Course : Campus Atlas - Object-oriented programming

Practical course - 3d - 21h00 - Ref. LAB
Price : 1940 CHF E.T.

NEW

Cette formation a pour objectif de faire découvrir la programmation objet aux développeurs formés aux techniques procédurales. Elle présentera les concepts fondamentaux de la programmation orientée objet et les techniques d'implémentation qui leur sont liées. La théorie sera mise en pratique à travers le langage Java sur des exemples simples qui permettront aux développeurs de comprendre les différents avantages de ce paradigme de programmation. Enfin, le module permettra de découvrir comment intégrer l'IA au sein d'un développement logiciel objet pour gagner en productivité.

Teaching objectives

At the end of the training, the participant will be able to:

- Understand the principles and specifics of object-oriented programming
- Moving from a functional to an object-oriented approach
- Discover the impact of AI on object-oriented programming
- Implement a simple project integrating object-oriented programming and AI

Intended audience

OPCO Atlas members: developers, analysts, project managers wishing to move into object-oriented development technologies.

Prerequisites

Basic knowledge and experience in application design and software development.

PARTICIPANTS

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PREREQUISITES

Basic knowledge and experience in application design and software development.

TRAINER QUALIFICATIONS

The experts leading the training are specialists in the covered subjects. They have been approved by our instructional teams for both their professional knowledge and their teaching ability, for each course they teach. They have at least five to ten years of experience in their field and hold (or have held) decision-making positions in companies.

ASSESSMENT TERMS

The trainer evaluates each participant's academic progress throughout the training using multiple choice, scenarios, hands-on work and more.
Participants also complete a placement test before and after the course to measure the skills they've developed.

Practical details

Hands-on work

60% practical - 40% theory.

Teaching methods

Formation 100 % classe virtuelle et 100% présentiel. Pour optimiser le parcours d'apprentissage, des modules e-learning peuvent être fournis avant et après la session présentielle ou la classe virtuelle, sur simple demande du participant.

Course schedule

1 Algorithmics - Think before you design - Pre-training digital learning content

- Introduction to algorithms.
- Basic instructions in pseudo-code.

Digital activities

Dans cette formation en ligne, vous apprendrez à raisonner avant de concevoir un programme en découvrant les bases de l'algorithmique. Vous étudierez notamment les instructions fondamentales en pseudo-code.

2 Basic syntax

- Basic types.
- Operators.
- Type conversions.
- Control structures.
- Enumerations.

Hands-on work

Development of simple games.

3 Object concepts

- What is an object, a class?
- Attributes, methods, identity.
- From concepts to code.
- Associations.
- Inheritance.
- Polymorphism.

Hands-on work

Definition puzzle.

4 Objects, classes and arrays

- Declare a class, its attributes and methods.
- Static and final methods.
- Static and final attributes.
- Write constructors.
- Create and manipulate an object.
- Manipulate tables.

Hands-on work

Transcription of a business problem into an object model.

TEACHING AIDS AND TECHNICAL RESOURCES

• The main teaching aids and instructional methods used in the training are audiovisual aids, documentation and course material, hands-on application exercises and corrected exercises for practical training courses, case studies and coverage of real cases for training seminars.
• At the end of each course or seminar, ORSYS provides participants with a course evaluation questionnaire that is analysed by our instructional teams.
• A check-in sheet for each half-day of attendance is provided at the end of the training, along with a course completion certificate if the trainee attended the entire session.

TERMS AND DEADLINES

Registration must be completed 24 hours before the start of the training.

ACCESSIBILITY FOR PEOPLE WITH DISABILITIES

Do you need special accessibility accommodations? Contact Mrs. Fosse, Disability Manager, at psh-accueil@orsys.fr to review your request and its feasibility.

5 Inheritance, polymorphism and encapsulation

- Inheritance with Java.
- Type conversions.
- Polymorphism.
- Packages.
- Encapsulation.

Hands-on work
Real-life project implementation.

6 Interfaces, base classes and exceptions

- Use Java interfaces.
- Implement an interface.
- Specify and use exceptions.
- Lift an exception.
- Use polymorphism with exceptions.

Hands-on work
Enrich the project with the knowledge acquired during the sequence.

7 AI integration

- AI families.
- Generative AI, strengths and weaknesses.
- FDI boosted by AI.
- Project integration.

Hands-on work
Integrating AI into the developer's workflow.

8 UML - Learn to model with diagrams - Post-training digital learning content

- Fundamental concepts
- Structural diagrams
- Behavioral diagrams

Digital activities
In this online training course, you'll discover the fundamentals of object-oriented design, the different UML structural and behavioral diagrams, as well as their objectives and uses. You'll also learn how to apply UML to efficiently specify, visualize and document a computer system, using a design example.

Dates and locations

REMOTE CLASS
2026 : 31 Mar., 23 June, 29 Sep., 1 Dec.