewater processing organizations with powerful tools to minimize downtime, reduce costs of operation, minimize applications development and bridge the gap between IT, management information systems and water facilities. Monitor, control and report on water treatment and pumping stations operation from a single location connecting to remote sites using secure and reliable networking technologies and recording operator actions, system events and alarms. Unify multiple control rooms into a single system connected via Internet and accessible through ordinary web browsers.



M2M (machine-to-machine)

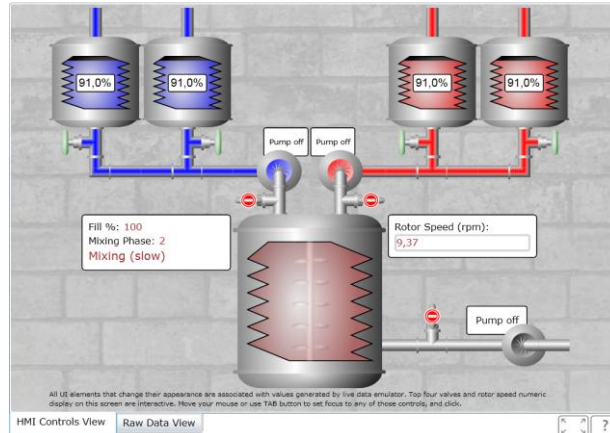
The era of machine to machine (M2M) communication has arrived. M2M is ready to cross the tipping point of global customer adoption. Ubiquitous wireless data networks, cheap hardware, and government stimulus investments are creating the foundation for very strong growth. CSWorks can be used as a versatile tool for developing user interfaces for M2M solutions without writing a single line of code on the server side. Just configure CSWorks server components to work with the centralized data source that holds all up-to-date data and create CSWorks-powered client applications that use that data.

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5 Aplicatii web de control industrial

CSWorks

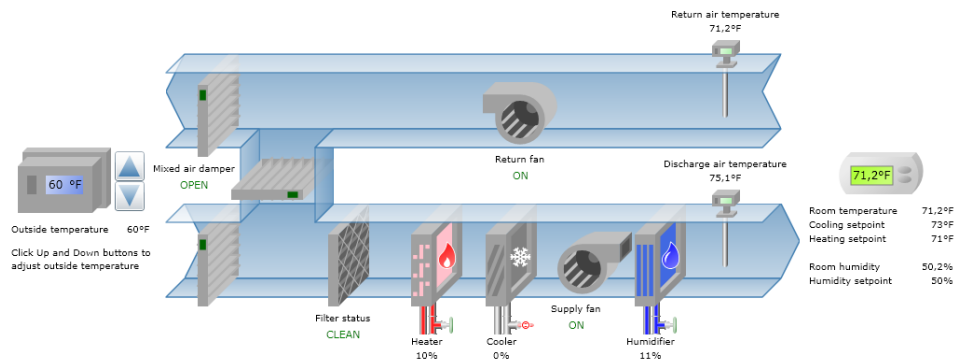


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CSWorks

CSWorks HVAC Symbol Library Demo. Source code and graphics available from your CSWorks installation package. Copyright © 2011 CSWorks Inc.



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