

What Makes a Good API Tutorial

Jingxuan Zhang

Dalian University of Technology

A survey on what makes a good API tutorial

Q1*. Will you consult API tutorial when facing an unfamiliar API?

- A. Yes
- B. No

Q2+. What is the important information in API tutorial which is helpful for understanding an API?

- A. The usage scenario of the API
- B. The functional description of the API
- C. Code examples with explanation of the API
- D. The difference with the other APIs
- E. The preparations before calling the API
- F. The APIs often used together with the API
- G. Others [please provide your answer]: _____

Q3+. Which issues in content in tutorial will decrease your understanding of an API?

- A. Ambiguity and vagueness
- B. Redundancy and Bloat
- C. Obsolescence
- D. Unprofessional language
- E. Incorrectness and inaccuracy
- F. Incompleteness
- G. Without code examples
- H. No explanation for code examples
- I. Others [please provide your answer]: _____

Q4+. Which issues in presentation in tutorial will decrease your understanding of an API?

- A. Unstructured text without uniform style
- B. Useless information embedded
- C. Lack of focus in long text
- D. The information related to an API scattered in different parts
- E. Others [please provide your answer]: _____

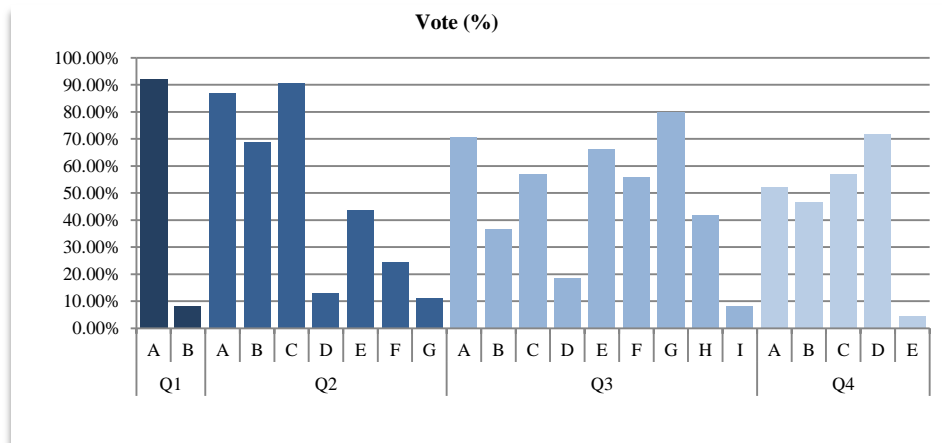
Q5. According to your experience, what makes a good API tutorial?

Answer to Q5: _____

*: exclusive choice +: multiple choice

Even though tutorials are important to developers, the qualities of tutorials are various. To investigate what makes a good API tutorial from the perspective of developers, we conduct a survey with five questions in the figure. The survey pays attention to bad writing habits of API tutorials and in such a way, reminds developers of these precautions so that lead to good API tutorials. In the survey, we first inquire whether developers will consult API tutorials and which parts are important for them. Then, we investigate some issues from the aspects of content and presentation in tutorials. Last, we expect to obtain some experience on what makes a good API tutorial. We provide some predefined options for developers to choose and developers can also offer their own answers. We invite more than 2,000 developers from open source community of Eclipse to response to the survey by sending posts to mailing

lists of Eclipse. We receive 163 responses in total and summarize the results in the following figure.



For Q1, we can see that above 92% developers will refer to API tutorials when facing an unfamiliar API, so that API tutorials are critical to developers. For Q2, three main kinds of information are considered important for understanding an API, namely the usage scenario, functional description, and code examples. Consequently, when writing API tutorials, tutorial authors should at least include them into tutorials. Developers also provide their answers, for example “explanation of border cases (eventually with “beware” hints) or when not to use this API” and “common error scenarios and how to avoid them”. From the results of Q3 we can see that, without code examples, ambiguity, and incorrectness are the frequent issues which will decrease the comprehension of an unfamiliar API. Besides, “lack of information on pre- and post-conditions” provided by developers can also become an obstacle. As a result, a good API tutorial should be concise, correct, and with code examples which can be applied in a real scenario. For Q4, the information related to an API being scattered in different parts can decrease the understanding of an API, the reason may be that developers can be confused and get lost in the tutorials in such a situation. Therefore, when organizing API tutorials, tutorial authors should put the explaining fragments for an API into one place and avoid back and forth click through operations. In addition, the abstraction level (package, class or method) for an API should be explicitly mentioned as suggested by a developer. For Q5, 65 developers provide their experience on what makes a good API tutorial. We list some answers as follows:

- “simple, direct, concise”
- “precise and neat explanation of the content”
- “simplicity, written for API users, conciseness”
- “clean presentation, focus to essential parts, live examples”
- “small, clear, and precise examples on how to get things done”

Answer. A good API tutorial should be precise, clear, and interpretative with usage scenario, functional descriptions, and code examples for APIs in it.