UML Practice on California Software Industry

Welcome to our survey about the UML (Unified Modeling Language) practice in the California software industry. This survey is part of a research project in progress at Cal Poly, San Luis Obispo advised by Dr. Bruno da Silva. The results will allow us to further examine the frequency of use of UML, the benefits and drawbacks of using UML, whether or not issues like project domain or geographic region influence UML usage, and other additional research questions that will help us examine if UML really is the "lingua franca" of modeling in Software Engineering.

Your participation is anonymized and voluntary. Moreover, if you are part of our target population for this study and complete all the six sections of this questionnaire, you will be rewarded with a $10 Amazon e-Gift Card when the survey closes. Being as such, we expect only one response per participant and we reserve the right to discard any responses that we suspect as duplicates. Thank you for your contribution!

The approximate time to complete the survey is 8 - 10 minutes.

If you have any concerns about this survey or our research project, please e-mail us:
bcdasilv@calpoly.edu OR jnogle@calpoly.edu

* Required

Participant Profile -- Section 1/7

1. **What gender do you identify with?** *
   Mark only one oval.

   ◯ Male

   ◯ Female

   ◯ Prefer not to Answer

   ◯ Other: _____

2. **What is your age range?** *

Mark only one oval.

○ Under 18

○ 18 - 24

○ 25 - 29

○ 30 - 34

○ 35 - 39

○ 40 - 49

○ 50 - 59

○ 60 +

3. **For how long have you worked in Software Development?** *

Mark only one oval.

○ Less than 1 year

○ 1 - 3 years

○ 3 - 5 years

○ 5 - 7 years

○ 7 - 10 years

○ 10+ years

4. **What is your highest level of education achieved?** *

Mark only one oval.

○ High School Diploma

○ Trade/technical/vocational training

○ Associate Degree

○ Bachelor's Degree

○ Master's Degree

○ Professional Degree

○ Doctorate Degree

○ Other: _____

UML Familiarity -- Section 2/7

5. **Do you know what UML (Unified Modeling Language) is?** *
   Mark only one oval.

   ○ Yes

   ○ No   *Skip to question 35.*

UML Familiarity -- Section 2/7

6. **How would you explain to someone else what UML is?** *

   _____

   _____

   _____

   _____

   _____

UML Familiarity -- Section 2/7

7. **Have you utilized UML in real world software development projects?** *
   Mark only one oval.

   ○ Yes

   ○ No   *Skip to question 35.*

UML Familiarity -- Section 2/7

8. **How would you describe the cost effectiveness of UML based on your experience?** *

   _____

   _____

   _____

   _____

   _____

Work Location -- Section 3/7

9. **Do you currently work in the United States?** *

Mark only one oval.

○ Yes

○ No   *Skip to question 35.*

Work Location -- Section 3/7

10. **Do you currently work in the U.S. state of California?** *

Mark only one oval.

○ Yes

○ No   *Skip to question 35.*

Work Domain -- Section 4/7

11. **What domain/industry do you currently work in? (Select all that may apply)** *

Check all that apply.

☐ Commercial Software

☐ Commercial Hardware

☐ Consulting

☐ Retail

☐ Healthcare

☐ Banking/Finance

☐ Insurance

☐ Government

☐ Aerospace/Defense

☐ Telecommunication

☐ Education

☐ Entertainment

☐ Transportation

☐ Technology

☐ Services

☐ Open Source Development

☐ Freelance

☐ Other: _____

12. **What organization do you currently work for?**
    (Optional)

    _____

13. **What is the estimated size of your current organization (Number of employees)?** *

    Mark only one oval.

    - ( ) < 10
    - ( ) 10 - 100
    - ( ) 101 - 500
    - ( ) 501 - 1000
    - ( ) 1001 - 5000
    - ( ) > 5000

14. **What roles do you have in software development at your current organization? (Select all that apply)** *

    Check all that apply.

    - [ ] Requirements Engineer
    - [ ] Programmer (aka - Developer, Software Engineer, Systems Engineer)
    - [ ] Technical Consultant (aka - IT Consultant, Application Specialist)
    - [ ] Build Manager (aka - Build Specialist)
    - [ ] Software Architect (aka - Software Modeler)
    - [ ] Project Manager (aka - Project Leader)
    - [ ] Product Owner (aka - Product Specialist)
    - [ ] Testing/QA
    - [ ] Systems Analyst (aka - Solutions Specialist, Technical Designer)
    - [ ] Technical Support (aka - Operations Analyst, Problem Manager)
    - [ ] Hardware Engineer
    - [ ] Network Engineer (aka - Network Designer, Network Administrator)
    - [ ] Database Architect (aka - Database Administrator)
    - [ ] Security Analyst (aka - Security Engineer)
    - [ ] Other: _____

15. **Approximately how many software development projects have you participated in at your current organization?** *

Mark only one oval.

- ( ) < 1
- ( ) 1 - 2
- ( ) 3 - 10
- ( ) 10 +

16. **Of the projects you've participated in at your current organization, please describe the size of these projects (number of team members directly involved in software development) and how often you have been part of projects of that size** *

Mark only one oval per row.

	Never	Once or Twice	3 - 10 Times	More than 10 Times
< 5 Members	( )	( )	( )	( )
5 - 10	( )	( )	( )	( )
11 - 25	( )	( )	( )	( )
26 - 50	( )	( )	( )	( )
51 - 100	( )	( )	( )	( )
101 - 500	( )	( )	( )	( )
500 + Members	( )	( )	( )	( )

17. **Of the projects you've participated in at your current organization, please describe the size of these projects (estimated Lines of Code) and how often you have been part of projects of that size** *

Mark only one oval per row.

	Never	Once or Twice	3 - 10 Times	More than 10 Times
< 1,000 LOC	( )	( )	( )	( )
1,000 - 10,000 LOC	( )	( )	( )	( )
10,001 - 100,000 LOC	( )	( )	( )	( )
100,001 - 2,000,000 LOC	( )	( )	( )	( )
2,000,000+ LOC	( )	( )	( )	( )

UML Use -- Section 5/7

18. **Of the projects you've participated in at your current organization, for how many of those have you utilized UML for any purpose in your software development work?** *

Mark only one oval.

- ( ) < 10% of projects
- ( ) 10 - 50% of projects
- ( ) 51 - 90% of projects
- ( ) 91 - 100% of projects

19. **For what activities do you use UML in your software development work at your current organization? (list all)** *

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20. **Which Structural UML models have you used in your software development work at your current organization?** *

Mark only one oval per row.

	Never	Rarely	Sometimes	Often	Usually	Always
Class Diagram	( )	( )	( )	( )	( )	( )
Package Diagram	( )	( )	( )	( )	( )	( )
Object Diagram	( )	( )	( )	( )	( )	( )
Component Diagram	( )	( )	( )	( )	( )	( )
Composite Structure Diagram	( )	( )	( )	( )	( )	( )
Deployment Diagram	( )	( )	( )	( )	( )	( )

21. **Which Behavioral UML models have you used in your software development work at your current organization?** *

Mark only one oval per row.

	Never	Rarely	Sometimes	Often	Usually	Always
Activity Diagram	( )	( )	( )	( )	( )	( )
Sequence Diagram	( )	( )	( )	( )	( )	( )
Use Case Diagram	( )	( )	( )	( )	( )	( )
State Diagram	( )	( )	( )	( )	( )	( )
Communication Diagram	( )	( )	( )	( )	( )	( )
Interaction Overview Diagram	( )	( )	( )	( )	( )	( )
Timing Diagram	( )	( )	( )	( )	( )	( )

UML Effectiveness Opinion -- Section 6/7

22. **In your opinion, to what extent does UML modeling reduce the effort in writing/debugging code? (Optional)**

    Mark only one oval.

	0	1	2	3	4	5	
UML modeling does not reduce the effort in writing/debugging code	◯	◯	◯	◯	◯	◯	UML modeling greatly reduces the effort in writing/debugging code

23. **In your opinion, to what extent does UML modeling increase productivity in delivering software? (Optional)**

    Mark only one oval.

	1	2	3	4	5	
UML modeling does not increase productivity in delivering software	◯	◯	◯	◯	◯	UML modeling greatly increases productivity in delivering software

24. **In your opinion, to what extent does UML modeling increase the quality of the software being developed/delivered? (Optional)**

    Mark only one oval.

	1	2	3	4	5	
UML modeling does not increase software quality	◯	◯	◯	◯	◯	UML modeling greatly increases software quality

25. **In your opinion, to what extent does UML modeling increase communication effectiveness within teams? (Optional)**

    Mark only one oval.

	1	2	3	4	5	
UML modeling does not increase communication effectiveness	◯	◯	◯	◯	◯	UML modeling greatly increases communication effectivness

26. **In your opinion, what are the biggest drawbacks of using UML in software development?** *

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27. **In your opinion, what are the biggest benefits of using UML in software development?** *

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Future Implications -- Section 7/7

28. **Do you think it is important to educate students in collegiate level software engineering programs on the proper use/benefits of UML modeling?** *
   Mark only one oval.

   ◯ Yes

   ◯ No

29. **Do you have any suggestions on how educational institutions could teach software developers on the proper use/benefits of UML modeling?**

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30. **Do you have any other comments about the survey or UML usage in general?**

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Untitled Section

Thank you for taking the time to participate in our survey! We appreciate your time and hope you have a great day.

31. **Please provide an email address in order to receive your compensatory e-Gift Card to Amazon.com**

_____

32. **Are you interested in receiving the results of this survey? (We will forward to the e-mail address provided above) ***

Mark only one oval.

   ◯ Yes

   ◯ No

33. **Do you have any comments about the survey or UML usage in general?**

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34. **If you have colleagues, peers, or others who could provide beneficial insight about UML practice, please provide their email addresses so we can forward an invitation to participate. We appreciate that!**

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Stop filling out this form.

Thank you for taking time to consider our survey! Unfortunately you do not match our target demographic for individuals with UML experience in the California region. We appreciate your help and hope you have a great day.

35. **Do you have any comments about the survey or UML usage in general?**

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36. **If you have colleagues, peers, or others who could provide beneficial insight about UML practice, please provide their email addresses so we can forward an invitation to participate. We appreciate that!**

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