

Course Name	IBM CE - Fundamentals of Embedded Software development using IBM Rational Rhapsody (Java)
Course Code	RERRSCFIN
Course Duration	50 Hours
About the Technology	<p>IBM® Rational® Rhapsody® family provides collaborative design and development for systems engineers and software developers creating real-time or embedded systems and software. Rational Rhapsody helps diverse teams collaborate to understand and elaborate requirements, abstract complexity visually using industry standard languages (UML, SysML, AUTOSAR, DoDAF, MODAF, UPDM), validate functionality early in development, and automate delivery of innovative, high quality products.</p> <p>The IBM® Rational® Rhapsody® Developer environment provides full behavioral code generation, rapid prototyping, visual debugging and animation helping to execute and validate the behavior of embedded systems and software earlier to help manage complexity and mitigate project risk.</p> <ul style="list-style-type: none"> • Visual software development of embedded software based on UML and SysML • Animation brings statecharts, activity and sequence diagrams to life for design level debugging and early validation • C, C++, Java, and Ada code generation of statecharts can improve developer productivity. • Model multicore affinity, generate code targeting multicore processors and visualize multicore execution to assist in reducing the complexity of developing parallel applications • Generate complete application including build files for leading embedded and real time development environments to help get started quickly • Visualize C# code from Microsoft Visual Studio and generate C# code from Rational Rhapsody • Integration with Eclipse development environment for integrated code, model and debugging software development environment • Import existing C, C++, Java or C# code for visualization and documentation • Dynamically synchronize code and model changes to help manage changes • Requirements traceability to design, code and test in integrated environment • Develop software on host before target hardware is available to help meet schedules • Simplified execution framework with ARINC 653 adapter support facilitates development to safety critical development standards • Architect Data Distribution Service for Real-Time Systems (DDS) applications to manage the complexity of interconnected components • Automate documentation across product lifecycle with Rational Publishing Engine integration • AUTOSAR support from concept to code to help automate development of automotive applications

	<ul style="list-style-type: none"> • Leverage MARTE profile for architecting multi core applications • Collaborate using model-based differencing and merging features, including an integration with the Jazz- based IBM® Rational® Team Concert solution • Automate testing and validation with Rational Rhapsody TestConductor Add On • Three different Rational Rhapsody Developer editions are available: • Rational Rhapsody Developer for C++, C and Java environment, the most popular, is for users interested in C++, C, Java, and C# development. • Rational Rhapsody Developer which supports development for all supported languages. • Rational Rhapsody, DoDAF, MODAF, and UPDM Add On assists in delivering compliant and consistent architectures for these architectural frameworks support with ability to develop your own profiles
<p>About the course</p>	<p>This course allows you to gain skills to develop applications very rapidly using the core capabilities of IBM® Rational® Rhapsody® Developer for Java™ and the Unified Modeling Language (UML). Using hands-on exercises that replicate actual applications, you forge a strong UML and Rational Rhapsody foundation and learn how to optimally leverage the solution's automation of software development activities and artifact generation capabilities.</p> <p><i>Upon completion of the course, students will be able to:</i></p> <ul style="list-style-type: none"> - Rapidly educate your team in the best practices for Rational Rhapsody-based development - Gain familiarity with the Rhapsody and Java environment through rapid, hands-on structural and behavioral code generation and design-level debugging - Review and solidify UML foundations, and then apply these concepts using the Rational Rhapsody tool's synchronized model and code editors - Master the Rational Rhapsody product architectural details in order to customize and fit your specific needs as a software developer
<p>Audience</p>	<p><i>This instructor-led, classroom course is intended for the following audience</i></p> <ul style="list-style-type: none"> • Software engineers • Project managers and technical leads • Software-level systems engineers • Anyone involved in the specification, architectural analysis, and design of software intensive real-time systems <p>Students of</p> <ul style="list-style-type: none"> – Engineering (CS, IT, ECE, EEE)- 3rd Year – MCA – 1st year Year – BSc, BA -2nd Year

Pre-Requisites	<p><i>To benefit from this course, students should have the following skills or experience:</i></p> <ul style="list-style-type: none"> ▪ Working knowledge of software engineering concepts and process ▪ Familiarity with the Java programming language ▪ Rudimentary understanding of UML is desired but not required <p>Pre-requisites courses:</p> <ul style="list-style-type: none"> - IBM CE Object -Oriented Programming using Java
Contents	<p><i>This course covers the following topics:</i></p> <ul style="list-style-type: none"> • UML fundamentals including UML overview • Essential tool training: basic Rational Rhapsody • Essential tool training: case study • Essential tool training: advanced Rational Rhapsody
Applicable IBM Certification	<p>IBM Certified Solution Designer - Object Oriented Analysis and Design, vUML 2</p> <ol style="list-style-type: none"> 1. Test 000-833 - Object Oriented Analysis and Design - Part 1 (Analysis) 2. Test 000-834 - Object Oriented Analysis and Design - Part 2 (Design)
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