

MICROSOFT PROFESSIONAL

Object Thinking

David West

Object Thinking

David West

Object Thinking

Table of Contents

Cover

Copyright page

Table of Contents

Acknowledgments

Preface

A Different (and Possibly Controversial) Kind of Software Book

Paths and Destinations

Who Should Read This Book

How This Book Is Organized

Introduction

Curiosities

The People Issue

The Need for Better Developers

Producing Better Developers

Object Thinking

XP and Object Thinking

Chapter 1: Object Thinking

Observing the Object Difference

Object Thinking = Think Like an Object

Problem = Solution

Object Thinking and Agile Development Practices

Values

Table of Contents

Selected Practices

Thinking Is Key

Software Development Is a Cultural Activity

Onward

Chapter 2: Philosophical Context

Philosophy Made Manifest
Duelling Languages

SIMULA

C++

Smalltalk

Formalism and Hermeneutics

Postmodern Critiques

Chapter 3: From Philosophy to Culture

Four Presuppositions

One: Everything is an object.

Two: Simulation of a problem domain drives object discovery and definition.

Three: Objects must be composable.

Four: Distributed cooperation and communication must replace hierarchical centralized control as an organizational paradigm.

Object Principles
Software Principles

Cooperating Cultures

Chapter 4: Metaphor: Bridge to the Unfamiliar

The Lego Brick Metaphor

The Object-as-Person Metaphor

Software as Theater; Programmers as Directors

Ants, Not Autocrats

Two Human-Derived Metaphors

Inheritance

Table of Contents

Responsibility

Thinking Like an Object

Chapter 5: Vocabulary: Words to Think With

Essential Terms

Object

Responsibility

Message

Interface (Protocol)

Extension Terms

Collaboration and Collaborator

Class

Class Hierarchy (Library)

Abstract/Concrete

Inheritance

Delegation

Polymorphism

Encapsulation

Component

Framework

Pattern

Implementation Terms

Method

Variable

Late/Dynamic Binding

Auxiliary Concepts

Domain

Business Requirement

Business Process Reengineering

Table of Contents

Application

Chapter 6: Method, Process, and Models

Two Decades of Object Methodology

Purpose and Use of Method

A Syncretic Approach

Models

Semantic Net

Object Cubes

Interaction Diagram

Static Relation Diagram

Object State Chart

Chapter 7: Discovery

Domain Understanding

Domain Anthropology

Object Definition

Heuristics

Chapter 8: Thinking Toward Design

Object Internals

Knowledge Required

Message Protocol

Message Contracts

State Change Notification

Object Appearance

Occasions Requiring an Appearance

Object State, Object Constraints

Chapter 9: All the Worlds a Stage

Static Relationships

Table of Contents

Is-a-Kind-of Relationship

Collaborates-with Relationship

Situational Relationship

Dynamic Relationships

Scripts

Event Dispatching

Constraints

Self-Evaluating Rules

Implementation

Methods

Knowledge Maintenance Objects

Development at the Speed of Thought

Chapter 10: Wrapping Up

Vexations

The Impedance Mismatch Problem

A Problem with GUIs

Extensions

Frameworks

Object-Based Evocative Architecture

ProvocationThe Future of Objects

Bibliography

Index

About the Author