

Pick a Palette and Beyond: REPORT GENERATION with LABVIEW®

LabVIEW User Group Meeting
Thursday, September 13, 2007

Terry Stratoudakis, PE
terry@aleconsultants.com
Certified LabVIEW Developer

ALE SYSTEM INTEGRATION
MELVILLE, NEW YORK

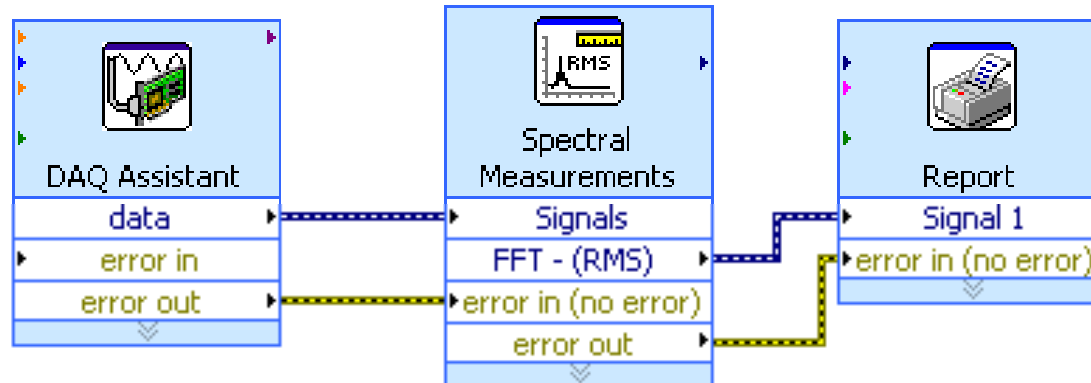
OVERVIEW

- Why Automate Report Generation?
- Methodologies for producing automated reports in LabVIEW
 - Built in Report tools of LabVIEW
 - NI LabVIEW Report Generation Toolkit for Microsoft Office
 - ActiveX to interface with MS Word/Excel
- Examples
 - Microsoft Word
 - Microsoft Excel

Why Automate Report Generation?

- Standardize your reports
 - common reporting platform – easy to read
 - increase quality of reports (graphics, etc.)
- Low cost to implement
 - Relative to overall cost of typical ATE systems
- Generate reports faster

Acquire, Analyze, PRESENT



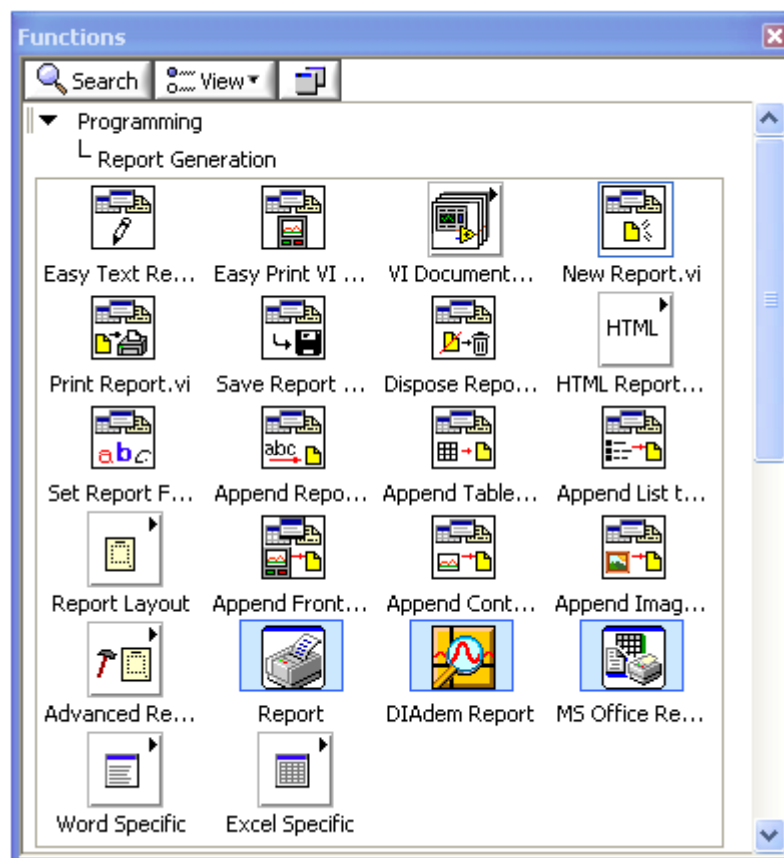
ALE SYSTEM INTEGRATION

Presenting Data with LabVIEW

- LabVIEW Front Panel – graph, chart, gauges, etc.
- Email – send the report directly to any email address
- Save – save to hard drive for future viewing (ASCII, Binary, RTF, TDM, TDMS, MS Office)
- Print – for immediate viewing or filing
- Web – built-in web server of LabVIEW (XML, HTML, ATML)
- Database Connectivity – interface to any SQL database
- PDA and remote devices

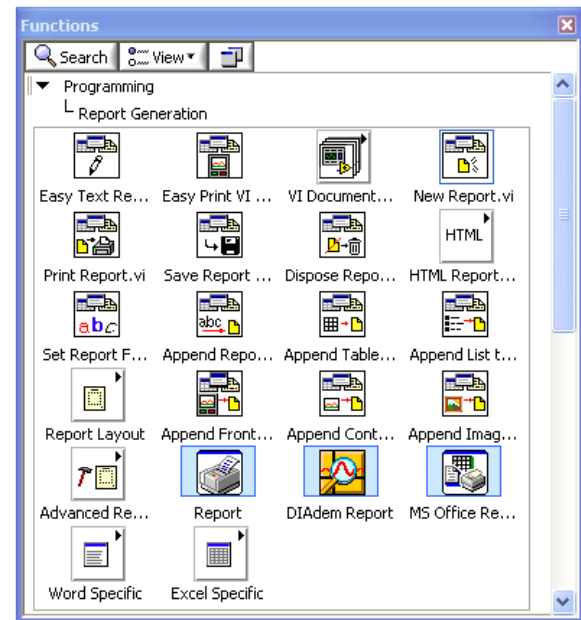
Report Generation Tools Palette of LabVIEW

- Intro Reports
- HTML Reports
- VI Documentation
- Report Layout
- Express VIs
- Word Specific
- Excel Specific
- Advanced Report Generation



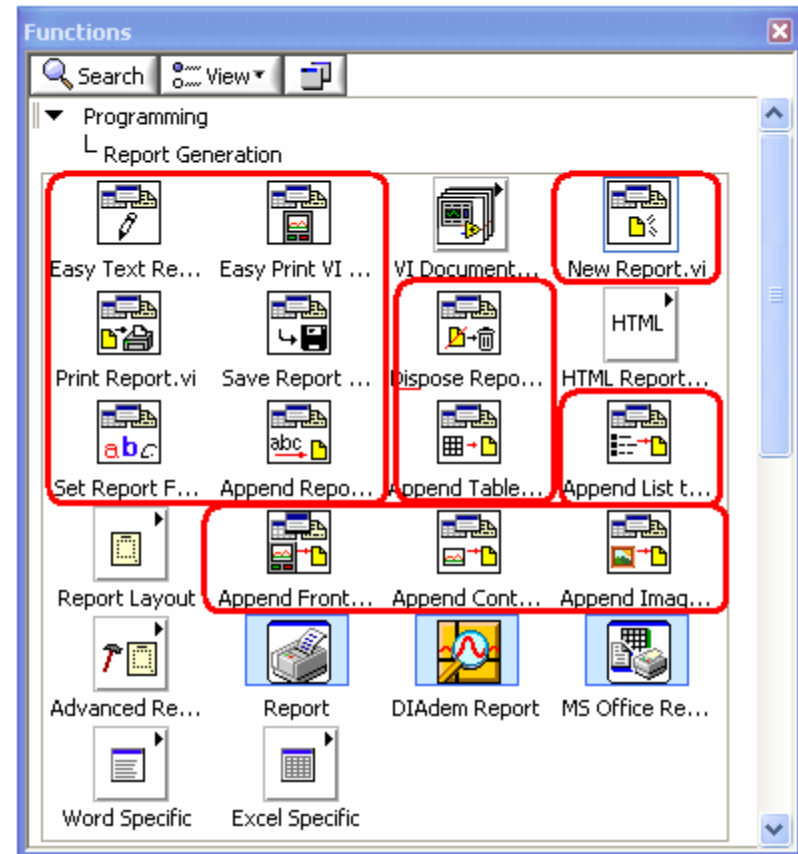
Report Generation Tools for LabVIEW

- Built in report generation
 - Standard VIs
 - Express VIs
 - VI Documentation
 - HTML VIs
 - Report Layout VIs
 - Advanced Vis
- NI LabVIEW Report Generation Toolkit for Microsoft Office
 - Microsoft Word, Microsoft Excel
 - Included with Standard Dev Suite
- ActiveX to interface with MS Word/Excel and Adobe Acrobat (PDF)



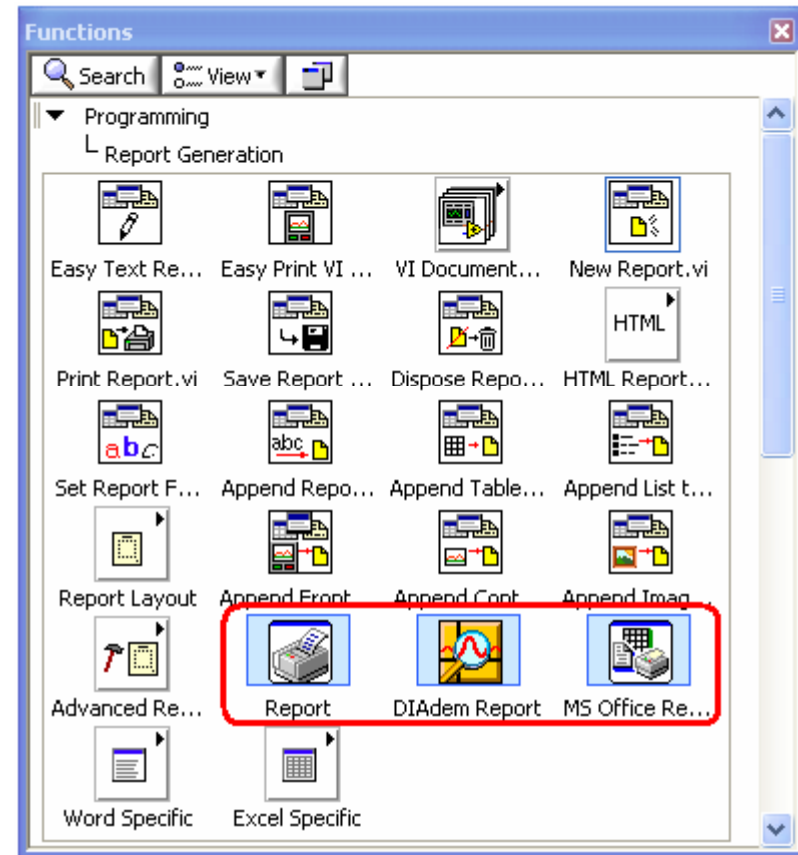
Standard Report Generation VIs

- Basic Reporting Tools
 - Create/Print/Save
 - Built in Examples
 - Basic Format Changes
- Append
- Report Formatting



Express Report Generation VIs

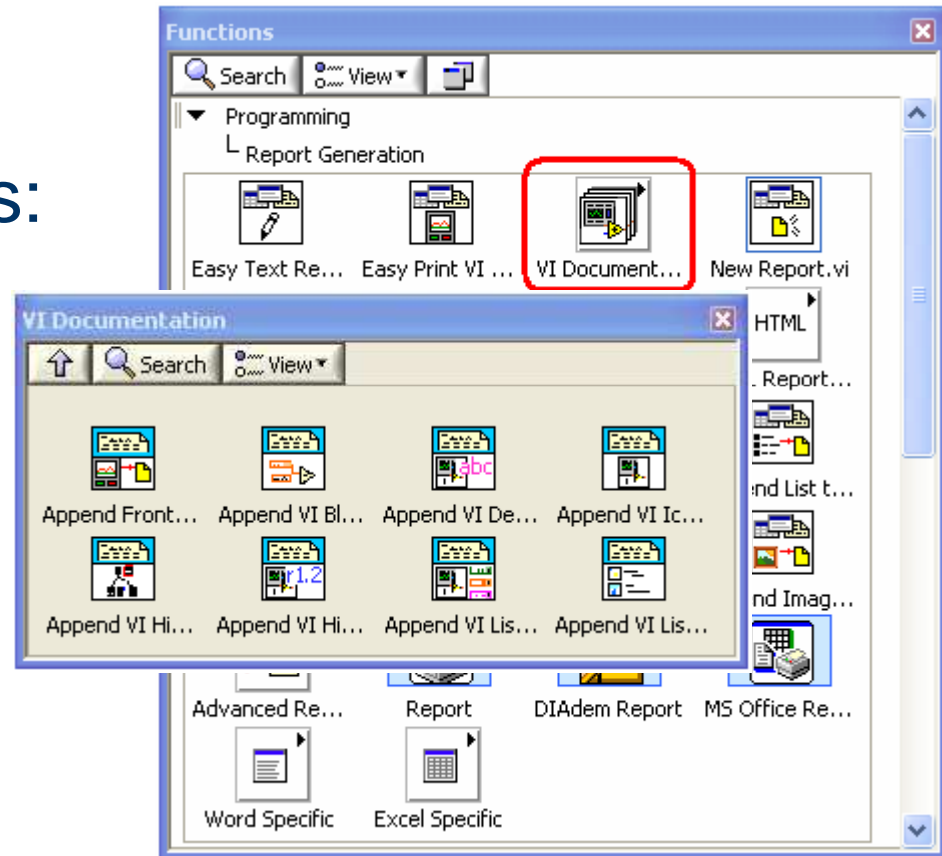
- Standard Report
- DIAdem Report
- MS Office Report



VI Documentation Sub-palette

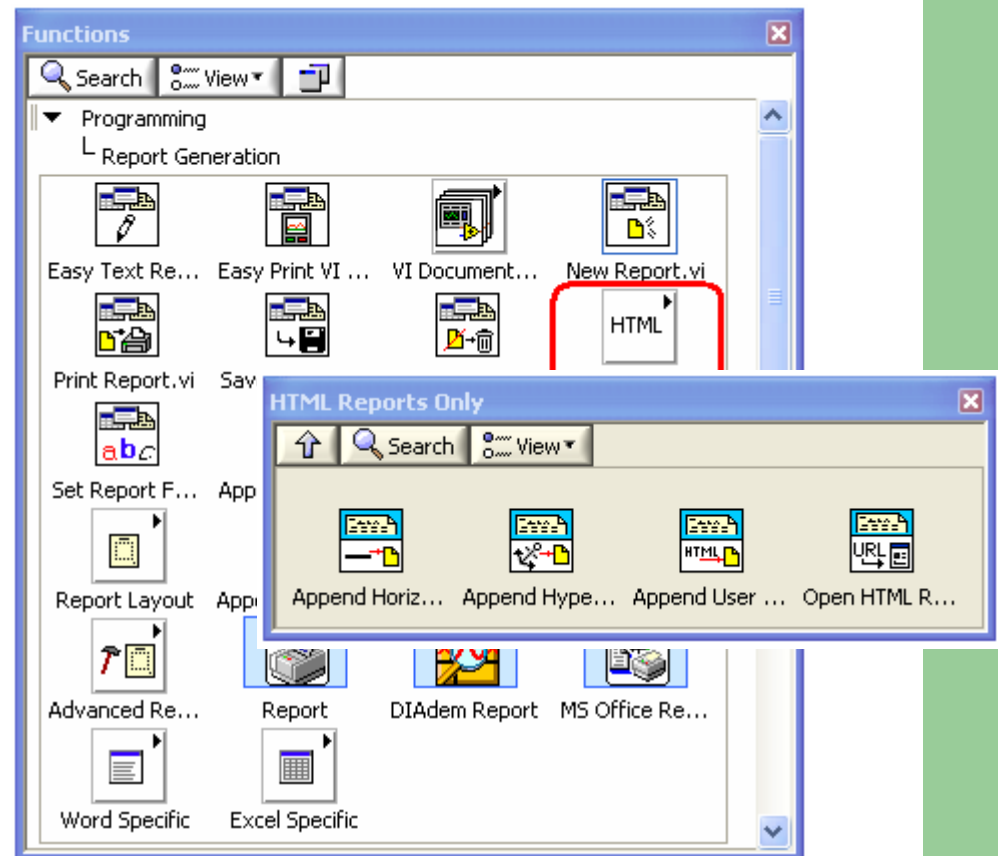
- Append different LabVIEW images:

- Front Panel
- Block Diagram
- VI Description



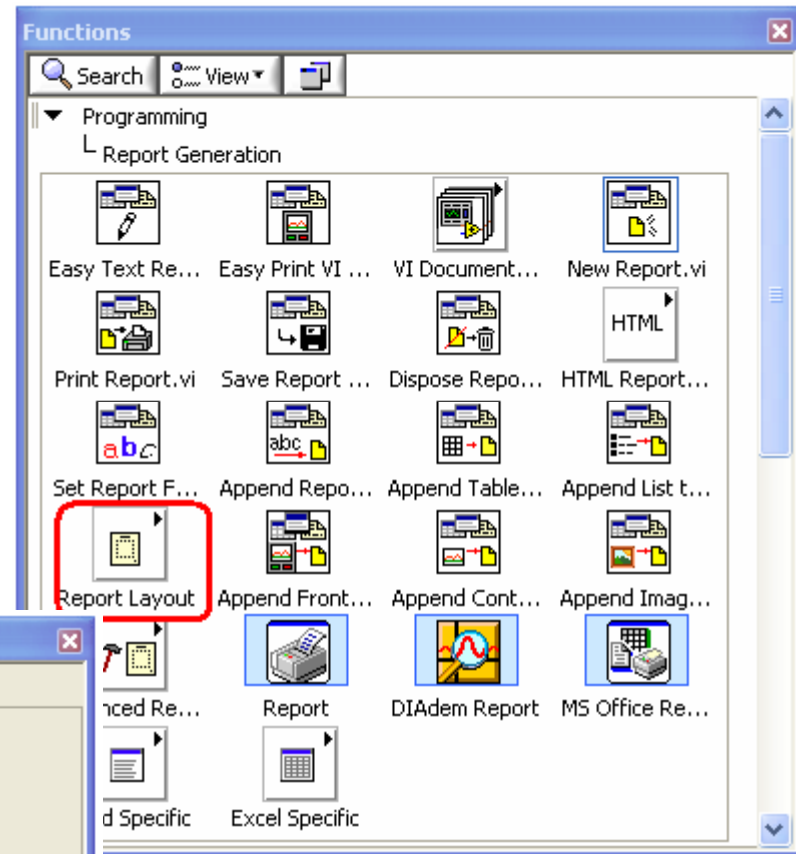
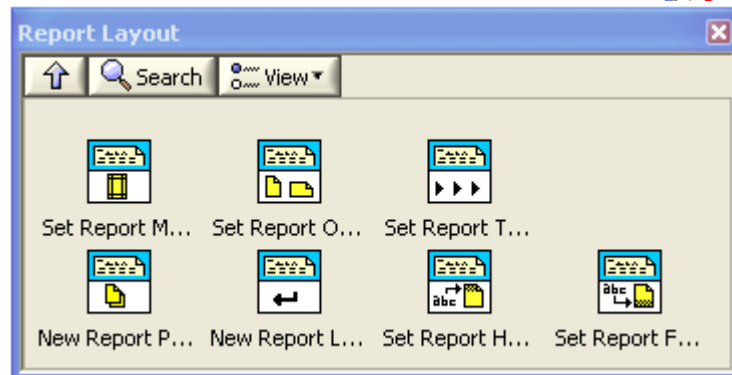
HTML Report Generation VIs

- Dynamically create and save HTML files for posting to built-in LabVIEW web server



Report Layout VIs

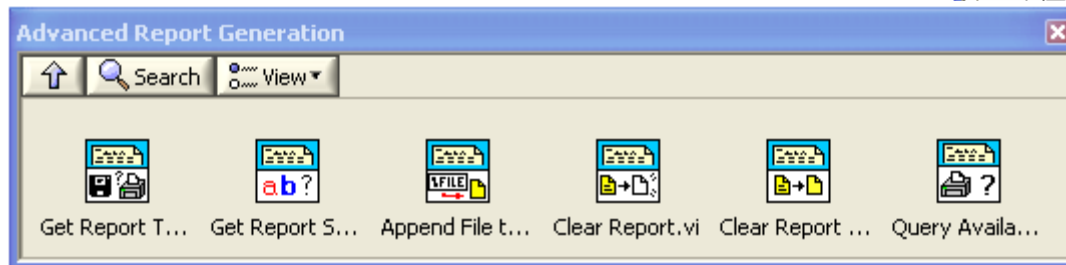
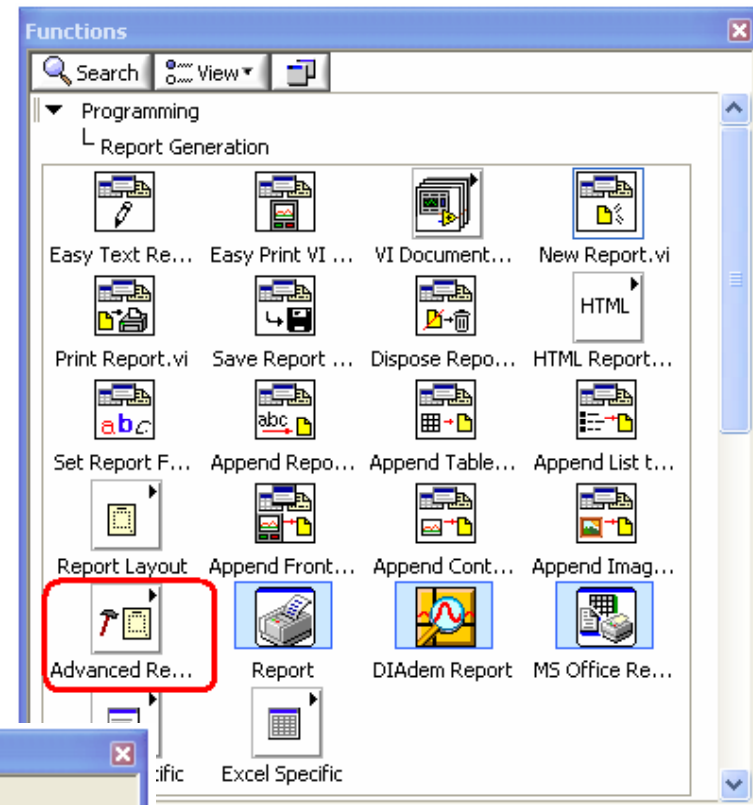
- Margins
- Orientation
- Headers/Footers



DAVE SYSTEM INTEGRATION

Advanced Report Generation VIs

- Get/Clear Report Info
- Insert Files to Report
- Find Printers

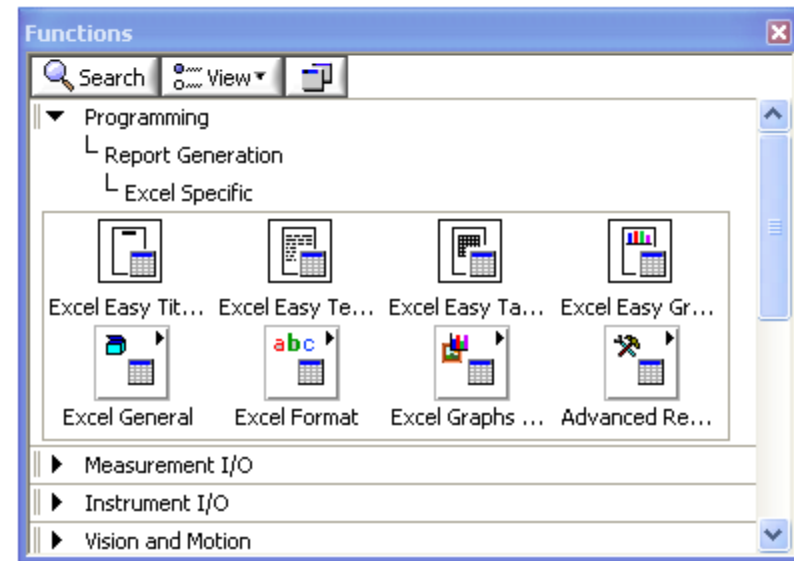
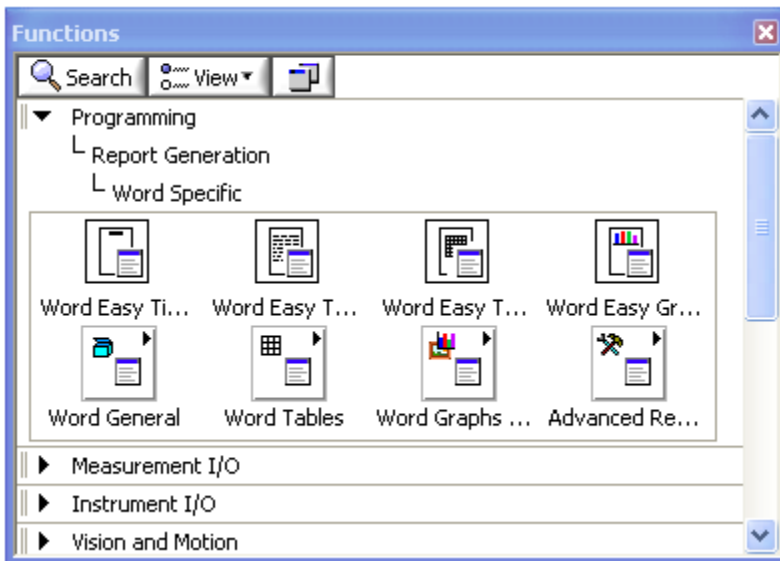


ALE SYSTEM INTEGRATION

LabVIEW Report Generation Toolkit for Microsoft Office

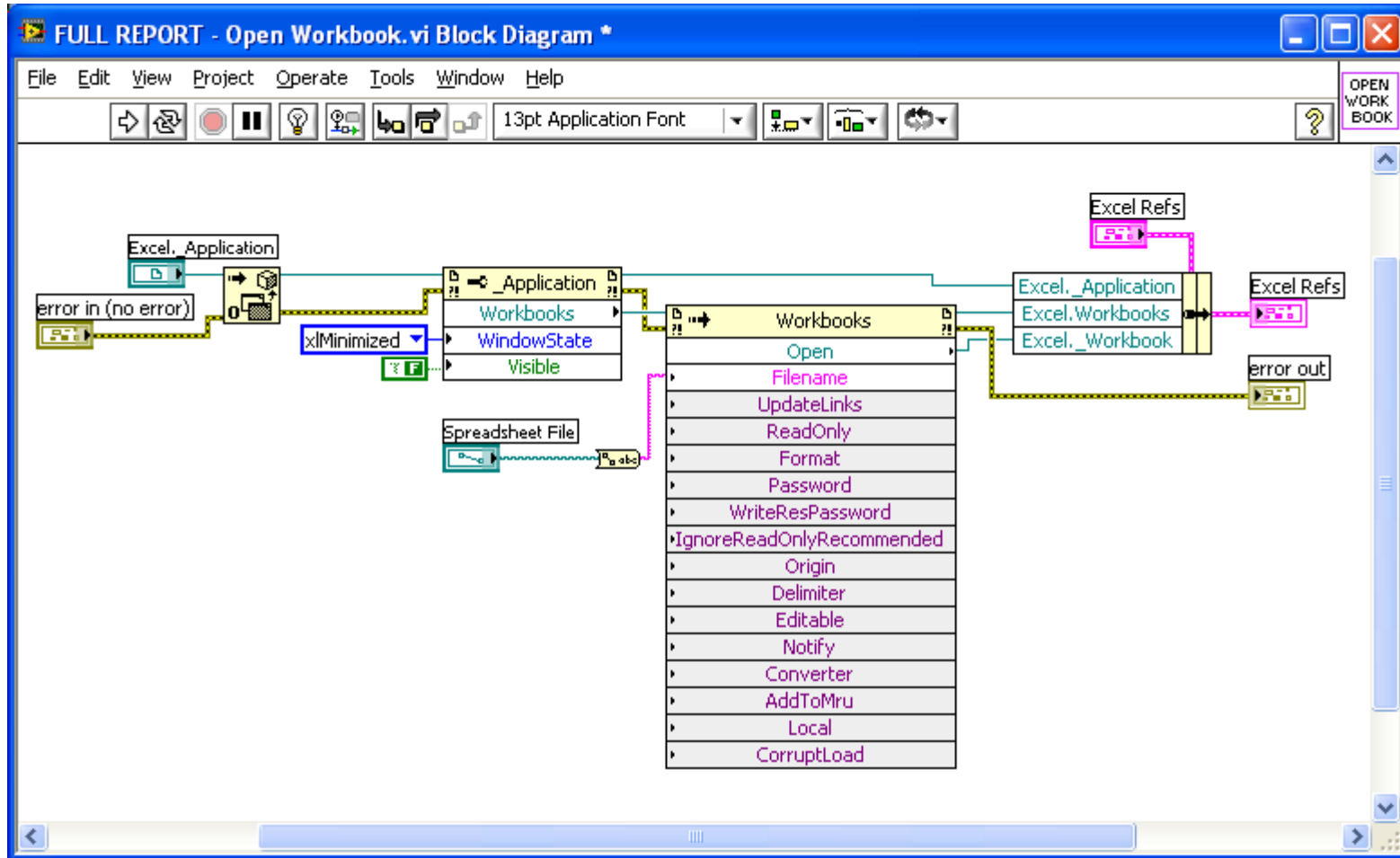
VIs and Express VIs to interface to:

- Microsoft Word
- Microsoft Excel



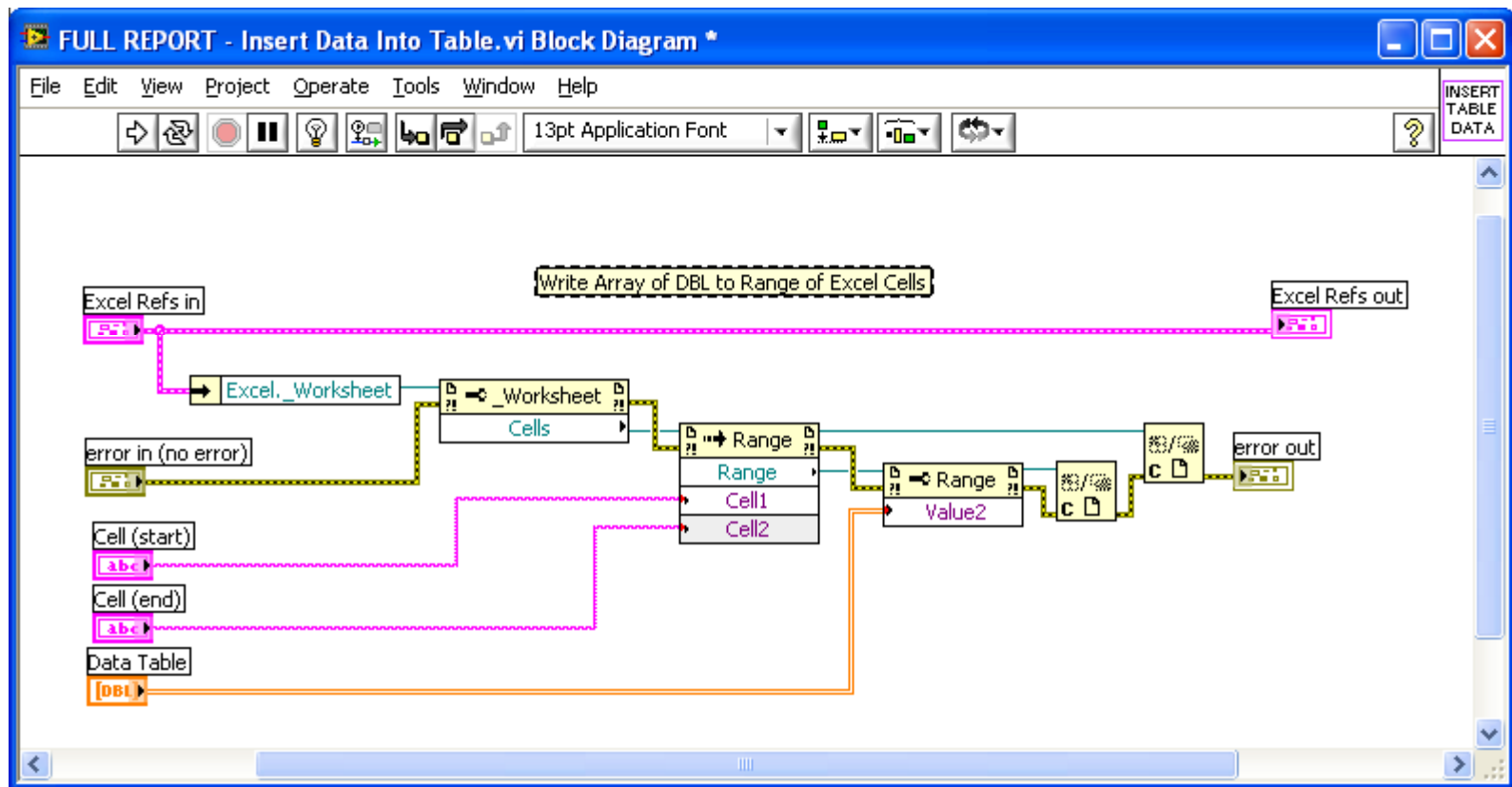
ALE SYSTEM INTEGRATION

Advanced Report Generation ActiveX: LabVIEW -> Word/Excel



ALE SYSTEM INTEGRATION

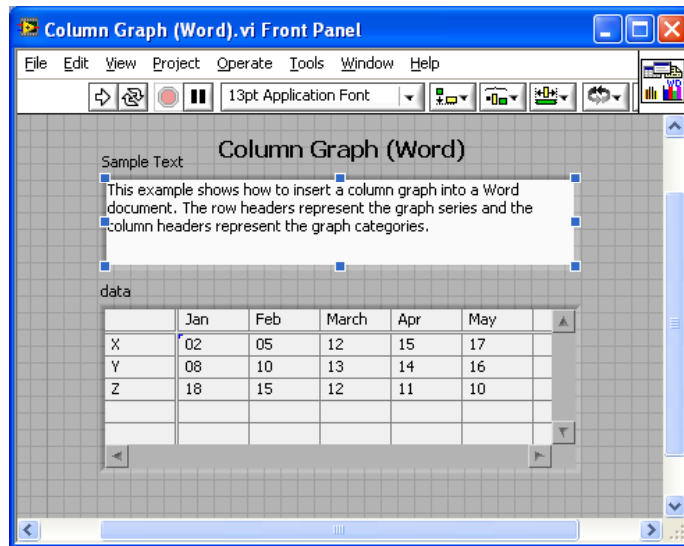
Advanced Report Generation ActiveX: LabVIEW -> Word/Excel



ALE SYSTEM INTEGRATION

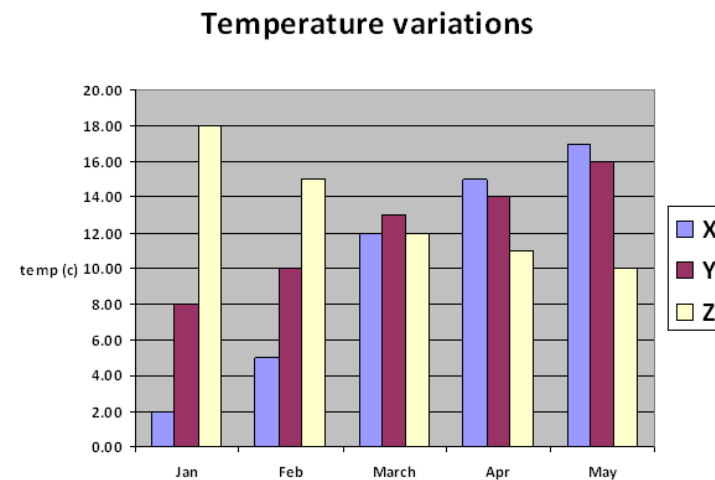
Example: Microsoft Word Report

Column Graph



Front Panel

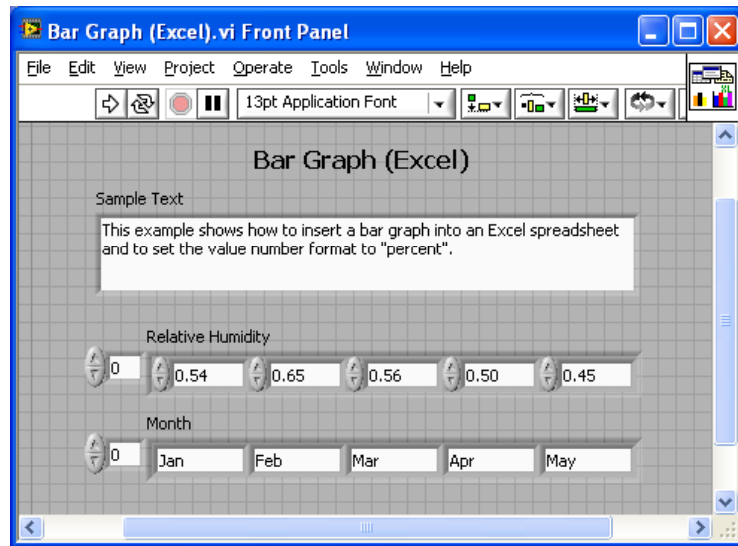
This example shows how to insert a column graph into a Word document. The row headers represent the graph series and the column headers represent the graph categories.



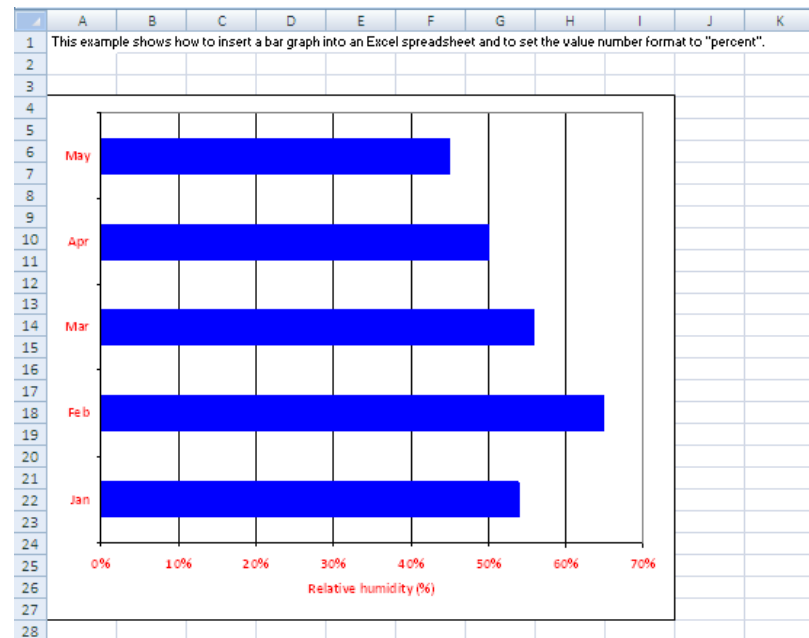
Graph in Word

Example: Microsoft Excel Report

Bar Graph



Front Panel



Graph in Excel

Questions?

Comments?

ALE SYSTEM INTEGRATION

References

- LabVIEW Help (.chm file) – search for “Report Generation VIs”
- LabVIEW Advanced Virtual Architects (LAVA): <http://forums.lavag.org/forums.html>
- LabVIEW Open Source Community: http://wiki.openg.org/Main_Page
- ALE System Integration website: <http://www.aleconsultants.com>
- NI LabVIEW Report Generation Toolkit for Microsoft Office User Manual: <http://www.ni.com/pdf/manuals/373805a.pdf>

ALE SYSTEM INTEGRATION

<http://www.aleconsultants.com> – info@aleconsultants.com

- National Instruments Certified Alliance Partner
- Over 10 Years LabVIEW and Test & Automation experience
- Located in and servicing Long Island and New York City
- Expertise in NI and other instrument manufacturers' products
- All developers have National Instruments Certification
- Test & Measurement Specialties:
 - Aerospace/DoD
 - Calibration
 - Telecommunications/RF
 - ISO17025
 - Automotive
 - Sound and Vibration
 - Test Labs
 - Instrument Control

ALE SYSTEM INTEGRATION

Terry Stratoudakis, PE

- Bachelor of Science, Master of Science in Electrical Engineering, Polytechnic University
- National Instruments Certified LabVIEW Developer
- New York State licensed Professional Engineer
- Former Assistant Adj. Prof. at New York City College of Technology
- Co-founder and President of ALE System Integration
- Worked for Underwriters Laboratories for six years
- Nine years LabVIEW and Test & Measurement experience
- Member of the IEEE, IEEE-LICN, and NSPE.
- Technical knowledge of PID Control, DAQ, SCXI, Vision, FieldPoint, GPIB/Serial control of instruments, and automated calibrations with Fluke Met-Cal.

ALE SYSTEM INTEGRATION