Predictive Analytics & Data Mining: Core Concepts

Course Summary

Description

This preparatory session establishes a baseline understanding of the introductory material required to hit the ground running in the highly interactive Predictive Analytics and Data Mining courseware. By viewing this initial lecture in advance of the live training session, participants will be prepared to proceed directly into the lecture / demo / work-along cycle format. In addition, those attending the Strategic Implementation course will not be exposed to the same foundational material at the start of each independent course within the series.

This presentation is an asynchronous lecture that may be viewed at your leisure. It is an independent prerequisite module and not representative of the delivery style of the interactive classroom or live on-line training. Core Concepts conveys a mind-shifting perspective for actionable analytics to those new to the practice, while preparing a platform for more coverage and momentum in the Predictive Analytics and Data Mining courseware.

Objectives
At the end of this course, students will be able to:
- Start the mind-shift from a traditional tactical emphasis to a strategic focus for actionable analytics
- Outline and understand the four stages of the low-risk / high-impact Incremental Development Strategy
- Identify and understand the Three-Step Project Design and the Four Core Analytic Project Types
- Define basic performance metrics and behaviors of interest
- Understand the basic factors in qualifying and prioritizing organizational analytic opportunities
- Recognize primary strategic and tactical pitfalls that plague the majority of analytic implementations
- Proceed efficiently into any course within Predictive Analytics & Data Mining course series with the required baseline knowledge

Topics

- Organizational Decision Modeling
- Enhanced Resource Allocation
- Mathematical Models
- Goal Driven Analytics
- Incremental Development

- The Critical Design Issue
- 3-Step Project Design
- The Four Core Project Types
- Analytic Opportunity Identification
- Wrap Up

Audience

- **All Predictive Analytics & Data Mining Course Registrants** in order to arrive with a general overview and solid baseline underfoot, ready to dive directly into the interactive work-along sessions of the classroom or on-line productions
- **Training Evaluators** who wish to more closely verify that the general content and approach is aligned with their training objectives prior to registering for the fee-based classroom or on-line events
- **Technology Investigators** who seek an efficient orientation to actionable analytics to prioritize the practice among other organizational business intelligence objectives
- **The Analytically Curious** who desire additional perspectives on the topic

Prerequisites

There are no prerequisites for this course.

Duration

Four hours

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Course Outline

I. Organizational Decision Modeling
   A. The Three Perspectives
   B. Transactional Relationships
   C. Statistics versus Predictive Analytics: Complimentary Technologies
   D. Modeling Reality

II. Enhanced Resource Allocation
   A. Enhanced Resource Allocation
   B. Common Conceptualization
   C. The Decision Process
   D. Who's Next?

III. Mathematical Models
   A. A Simple Development Example
   B. Key Software & Algorithms
   C. Components of a Formula
   D. Algorithms Revisited
   E. Modeling Human Behavior

IV. Goal Driven Analytics
   A. A Simple Example
   B. Issues with Large Data Sets
   C. Goal Driven Analysis
   D. Resource Allocation
   E. Organizational Performance Metrics
   F. Meeting Organizational Objectives
   G. Consistent Strategy

V. Incremental Development
   A. Enhanced Performance: An Incremental Strategy
   B. Stage 1P: The Positive Benefits Models
   C. Stage 1N: The Negative Impact Models
   D. Stage 2: Conflict Resolution
   E. Stage 3: Modeling Across the Continuum
   F. Stage 4R: Resolution Enhancement
   G. Stage 4P: Precision Enhancement
   H. The Project Team
   I. Allocation of Effort

VI. The Critical Design Issue
   A. Designing a Future Perspective
   B. Defining a Forecast Window
   C. Required Changes to the Data Sandbox
   D. As Was

VII. 3-Step Project Design
   A. Train
   B. Test
   C. Validate
   D. An Example Design

VIII. The Four Core Project Types
   A. Forecasting: Estimating a Future Value
   B. Classification: Estimating a Future Category
   C. Time Series: Estimating the Next Step in a Sequence
   D. Clustering: Identification of Mathematically Correct Groups

IX. Analytic Opportunity Identification
   A. Organizational Metrics
   B. Performance Metrics
   C. Behavior of Interest
   D. Scarce Resources

X. Wrap Up
   A. Parting Thoughts & Tips
   B. Looking Ahead to the Primary Courses