CP5009 DATA VISUALIZATION TECHNIQUES

DETAILED SYLLABUS

UNIT I CORE SKILLS FOR VISUAL ANALYSIS

Information visualization – effective data analysis – traits of meaningful data – visual perception –making abstract data visible – building blocks of information visualization – analytical interaction – analytical navigation – optimal quantitative scales – reference lines and regions – trellises and crosstabs – multiple concurrent views – focus and context – details on demand – over-plotting reduction – analytical patterns – pattern examples.

UNIT II TIME-SERIES, RANKING, AND DEVIATION ANALYSIS

Time-series analysis – time-series patterns – time-series displays – time-series best practices – part-to-whole and ranking patterns – part-to-whole and ranking displays – best practices – deviation analysis – deviation analysis displays – deviation analysis best practices.

UNIT III DISTRIBUTION, CORRELATION, AND MULTIVARIATE ANALYSIS

Distribution analysis – describing distributions – distribution patterns – distribution displays – distribution analysis best practices – correlation analysis – describing correlations – correlation patterns – correlation displays – correlation analysis techniques and best practices – multivariate analysis – multivariate patterns – multivariate displays – multivariate analysis techniques and best practices.

UNIT IV INFORMATION DASHBOARD DESIGN

Information dashboard – Introduction– dashboard design issues and assessment of needs – Considerations for designing dashboard-visual perception – Achieving eloquence.

UNIT V INFORMATION DASHBOARD DESIGN

Advantages of Graphics _Library of Graphs – Designing Bullet Graphs – Designing Sparklines – Dashboard Display Media –Critical Design Practices – Putting it all together Unveiling the dashboard.

OBJECTIVES:

To develop skills to both design and critique visualizations.

To introduce visual perception and core skills for visual analysis.

To understand visualization for time-series analysis.

To understand visualization for ranking analysis.

To understand visualization for deviation analysis.

To understand visualization for distribution analysis.

To understand visualization for correlation analysis.

To understand visualization for multivariate analysis.

To understand issues and best practices in information dashboard design.

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