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UNIVERSIDAD DE BUENOS AIRES
FACULTAD DE CIENCIAS EXACTAS Y NATURALES

1. DEPARTAMENTO: Computación
 2. CUATRIMESTRE: Segundo de 1997.
 3. ASIGNATURA: DISEÑO DE APLICACIONES USANDO OBJETOS Y REGLAS
 4. CARRERA: Licenciatura en Ciencias de la Computación
 5. CARACTER DE LA MATERIA: Optativa
 6. NUMERO DE CODIGO DE CARRERA: 18
 7. NUMERO DE CODIGO DE MATERIA:
 8. PUNTAJE: 1 punto (planes 87 y 93)
 9. PLAN DE ESTUDIOS AÑO: 1987 y 1993.
 10. DURACION DE LA MATERIA: Cuatrimestral
 11. HORAS DE CLASE SEMANAL:
a) TEORICAS 15 HS. c) PROBLEMAS HS.
b) LABORATORIO d) SEMINARIOS
 12. CARGA HORARIA TOTAL: 15 HORAS
 13. ASIGNATURAS CORRELATIVAS: Conocimientos básicos de diseño y análisis de sistemas.
 14. FORMA DE EVALUACION: Examen Final
 15. PROGRAMA Y BIBLIOGRAFIA: Adjuntas a esta hoja
- FECHA: 1/11/97

PF

Dr. Piero Fraternali
Firma y Aclaración
del Profesor Titular

[Handwritten Signature]

Firma del Director
y Sello Aclaratorio

Lic. IRENE LOISEAU
DIRECTORA
DEPTO. DE COMPUTACION
F. C. E. y N. UBA



T3 "DISEÑO DE APLICACIONES USANDO OBJETOS Y REGLAS"

PROFESOR: Dr. Piero Fraternali

PIERO FRATERNALI has received a degree in Electrical Engineering from Politecnico di Milano in 1989, and a PhD in Computer Science from Politecnico di Milano in 1994. He is professor of Software Engineering at Politecnico di Milano. He acted as a consultant in information systems development projects since 1990. His main research activities are in the areas of advanced database technology, CASE systems, and inter- and intra-net information systems.

PROGRAM:

The course presents the IDEA Methodology, a novel methodology for the development of information systems. The IDEA Methodology addresses the analysis, design, prototyping, and implementation of database applications, with a special focus on the use of advanced features of database technology, and specifically of object orientation, deductive rules, and active rules (triggers). The distinguishing approach of the IDEA Methodology is the emphasis on KNOWLEDGE INDEPENDENCE; by this term, we indicate the ability of extracting semantic knowledge from applications, normally encoded in a procedural format (programs), and placing it into the database schema, encoded declaratively in the form of objects, methods, and rules; in this way, knowledge is system-enforced, shared by all applications, and can be maintained and evolve more easily. An integrated tool environment, developed at the Politecnico di Milano, supports the various phases of the IDEA Methodology, with special emphasis on active rules. The IDEA tools assist schema design, active rule generation, rule analysis, application prototyping, debugging, browsing, and the mapping active rule applications from the IDEA design language Chimera into Oracle (Version 7.2), a popular commercial relational product supporting triggers. These tools will be demonstrated during the tutorial.

The IDEA methodology is described in the book "Designing database applications with objects and rules: The IDEA Methodology", that will be published by Addison-Wesley in the beginning of 1997 (most likely it will be available at the time of the tutorial). It is also described in a number of recent publications, listed below. The IDEA methodology official Web site can be seen at URL <http://www.elet.polimi.it/idea>. In addition, by time of the tutorial, two additional initiatives will be completed: the IDEA WEB LAB, an Internet site featuring a JAVA implementation of the IDEA design environment (now under development at URL <http://www.txt.it:5858>); and the IDEA CD-ROM, a multimedia tutorial of the methodology.

The IDEA Methodology is one of the main results of the IDEA project, a four-year Esprit Project sponsored by the EC with academic, research, and industrial partners from six countries. Several case studies and experiences of use by the industrial partners have influenced the development of the methodology. The proposed tutorial will feature an extensive tour of the IDEA Methodology and its supporting environment and initiatives.

The following topics will be covered:

INTENDED AUDIENCE

The tutorial is addressed to students, researchers, system analysts, designers, and implementors. The tutorial is designed so as to attract the interest of a large community of people (both from industry and from academia) which are looking forward to applying new design abstractions, relative to object and rule-based approaches, in the context of current database technology.

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CLASSWARE

The course may include a class project to be developed by attendees with the CASE Tools supplementing the IDEA Methodology. The typical project consist in developing an small application from requirements analysis to implementation in Oracle according to the IDEA process. The following topics will be covered:

INTRODUCTION AND MOTIVATION

OVERVIEW OF THE IDEA METHODOLOGY

PRESENTATION OF A CASE STUDY THE IDEA MODELS:

THE OBJECT MODEL

THE DYNAMIC MODEL

THE CHIMERA MODEL AND LANGUAGE

THE IDEA PROCESS

ANALYSIS

DESIGN

SCHEMA DESIGN

ACTIVE & DEDUCTIVE RULE DESIGN

PROTOTYPING & VERIFICATION RULE ANALYSIS

IMPLEMENTATION

THE IDEA TOOLS

THE DESIGN ENVIRONMENT

IADE

ARACHNE

ARGONAUT

PANDORA

THE PROTOYTPING ENVIRONMENT

THE CHIMERA EXECUTION ENVIRONMENT

SUMMARY AND CONCLUSIONS



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