

# MVJ COLLEGE OF ENGINEERING, BENGALURU

## NI Graphical Programming

### Course Contents:

Data flow, Polymorphism, LabVIEW environment, Front panel window, block diagram, and connector pane, Menus and palettes, Configuration options,

Day 1:

**Software constructs in LabVIEW:** Front panel window and block diagram objects, Controls, indicators, IO controls, and refnums Terminals, constants, and nodes, Palettes, update modes, and legends of charts and graphs, Mechanical action of Boolean objects Property Nodes, Data types and data structures, Numeric, string, Boolean, and path data types, Array and cluster data types, Waveform and timestamp data types, Variant data types, Working with objects and data types on front panel windows, Ranges, formats, representation, and scaling, Customizing controls, Type definitions and strict type definitions, Program control structures and data storage, Looping structures (For Loops and While Loops), Indexing on loop boundaries, Shift registers, Case and Sequence structures, Flat and Stacked sequence structures, Case selector values and data types, Data passing—tunnels and sequence locals, Event structures, Notify and filter events (user interface), Value (Signaling) properties of controls, Dynamic events and user events, Formula Node, Conditional Disable and Diagram Disable structures, Timed structures, Local, global, and shared variables,

Day 2:

**Programming VIs and functions :** Numeric, Boolean, string, path, and variant, Conversion, comparison, and manipulation, Arrays and clusters, Timing i. Wait timers, Tick Count (ms), and Date/Time functions ii. Timing functions, Waveform and waveform file I/O, Dynamic and User events, **Data communication and synchronization VIs and functions:** Local, global, and shared variables, DataSocket, TCP and UDP, Synchronization i. Notifiers ii. Queues iii. Semaphores, **VI Server VIs and functions:** Configuring the VI Server, Class hierarchy, references, Property Nodes, and Invoke Nodes, Dynamically loading Vis, **Error handling VIs and functions:** Error clusters, Dialog & User Interface Vis, Custom error codes, **Design patterns:** Simple state machine, User

interface event handler, Queued message handler, Producer/consumer (data) and producer/consumer (events), Functional global variables,

**Day 3:**

**SubVI design:** SubVI creation methods, Connector panes and connection types, Polymorphic subVIs, Options related, **Debugging tools and techniques:** Debugging tools i. Error list window ii. Execution highlighting iii. Breakpoints and single stepping iv. Generic and custom probes, Debugging practices and techniques for different situations, VI design and documentation (style) practices: Refer to the LabVIEW Style Checklist topic of the LabVIEW Help for information on the following items i. User interface design and block diagram layout ii. Modular and hierarchical design iii. SubVI icons and connector pane layout (standard) iv. VI properties v. Documenting VIs , Programming practices i. Enforcing dataflow ii. User interface updates and response to user interface controls iii. Data type selection, coercion, and buffer allocation iv. Array, string, and loop operations v. Local and global.

Sl.No	Name of the student	USN No	Event	Year
1	Pooja NV	1MJ12TE023	NI Graphical Programming	2013-14
2	Rini Samuel	1MJ12TE030	NI Graphical Programming	2013-14
3	Roopini C K	1MJ12TE031	NI Graphical Programming	2013-14
4	Swathi	1MJ12TE044	NI Graphical Programming	2013-14
5	Gouthami	1MJ12TE011	NI Graphical Programming	2013-14
6	Keerthana K	1MJ12TE016	NI Graphical Programming	2013-14
7	Aman Kumar Mishra	1MJ11EC009	NI Graphical Programming	2013-14
8	Krishna Chandra Patil	1MJ11EC041	NI Graphical Programming	2013-14
9	Chandan Lal Gupta	1MJ11EC021	NI Graphical Programming	2013-14
10	Abhishek Gautam	1MJ11EC002	NI Graphical Programming	2013-14
11	Gouri Shankar Prasad	1MJ11EC031	NI Graphical Programming	2013-14
12	Melinda Pinto	1MJ11EC050	NI Graphical Programming	2013-14
13	Megha V	1MJ11EC049	NI Graphical Programming	2013-14
14	Monika Parasar	1MJ11EC052	NI Graphical Programming	2013-14
15	Shima Rana	1MJ11EC096	NI Graphical Programming	2013-14
16	Vivin Dsouza	1MJ11EC119	NI Graphical Programming	2013-14
17	Supriya Deka	1MJ11EC108	NI Graphical Programming	2013-14
18	Madhumathi	1MJ11EC046	NI Graphical Programming	2013-14
19	M Sai Soundarya	1MJ11EC044	NI Graphical Programming	2013-14

20	Narendra Sharma	1MJ11EC056	NI Graphical Programming	2013-14
21	Siddarth S	1MJ11EE039	NI Graphical Programming	2013-14
22	Vishal	1MJ11EE047	NI Graphical Programming	2013-14
23	Ravi Shankar	1MJ11EE033	NI Graphical Programming	2013-14
24	Sajay	1MJ11EE035	NI Graphical Programming	2013-14
25	Bigyan Sharma	1MJ11EE008	NI Graphical Programming	2013-14
26	Vishali Shetty	1MJ11ML020	NI Graphical Programming	2013-14
27	Soham Sen	1MJ11ML014	NI Graphical Programming	2013-14
28	Algu Sundaram	1MJ12CV400	NI Graphical Programming	2013-14
29	Harshith	1MJ11CV011	NI Graphical Programming	2013-14