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CODE STYLE GUIDELINES BY LOW-CODE TECHNOLOGIES AND OUTSYSTEMS

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 outsystems • Champion

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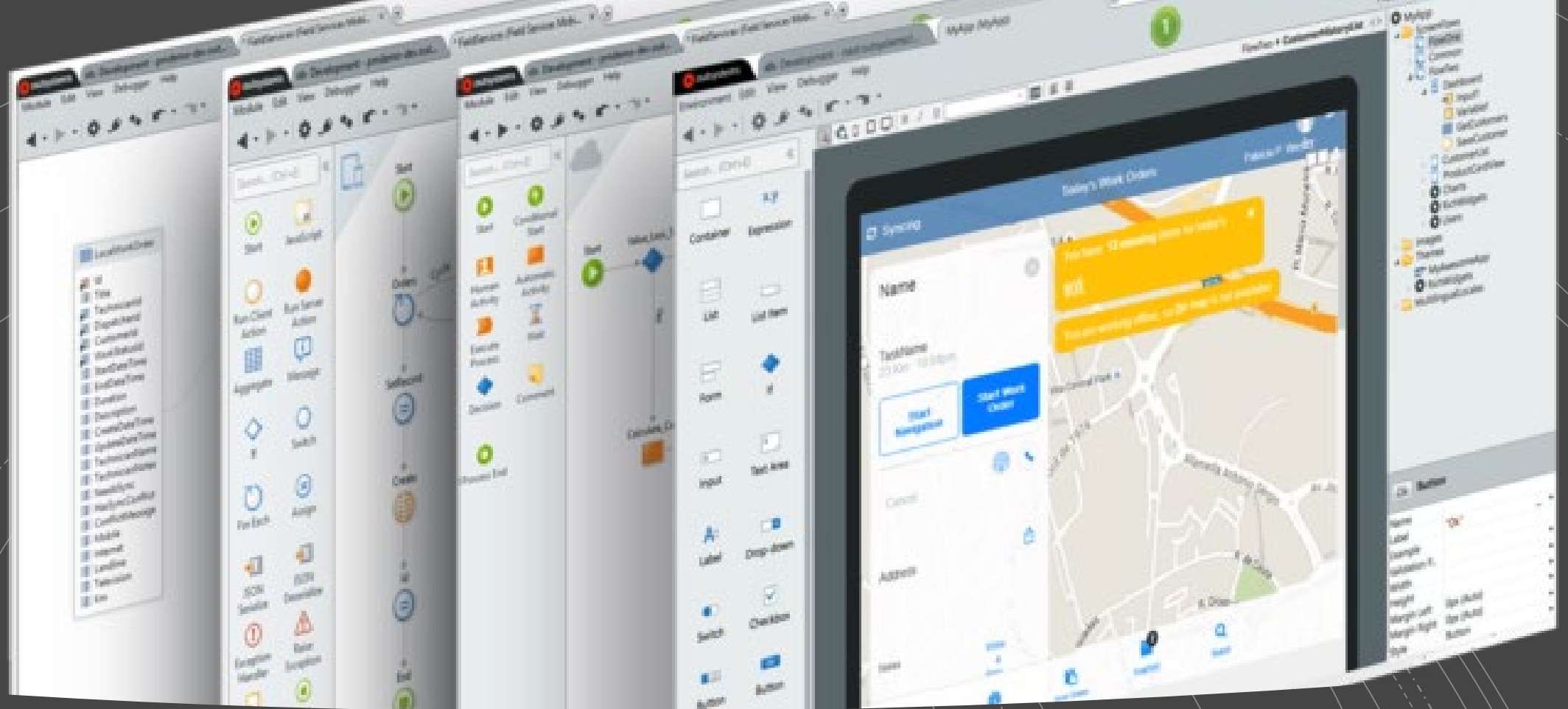
 **Germany**

 Senior Software Developer  ADVANT Beiten



What is Low-Code?





Low-Code Development Platforms

- Low-code development platforms (LCDPs) are easy to use visual environments

Code Style Guidelines

What are code style guidelines?

- A set of conventions and best practices for writing and structuring code

Why are they important?

- Promote readability and maintainability of code
- Improve collaboration between developers
- Facilitate code reviews and debugging
- Reduce the risk of errors

Challenges

- Low-code platforms offer a variety of features and functionality, which can make it difficult to create comprehensive code style guidelines
- The lack of a standard development environment

Research Objective

- Explore the perceptions, experiences, and opinions of people involved with IT
- Gather insights into the benefits, challenges, and effectiveness of code style guidelines

Methodology of the Study

Questionnaire

- Gather data on code style guidelines in software development
- Focus on OutSystems

Participants with experience in software development

Data collection process

- Electronically distributed questionnaire
- Clear instructions
- Appropriate amount of time to complete

Descriptive statistics used to summarize responses and identify patterns and trends



Results of the
Exploratory Data
Analysis (EDA)





Overall, respondents express a moderately strong inclination toward the benefits of adhering to a code style guide.



Furthermore, the respondents demonstrate a similar level of agreement when it comes to the belief that following a code style guide aids in understanding code written by others, particularly during refactoring or code reading situations.



Regarding the manner of maintaining a style guide, the responses reveal an interesting disparity.



Examining the experiences of the respondents, we find that a significant number have encountered challenges related to the code style guide.



Interestingly, a substantial number of participants (53%) also provided suggestions for improvements to the code style guide.

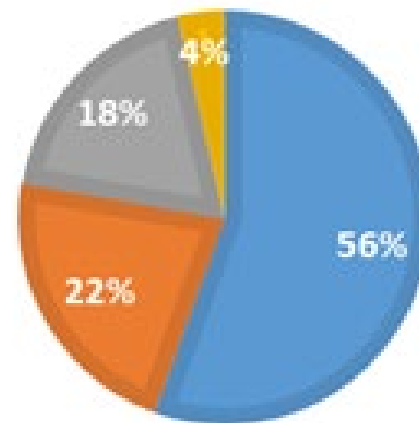
I THINK THAT HAVING A CODE STYLE GUIDE, SIMILAR TO THESE FOR TRADITIONAL TECH STACKS (JAVA, PYTHON, JAVASCRIPT, C#, C++, ETC.) IS APPROPRIATE FOR OUTSYSTEMS AND OTHER LOW-CODE TECHNOLOGIES.

■ 4 = agree

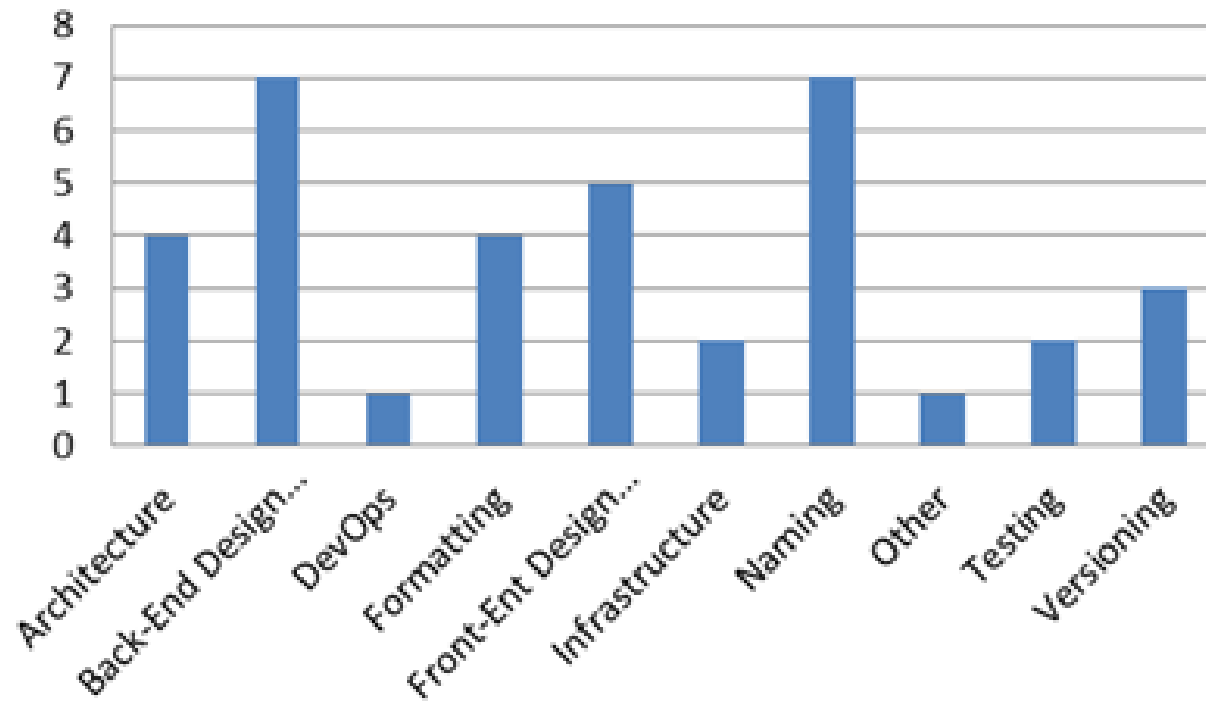
■ 5 = strongly agree

■ 3 = neither disagree, nor agree

■ 1 = strongly disagree



I have suggestions for additional rules to the Outsystems basic best practices in the area of (multiple choice):



Conclusions and Discussion



- Conclusions
 - There is a perceived need for broader and standardized best practices in the low-code software development area and the OutSystems community in particular in the form of a more extensive code style guideline.
 - There is a general consensus regarding the benefits of following a code style guide.
 - Variations exist in terms of the belief in maintaining the guide in written form and the experiences related to its implementation.
- Discussion
 - Understanding and addressing the challenges faced by team members, such as difficulties in comprehension or the need for guidance.
 - Leveraging the suggestions for improvements can foster continuous refinement and evolution of the style guide.

Literature

- A. Sahay, A. Indamutsa, D. Di Ruscio and A. Pierantonio, "Supporting the understanding and comparison of low-code development platforms," 2020 46th Euromicro Conference on Software Engineering and Advanced Applications (SEAA), Portoroz, Slovenia, 2020, pp. 171-178, doi: 10.1109/SEAA51224.2020.00036.
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- Luo, Y., Liang, P., Wang, C., Shahin, M., & Zhan, J. Characteristics and challenges of low-code development: the practitioners' perspective. // Proceedings of the 15th ACM/IEEE international symposium on empirical software engineering and measurement (ESEM). 2021.

Table 1. Descriptive statistics analysis.

	count	mean	std	min	25%	50%	75%	max
I believe that following a code style guide is beneficial for the overall quality of a codebase.	27.00	4.44	0.89	1.00	4.00	5.00	5.00	5.00
I believe that following a code style guide helps in understanding the code, when refactoring or reading code, written by someone else.	27.00	4.48	0.98	1.00	4.00	5.00	5.00	5.00
If we start using a style guide, I believe, that maintaining it in written form would be beneficial.	2.00	3.00	2.83	1.00	2.00	3.00	4.00	5.00
If we start using a style guide, I believe, that maintaining it in written form would have a negative impact on the speed with which we develop software.	2.00	4.00	1.41	3.00	3.50	4.00	4.50	5.00
If we start using a style guide, I believe, that maintaining it in written form would be beneficial.	3.00	4.00	1.00	3.00	3.50	4.00	4.50	5.00
If we start using a style guide, I believe, that maintaining it in written form would have a negative impact on the speed with which we develop software.	3.00	3.00	0.00	3.00	3.00	3.00	3.00	3.00
I believe, that maintaining a style guide in written form would be beneficial.	10.00	4.50	0.53	4.00	4.00	4.50	5.00	5.00
I believe, that maintaining it in written form would have a negative impact on the speed with which we develop software.	10.00	2.10	0.88	1.00	2.00	2.00	2.00	4.00
I believe, that maintaining it in written form is beneficial.	12.00	4.00	1.04	1.00	4.00	4.00	4.25	5.00
I believe, that maintaining it in written form has a negative impact on the speed with which we develop software.	12.00	2.42	1.31	1.00	1.75	2.00	3.25	5.00
I feel that the code style guide is consistently enforced across the team.	12.00	3.50	1.17	1.00	3.00	4.00	4.00	5.00
I have had to spend a significant amount of time refactoring or enforcing rules to conform to the style guide.	12.00	3.00	1.28	1.00	2.00	3.00	4.00	5.00