

# OBJECTIVES

1. What is LIMS ?
2. Why LIMS ?
3. LIMS Contents
4. How LIMS Work & Work Flow
5. Screen of LIMS Software
6. Functionalities of LIMS
7. Advantages of LIMS
8. Disadvantages of LIMS
9. Conclusion
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# What is LIMS ?



- Allows to effectively manage samples and associated data to improve lab efficiency
- Automate workflows, integrate instruments, and manage samples and associated information.
- Produce accurate, reproducible results ,faster and more reliably
- Makes data from sequencing runs easier to store, track, and assess over time and across experiments.
- Evaluate and improve operational efficiency



# LIMS Contents

- Customers
- Collection sites
- Preservatives
- Analysis method
- Employees
- Passwords
- Tests & test results
- Bottle types
- Sample matrix

- Parameters
- Control limits



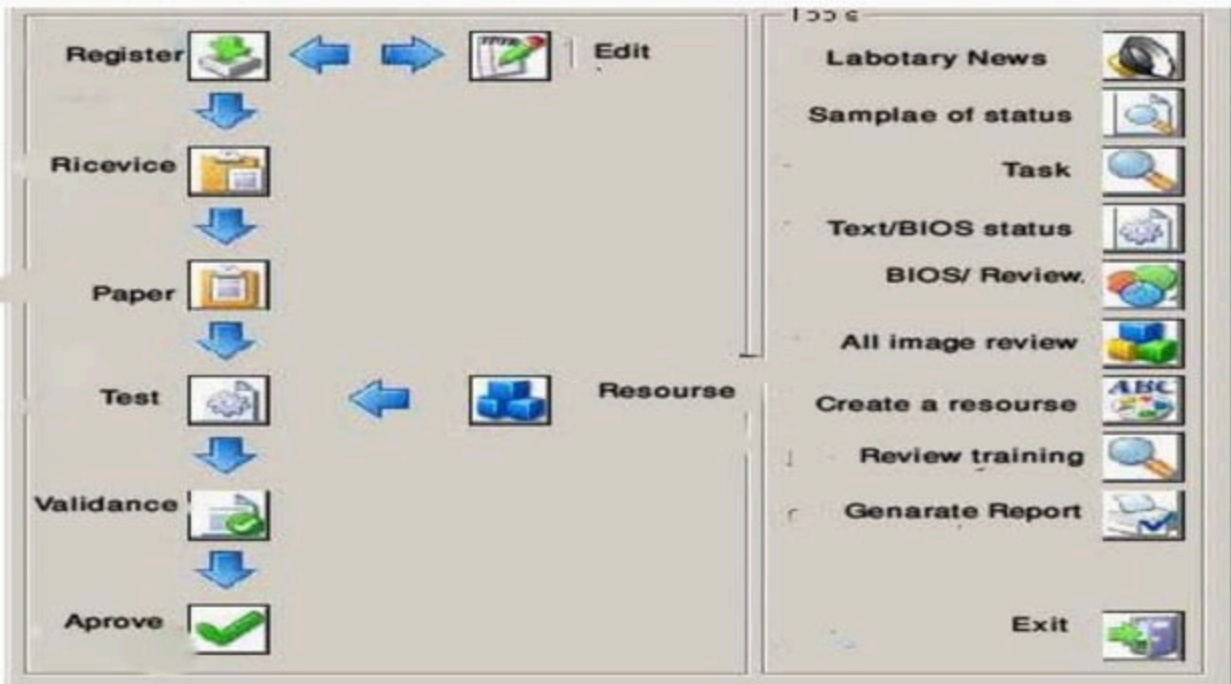
## **LIMS also includes:**

- Sample Tracking
- Sophisticated Query Searching
- Instrument Integration
- Powerful Reporting Functionality
- Integrated Bar-coding
- Integrated QA/QC Functions
- Full Audit Trail
- Enterprise system Integration

# HOW LIMS WORKS ?



# LIMS work flow





# Screen of LIMS software

LIMS - Laboratory Information Management System - TENSILE & COMPRESSION TESTS

09/03/2004 18:21:29 Contract No: Client Ref: JEV81 Contact: Kevin Milican

Description: Sample contract for test purposes

Header: Default

**Test Details**      **Detail Comments**      **Error Calculations**

Equipment: Losenhausen 1000kN (Range 1)      Width: 23.03      Yield Type: 0.2% Proof      Test Date: 09/02/2004

Specimen: Transweld B      Thickness: 12.75      Yield Load: 152 kN      Sentence: F

Basic Type: Flat      Initial      Final      U.L. Load: 169 kN

Compression Test      Diameter:      Fracture Location: Plane     

Internal Diameter:      Initial      Final

Gauge Length:      Initial      Final

Comments:

	Results	Required
Yield:	516 MPa	450
UTS:	574 MPa	515
Elongation:		
RA:		

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Equipment: Losenhausen 200kN (Range 1)      Width:      Yield Type: 0.2% Proof      Test Date: 09/02/2004

Specimen: All Weld      Thickness:      Yield Load: 27.3 kN      Sentence: F

Basic Type: Round      Initial      Final      U.L. Load: 30.2 kN

Compression Test      Diameter: 8.00      4.00      Fracture Location:     

Internal Diameter:      Initial      Final

Gauge Length: 50.00      60.00

Comments: Standard Error Calculations:  
Yield=543 MPa ± 14.7 (2.7%)  
UTS=601 MPa ± 16.2 (2.7%)  
Elongation=20.0% ± 0.2 (0.9%)

	Results	Required
Yield:	543 MPa	450
UTS:	601 MPa	515
Elongation:	20.0%	18%
RA:	75.0%	50%

# Functionalities of LIMS



Divided into five laboratory processing phase

- (1) the reception and log in of a sample and associated customer data,
- (2) the assignment, scheduling, and tracking of the sample and the associated analytical workload,
- (3) the processing and quality control associated with the sample and the utilized equipment and inventory,
- (4) the storage of data associated with the sample analysis,
- (5) the inspection, approval, and compilation of the sample data for reporting and/or further analysis

# Functionalities of LIMS

## Additional functions

- audit management
- Barcode handling
- chain of custody
- Compliance
- customer relationship management
- document management
- instrument calibration and maintenance
- inventory and equipment management
- manual and electronic data entry
- method management
- personnel and workload management
- quality assurance and control
- Reports
- time tracking
- Traceability
- workflows



# Advantages of LIMS

- ❑ Very fast report access & queries
- ❑ Reduction in paperwork
- ❑ Improved data quality (reduction in errors)
- ❑ Improved operational efficiency
- ❑ Simple to use Excel-like formulas
- ❑ Increased productivity (reduction of routine tasks)
- ❑ Productivity gains (instrument interfacing and auto-reporting)
- ❑ Integration with other departments/business systems
- ❑ Reduces transcription errors
- ❑ Increases throughput
- ❑ Avoids duplication
- ❑ ROI (Return On Investment is typically within 1 year)



# Disadvances of LIMS

- Training—Personnel training is required
- Time to adapt to a new system
- Cost—Purchase and maintenance are the most expensive parts of a computerized system, and the costs can be prohibitive in some settings.
- Physical restrictions
- Need for back-up system—All computer information must be carefully backed up.
- Loss of data due to a damaged disk or system crash cannot be tolerated, and backup systems will be critical

# CONCLUSION



- A computerized system for laboratory data is often called a laboratory information management system and is referred to by the acronym LIMS or LIS.
- The use of a computerized system is becoming more common in laboratories around the world.
- An appropriately designed and installed LIMS brings accuracy and accessibility to the flow of samples and data in the clinical laboratory.