UML (Unified Modeling Language) Software Companies +5

Do prestigious software companies regularly use UML?

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26 Answers

Cris Fuhrman

Answered Aug 11, 2014

Originally Answered: Do Internet companies like Google, Facebook and Dropbox use UML?

Should you use UML? It depends on the complexity and what you expect from UML.

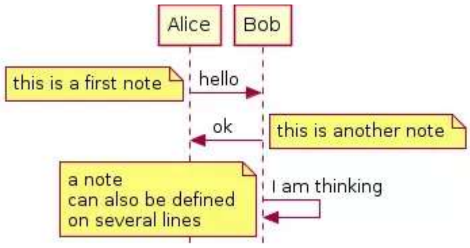
Here's a totally non-scientific method, but I'll use it anyway: a search today for "Software Engineer" positions on a popular recruiting web site revealed more than 1000 in Silicon Valley. However, if you filter that search with the words "UML" in the offer, the market reduces to just 20 jobs! From the descriptions, they tend to be more senior positions. Conclusion: you won't need to learn UML to find a job. You might need it in a senior position at Amazon or Google Android (based on a few of the companies I saw in the offers).

Is it useful if you care about code quality? I think UML is going to help you improve your *design* at the modular (class) level or higher -- not because UML has some magic power, but because it helps you to abstract the important things at this level, leaving out the *tedious details* you'll find throughout the code. Models are about abstracting the essential.

UML class diagrams show easily how coupling is reduced in a design after applying a design pattern (which are usually documented with UML). I'd postulate it's going to be harder to use OO design patterns in a team if you don't know UML. But it's still only a model. "Bubbles don't crash" is a famous phrase from Bertrand Meyer, which means you'll still have to be good at coding your design. MDA/MDD isn't ready for most of the market yet.

Is there any other lightweight software...? UML as a whole is not lightweight, but you can use it in a lightweight manner. Whiteboard sketching is very lightweight and I find allows a different creativity than with my hand on the mouse looking at a screen. A couple of tools I like for doing lightweight UML are UMLet and PlantUML. The latter even has an add-on for Google Docs called PlantUML Gizmo (disclaimer - I am the developer, but it's free software I developed as a "community service" in my role as a university professor).

Here's an example of UML produced by PlantUML:



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A couple of final comments:

- As another answer pointed out, the industry is craving many more concrete developers (who are manufacturing software as a *commodity*) than classically trained (?) software engineers (as we teach it at a university). The truth is, if a software company doesn't get some version 1.0 of their product out the door, it won't matter if the code is maintainable, well-designed, etc. Commoditization changes the game a lot, and software engineering education doesn't react that quickly to the trends (which isn't a bad thing necessarily, as some trends fade out). The standard for "competent" software engineers has lowered because the demand is high. This is not a reason to dismiss UML in my opinion. I go back to my job-search anecdote. Do you want to get a programming job just anywhere in Silicon Valley, or work for Google on the Android team?
- UML puts the abstractions into focus (which is good for design and architecture) but sometimes you have to "Just code it™" (because the devil is in the details). Many developers who learn to use UML have trouble switching back and forth, or balancing the attention they put at various levels. Working at various levels of abstraction is actually pretty hard. Spending too much energy on the abstractions (neglecting the code) won't help the company get out that version 1.0 (think "analysis paralysis"). You might possibly lose your job if you don't produce enough code that actually runs. So, because of market pressures, the difficulty of the task and lack of easy-to-use (and affordable) tools, modeling and design go by the wayside. Hence, the appearance that UML isn't needed.

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Charles Rivet, Power systems engineer turned to the dark side of software and systems.

Answered Feb 11, 2014

Originally Answered: Is UML still relevant?

UML is still relevant, but it is definitely not for everyone.

Over the years, UML has moved from being a notation (originally trying to unify varied notations such as OMT, Booch, Objectory, Harel, Shlaer-Mellor, etc.). At the beginning, the semantics were rather loose, which meant that many (competing and conflicting) gurus got to push their views, causing some fragmentation.

In its current incarnation, the semantic level and formality of UML has increased - and so has its complexity. This has, IMHO, to the emergence of a meta-model to represent the business of software development (and system development through profiles). This means that it has both become more complex and more powerful.

Because of this power and complexity, smaller organisations will find it a challenge to adopt the full notation, even as parts of the notation are still very much relevant, depending on their needs. One example, as already mentioned, is Scott Ambler's excellent work in trying to reconcile modeling (and UML) with Agile approaches in his Agile Modeling web site (Effective Practices for Modeling and Documentation).

Where is can be very powerful is in the development of large, complex systems, often composed of both hardware and software, and especially where product lines are concerned. In such situation, the investment in UML tools and their usage will often productivity. If you are looking for an example of an UML-based DSML, you can take a look at SysML (also on the OMG web site). SysML is a actually a superst of a subset of UML geared at solving a particular issue. Such an approach can also be used for specific domains, such as embedded software, which can often be represented as collaborating state machines.

The biggest advantage to DSMLs is that they raise the level of abstraction. Just asssembler is an abstraction of binary and C/C++ are abstractions of assembler, a DSML would become an abstraction of a model that would only map to a 3GL.

I have been doing modeling in various forms for 25 years (starting with Shlaer-Mellor) and In the past 17 years (since UML was released at v0.8), I have worked with companies that have used UML successfully, even to the point where the model was the main asset and not the generated code (just like C++ vs. binary), but none were doing it for small and/or single software projects where the tools would have been too expensive and the ROI uninteresting. However, today, there are many low-cost and even free UML modeling tools.

I also have an issue with using UML only for documenting - unless some form of visualisaiton is used. I am a big proponent of a single source of information and if your code and your UML model differ, it is useless and it is usually costly to maintain.

Is UML relevant? Yes, but not for everyone and not for every project.

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Philipp Müns, Core Developer @ Serverless Inc. / JavaScript lover

Answered May 15, 2012

Originally Answered: Is UML still relevant?

Hey there,
I'm currently writing my Bachelor Thesis in the field of Software-Engineering with UML. While writing the thesis, I'm having an internship at a large Company where we're implementing a web based portal solution.

In this project we're using the Rational Software Architect to store all information about the software in the model.

We're using a huge number of Plug-Ins and Pluglets which make it able to do great things with the data available in the model.
For example, we're able to generate Documents using data in the model with the help of the BIRT-Plugin.
Also Java Sourcecode-scaffolds can be generated, so that nearly 90% of the code is generated and the other 10% can be implemented by the programmers.

I was also very sceptical if UML is still relevant, but in very large project it's very useful and very cost saving because many things can be automated using pluglets or plugins in your modeling tool.

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Answered Oct 4, 2010

Originally Answered: Which startups in Silicon Valley use UML and how do they use it?

Using UML is good but it needs too much time to write it. I don't know how startups in general (not only in Silicon Valley) behave but I think they don't have enough time for it. Startups have to experiment everything to achieve success at early stage, sometimes they even have to do some crazy things. So I think UML and things like that aren't for startups.

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Jeff Nelson, Invented Chromebook, #Xoogler

Answered May 7, 2014

Originally Answered: Do Internet companies like Google, Facebook and Dropbox use UML?

UML was briefly in fashion in the late 90s, but it's largely disappeared.

These days, all software methodologies (regardless of their content) seem to be known by the same name: Agile.

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Shawn Hermans, Data Scientist at Bellevue University (2015-present)

Answered Sep 2, 2015 · Upvoted by Jeff Nelson, Invented Chromebook, #Xoogler

Originally Answered: Do Internet companies like Google, Facebook and Dropbox use UML?

I've had experience with tech-based startups and more traditional organizations. It might be an over simplification, but generally tech savvy companies don't really care about UML, whereas more traditional organizations (government, insurance, banking, etc..) seem to really like it.

In my experience there is no connection between the use of UML and production of quality software. If I was putting together my list of top things to improve code quality, UML would not make the top 10. Instead things like continuous integration, code reviews, style guides, unit testing, and documentation would rate much higher than UML diagrams.

Is there a lightweight replacement for UML? For the most part, I've seen engineers use UML-like notation on whiteboards without using the rigor of UML. If the diagram did not explain things in enough detail, then we would use pseudo-code. If that didn't work, then we would prototype out actual code. At the end of the day, a functional prototype is it own design document.

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Thiago De Campos Moraes, I was a Software engineer and then I got bored.

Answered Sep 10, 2015

Fabio Akita gave an excelent answer, but talking about Facebook to give anedoctal data point, UML is not really common to see around. That said I've seen some sequence diagrams used every now and then do discuss some user's interaction with one system. Nothing really strict in terms of UML specification, though.

1.5k Views

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Ajit Dusane, works at Siemens

Answered Jun 15, 2012

Originally Answered: Is UML still relevant?

Hello,

IMO, the relevance of UML is certainly increasing day by day. The trend getting set in the real time or embedded softwares is to **write** as less code as possible and **model** as much as possible and this is all possible just because of the tools like Rhapsody from IBM (http://www-01.ibm.com/software/a...) or Magicdraw (http://www.nomagic.com/) .Using this we can model the system and generate the code in any of the language as per our requirement.

1.3k Views · 4 Upvotes

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Basile Starynkevitch

Answered Apr 2, 2016

I would believe that UML is much less useful than claimed, and then I won't be surprized that even large software companies don't use it a lot.

UML is not very used for most open source software and that is significant. Notice that major free software projects (GCC, Linux kernel, Firefox, ...) have lots of contributions from employees of large corporations (Google, Apple, IBM, Intel, Oracle, ...), so if UML was so important to them, it would have been used in those projects.

I guess that UML is probably a bit used when a large corporation is subcontracting the development of some software component to another company.

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