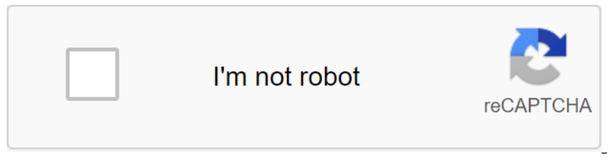

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Have you ever wondered how software architects, design engineers and business analysts sketch and pull out their plans for a software system? In this computer science course, you'll get a deep understanding of the Unified Modeling Language (UML) charts that are used to visualize the conceptual design of the system. You'll learn about UML chartes and how they are used to display business domain structure by showing business objects, their attributes, and associations. Taught by a teacher with years of experience in requirements design and domain modeling, this course will give you the skill of a deep understanding of the UML chart and will allow you to judge the functional compliance of the UML chart as a blueprint for the development of the corporate information system. The Single Modeling Language (UML) has become a sought-after skill in software development and engineering. In fact, some of today's best jobs, i.e. business analysts, enterprise architects, and developers, technical consultants and solution architects, require UML knowledge. Sign up today and gain knowledge in the in-demand skills that will help set you apart from your competitors. A deep understanding of the UML Class Basics of Domain Modeling chart and its importance are the main building blocks of class charts: concepts of class, attribute and association Advanced Concepts of Inheritance and AssociationClass Week 1: Introduction and UML Class Chart Basics (part1) Introduction of what data model is, why data modeling matters, and concepts of modeling languages. Introduction to the concepts of Class and Attribute. Week 2: UML Chart Basics (Parts 2 and 3) Introduction to the Concept Association and its various options: unitary and thorn associations and aggregation. Learn to navigate in a larger UML chart. Week 3: UML Advanced Topics Introduction to the Concept of Inheritance and Learn to Read the Model With Inheritance. Introduction to the concept of AssociationClass and training disguised association. Get an instructor signed a certificate with the institution's logo to check your accomplishments and increase your employment prospectsAdd certificate on your resume or resume, or post it directly on LinkedInGive myself with an additional incentive to complete the course of EdX, a nonprofit that relies on proven certificates to help fund free education for all global quotas from students from previous runs: I found this course extremely useful in learning different class diagram concepts. Thanks to the professor and the people who helped make this course successful. I really enjoyed the content of the course as I enjoyed the alternation between the theory of the video and the quiz! helped reassure me that I understood the material. 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Week 2: UML Chart Basics (Parts 2 and 3) Introduction to the Concept Association and its various options: unitary and thorn associations and aggregation. Learn to navigate in a larger UML chart. Week 3: UML Advanced Topics Introduction to the Concept of Inheritance and Learn to Read the Model With Inheritance. Introduction to the concept of AssociationClass and training disguised association. 0.0 Ranking Based on 0 Reviews Start your review of UML class charts for software development Get personalized course recommendations, track items and courses with reminders, and more. Sign up for free when IBM acquired Rational Software Corp., the company gained the expertise of two technologists who were instrumental in the development of the Single Modeling Language (UML). Grady Booch, a former Rational CTO who is now an IBM employee, is considered the father of UML because the standard is based on the modeling language he created. Bran Selic, Distinguished Engineer, Rational Software IBM is co-chair of the task force that will refine the new UML 2.0 2.0 standard Object management teams. Booch and Selic recently spoke with Computerworld about UML 2.0, which is expected to be completed by the middle of the year. What are the main differences between UML 1.5 and the upcoming version 2.0? Selic: In 1.5 we presented the so-called action semantics, which is a way of modeling some of the small details that come with showing models, maybe even up to the level of individual instructions. Along with this came the idea of describing what it really means in terms of execution time. How does this thing work? What does the program that this thing simulates look like? And that introduced what was a key element of UML 2.0 -- a very precise definition of semantics or the meaning of these models in the sense that you can now, for example, take the UML model and directly translate it, in some cases, into programs directly. It's part of a much more general thing called Model Driven Architecture (MDA), which shifts the focus from software to model, because models are much closer to how people who write apps, or at least use apps, think about their problems. This is a higher level of abstraction. One of the main contributions to UML 2.0 was support for Model Driven architecture and model-based design. This requires slightly more UML accuracy than was originally in the specification.... Another that I would like to highlight as a major influence is the ability to model very large heterogeneous systems, so that one could describe the architecture of these systems quite briefly. The UML 2.0 development project started almost three years ago, and we are now in the final stages of adopting the standard. We've released one version so that people who build tools that meet the standard can look at it and come back with feedback. Both various researchers and other people who are interested in UML and model-driven development look at the specifications and give us feedback. For a corporate developer who uses UML 1.0, how will UML 2.0 make their lives better? Solic: They have a choice. We were careful when we developed 2.0 that people who want to use UML as they used it to date are pretty safe and they don't necessarily have to move up to new features. The language is designed in such a way that you don't need to know about new things to use old things. However, they will undoubtedly benefit from the ability to scale some models to combat heterogeneous and distributed environments. If they had this need before, it would have been much easier for them to use UML now. They could just move up, starting to gradually introduce some of the new concepts as needed. You can take the parts of UML 2 that you need and refuse or not use parts that you don't need. Many that the introduction of UML was 10% in the 10% range. Why do you think it was slow? Selic: One of the most important factors is that there are huge investments in existing technologies, both corporate and personal, and switching to UML requires some additional cost and investment at the top of the existing one. There are also cultural issues. But at the end of the day, I'd say that UML development and model should happen because we can't develop software the way we develop it. The systems we are trying to build are much more complex than the systems we built 30 years ago. I think MDA and UML 2.0 support the ability to move to a higher level of abstraction, so all that implementation stuff doesn't go in the way. UML does this. It abstracts a lot of basic implementation, programming language stuff and so on. The second aspect of this, which is related to MDA, is automation. For example, the ability to take models and automatically generate implementations from them is a key development theme for a model-driven development, and that's what UML has been adjusted for. So adoption needs to increase and we are certainly seeing other major suppliers who understand that a model driven development is what needs to happen. Booch: Ten percent is not necessarily a bad thing if we believe that the global developer market according to IDC is about 13 million or so IT professionals. Ten percent is a good healthy number. It's a great insight into the sense that we're dealing here with a community of people who are worried about abstraction and design, and if we limit ourselves to just that community, I dare say that UML has a tremendous penetration. If you look at the community as a whole, maybe it's 10%, 20% we've seen in some other cases. ... If we look at accepting modeling not only ibm but Microsoft and the Sun Jackpot Project, in many ways this is a huge test of the concept of modeling as a core technology because each of these vendors recognizes that the systems are inherently complex. And the way we're progressing in addressing complexity by raising the level of abstraction. Ergo, modeling becomes fundamental, and UML is really the open standard of choice for modeling. Do you think the Microsoft Whitehorse project is contributing to a broader development implementation driven by the model? Booch: I'm glad that Microsoft has recognized that modeling is a good thing. ... Rational has a very long relationship with Microsoft, providing modeling tools with UML in the visual studio context. In what types of companies and situations have we seen the greatest use to date? Booch: We can tell some great stories about some of UML's predecessors, and we can hold that up to the stories in time using UML just for real-time use of systems. We're talking on our cell phone. medical electronic devices and the like. ... At the other end of the spectrum, we see that UML is used by business professionals who are engaged in business rules. In fact, this is an area where we spend energy to provide the tools for business rules in the form of UML. As for deployment, we see the same from the point of view of people who deal with complex topology. Game scenarios and grid computing is an area where I've seen some traction in this space. At a completely different end of the spectrum, UML is pretty much the language of choice for templates. Selic: My biggest experience was in a built-in domain in real time. The reason that the community has adopted it so broadly and enthusiastically is because their problems are usually very complex because they have to deal with a world that is very simultaneous, unpleasant, things fail and so on. So they were looking for help. ... But what we are seeing now is that this complexity is no longer just what belongs in the built-in world, but for example in the business world with things like web services and so on. So I've seen an increase in the need for something like this even in areas that have traditionally been thought of as: Oh, it's just cobol. The difference between so-called real-time systems and business systems and data processing systems is diminishing. How much automatic code generation can users expect? Booch: I want to talk about the premise, which is one of the main advantages. It reminds me a lot of some of the early days of OO object-oriented development when we talked about the main promise of OO was reuse, and a few years later, everyone was all up in arms in the press because, oh, reuse didn't happen and look how awful it was and see how we overpromised. This is really not the main promise where UML is headed. It goes back to the broader theme that things are complicated. We are advancing in our discipline, increasing the level of abstraction. We see it with our language and our methods and the like and that's exactly what happens with UML. This allows us to raise the level of abstraction. This is the main thing we are looking for with UML. Now the issue of convergence with the code is a huge advantage, but I would not assume that this is the main thing that UML should judge against. Selic: In terms of what people can expect, our experience is that it's the whole spectrum. People can use UML as what someone once called an object sketch - just a way of describing high-level ideas, not necessarily talking about if statements and the like, and then using it to communicate with the project team and testing group and even, perhaps, with customers and so on. This is a very informal way of using it. There are many examples of full code generation. I am systems that, for example, generate a generation implementation from one UML model in the order of millions of lines of code involving hundreds of developers and in some very complex areas. There may be situations where you don't want to have a full generation of code because there are outdated systems that need to be taken into account. ... So people can expect anything from zero to 100% depending on their circumstances. Can you give examples where people got 100% code generation? Selic: I saw this in telecommunications software, and I also saw it most recently in India, where it is used in business process modeling, very successfully at a very high level of abstraction. With the help of MDA and UML, do we ever get to the point where business analysts can write their own applications? Booch: All that really changes is the language of expression. There is a boost in the market that says that creating a successful software-intensive system requires a larger set of stakeholders than we have been used to in the past. The web space just kind of hit us in the face with this. In the early days, you'll see hardcore code warriors writing graphical user interfaces, and it was the perfect scene from Dilbert, because it wasn't their skills, and vice versa. You will find graphic students, graphic experts who would try to write hard code and this would also be a failure. So ultimately we got to the point where we realize: Oh, that's how these different people work together. Well, in the business rules space, you have another stakeholder, and so the question now is how can I get these people to play well as well as with the safety of people, network people and all that. This is a fundamental problem in many development organizations. Does UML help? One of the key values of UML in this sense is a common language that allows people from multiple disciplines to talk to each other. Will we ever get to the point where all these people can write in their own language and do magical things? My personal opinion is that it's a few years old, and even if it were for a few years, the technology would get quite more sophisticated that it's hard for me to judge for it. A what.