

# Guidelines for Collaboration

Zhiyang Ong \*

December 20, 2016

## Abstract

This is a set of guidelines for conduct while collaborating on open source projects. It also includes guidelines for creating a shared B<sub>I</sub>B<sub>T</sub>E<sub>X</sub> database.

## Revision History

Revision history:

1. Version 1, October 2, 2014. Initial version of the guideline (for another project).
2. Version 1.1, December 23, 2014. Version ported for this boilerplate code project.
3. Version 2, October 20, 2015. Added guidelines for **Doxygen**-supported, **Javadoc**-based coding standard. This coding standard is also known as coding style, coding style guide, coding guideline, coding scheme, code convention, code documentation guideline, programming guideline, or programming style.
4. Version 2.1, October 21, 2015. Finished guidelines for **Doxygen**-supported, **Javadoc**-based coding standard for *C++*.
5. Version 2.2, June 4, 2016. Finished section for additional guidelines: to include documentation using **Markdown**, and tools for software development, integrated circuit and cyber-physical system design, and documentation.
6. Version 3, November 3, 2016. Added guidelines for: documenting *GNU Octave* and **MATLAB** code, in order to facilitate documentation generation using *Texinfo* [26–28, 37]; sharing of source code, design files, sets of benchmarks, data sets, and documentation on online repositories [9, 11]; and added section on exception safety.
7. Version 3.1, November 4, 2016. Fixed references for indent style conventions.
8. Version 3.2, December 20, 2016. Update guidelines for conduct.

## 1 Guidelines for Conduct

Members of the open source software and/or hardware projects should follow the *Code of Conduct* of the Institute of Electrical and Electronics Engineers (IEEE) [12–14] and the Association for Computing Machinery (ACM) [3]. Also, actions of discrimination are not acceptable [15]. An additional guideline is “Dave Packard’s 11 simple rules” [4].

---

\*Email correspondence to: ✉ [ongz@acm.org](mailto:ongz@acm.org)

In addition, when there is a dispute about which technology, algorithm, design paradigm/style/pattern, process, or methodology to use, follow the “Code Wins Arguments” philosophy [19, 38]. Also, when considerable effort has been invested in an automated regression testing/verification infrastructure, do not be afraid to “move fast and break things” [8, 10].

Lastly, we should adopt a mission-focused and value-based approach to participate in meetings and discussions for the project(s). We should be flexible/liberal enough to consider and explore viable alternate approaches to do things and solve problems. Where disputes occur, a data-driven, fact-based approach based on the “Code Wins Arguments” philosophy should be used to resolve conflicts.

## 2 Guidelines for Creating a Shared BIB<sub>T</sub>E<sub>X</sub> Database

Guidelines for creating BIB<sub>T</sub>E<sub>X</sub> entries and the BIB<sub>T</sub>E<sub>X</sub> database, which is used for writing the paper, are given as follows:

1. Each BIB<sub>T</sub>E<sub>X</sub> key should be unique:
  - (a) Check if your desired BIB<sub>T</sub>E<sub>X</sub> key already exists in the BIB<sub>T</sub>E<sub>X</sub> database.
  - (b) Use the following format for creating BIB<sub>T</sub>E<sub>X</sub> keys: [first] author’s last name, appended by the year of publication. E.g., my first conference paper would have the BIB<sub>T</sub>E<sub>X</sub> key Ong2014. If the year of publication is not known, use an approximate year, with XY for the last 2 digits in the year (e.g., 20XY). Alternatively, if you cannot determine if it was published this millennium or the previous millennium, use UNKNOWN. For example, use Smith20XY, or KleinbergUNKNOWN.
  - (c) Remove duplicate entries in the BIB<sub>T</sub>E<sub>X</sub> database. **WARNING! Before doing this, perform a union operation on the fields of the BIB<sub>T</sub>E<sub>X</sub> entries. For example, if a BIB<sub>T</sub>E<sub>X</sub> entry has information that the other BIB<sub>T</sub>E<sub>X</sub> entry does not have, and vice versa, merge the information to a BIB<sub>T</sub>E<sub>X</sub> entry.**
  - (d) **Rational: Duplicate BIB<sub>T</sub>E<sub>X</sub> entries will cause problems in typesetting.**
  - (e) Regarding hash collision of BIB<sub>T</sub>E<sub>X</sub> keys, such as multiple instances of Gratz2014, distinguish them by appending a letter to them. E.g., use Gratz2014a, Gratz2014b, Gratz2014c, and so on. If we run out of letters, append it with “a” followed by a number. The use of the letter “a” separates the year from the instance of BIB<sub>T</sub>E<sub>X</sub> key. That is, Gratz2014a1 tells me that it is the 28<sup>th</sup> instance of Gratz2014, as opposed to Gratz201428.
2. For terms that should be typeset as is, place them in between braces (i.e., curly brackets). That is, put curly braces around acronyms and mixed-case names.
  - (a) For example, terms in upper or mixed cases (upper and lower cases), such as names (e.g., McMullen) and acronyms (e.g., SIGDA), place them in between braces (i.e., {McMullen} and {SIGDA}). This prevents the titles (or another BIB<sub>T</sub>E<sub>X</sub> field) from changing the term into lower case, with exception for the first term/word. E.g., “ICCAD Update: A Report from SIGDA” may typeset into “ICCAD Update: A report from sigda”.
3. For special symbols that are typeset with L<sup>A</sup>T<sub>E</sub>X in the `math` mode, such as  $\alpha$ , place them in between a pair of dollar signs (i.e.,  $\alpha$ ).
4. For each BIB<sub>T</sub>E<sub>X</sub> entry, check if all required fields are complete. See pages 8 and 9 in §3.1 of [24] for a list of BIB<sub>T</sub>E<sub>X</sub> entry types; alternatively, refer to the *Wikipedia* entry for , or [18, §12.2.1, pp. 230–231]. In this/these list(s), the required fields are listed for each BIB<sub>T</sub>E<sub>X</sub> entry.
5. For the `pages` field, ensure that all page ranges are indicated with double hyphens. E.g., “page = {11–34},”. This makes the page range looks more pretty.

6. For the **pages** field, ensure that multiple pages and/or page ranges are separated by commas. E.g., “page = {11-34, 57, 88, 109--187},”.
7. For books and journal articles that have an associated digital object identifier (DOI), ensure that the **doi** field is included in the BIB<sub>T</sub>E<sub>X</sub> entry with the DOI of the publication. This makes it easier for people to access the web page for the book or journal/conference paper.
8. Stylistic validation of the references can be carried out as follows:
  - (a) Include all BIB<sub>T</sub>E<sub>X</sub> keys in one citation in your L<sup>A</sup>T<sub>E</sub>X document.
  - (b) Typeset the L<sup>A</sup>T<sub>E</sub>X document.
  - (c) Check that the font and style of the reference list is correct.
  - (d) If there are errors, correct the errors as appropriate.
  - (e) Finally, the BIB<sub>T</sub>E<sub>X</sub> database should be correct.
9. Information that I would include when citing common sources of information, such as *Wikipedia*, using the Harvard Referencing Style:
  - (a) Wikipedia contributors, “TITLE\_OF\_THE\_ARTICLE,” in {\it Wikipedia, The Free Encyclopedia: CATEGORY}, Wikimedia Foundation, San Francisco, CA, MONTH DATE, YEAR. Available online at: \url{URL}; last accessed on August 26, 2014.
  - (b) Wikibooks contributors, “CHAPTER\_NAME,” in {\it TITLE\_OF\_THE\_BOOK}, Wikibooks: Open books for an open world, Wikimedia Foundation, San Francisco, CA, MONTH DATE, YEAR. Available online at: \url{URL}; last accessed on August 26, 2014.
  - (c) Wikibooks contributors, “TITLE\_OF\_THE\_BOOK,” Wikibooks: Open books for an open world, Wikimedia Foundation, San Francisco, CA, MONTH DATE, YEAR. Available online at: \url{URL}; last accessed on August 26, 2014.
  - (d) Wiktionary contributors, “TITLE,” Wiktionary, Wikimedia Foundation, San Francisco, CA, MONTH DATE, YEAR. Available online at: \url{URL}; last accessed on August 26, 2014.
  - (e) Dictionary.com, “WORD,” IAC, Oakland, CA, MONTH DATE, YEAR. Available online at: \url{URL}; last accessed on August 26, 2014.
  - (f) AUTHOR, “TITLE,” in {\it The New York Times: The Opinion Pages: Op-Ed Contributor}, The New York Times Company, New York, NY, MONTH DATE, YEAR. Available online at: \url{URL}; last accessed on August 26, 2014.
  - (g) When BIB<sub>T</sub>E<sub>X</sub> entries are created for the aforementioned sources of information, populate the appropriate fields so that each information in the aforementioned sources are included in the BIB<sub>T</sub>E<sub>X</sub> entries.
10. Refer to the file “bibtex-template.txt” for templates for selected BIB<sub>T</sub>E<sub>X</sub> entry types. The more information that you can put in, the easier you can protect yourself from accusations of plagiarism and to make it easier for people (including yourself) to find the reference again. This is especially true for web-based references/resources.

### 3 Recommended Fields for BIB<sub>T</sub>E<sub>X</sub> Entries

The recommended fields for BIB<sub>T</sub>E<sub>X</sub> entries are:

1. techreport:
  - (a) Address
  - (b) Author
  - (c) Howpublished
  - (d) Institution
  - (e) Keywords

- (f) Month
- (g) Number
- (h) Title
- (i) Url
- (j) Year

2. proceedings:

- (a) Address
- (b) Doi
- (c) Editor
- (d) Keywords
- (e) Month
- (f) Organization
- (g) Publisher
- (h) Series
- (i) Title
- (j) Volume
- (k) Year

3. manual:

- (a) Address
- (b) Author
- (c) Howpublished
- (d) Keywords
- (e) Month
- (f) Organization
- (g) Title
- (h) Url
- (i) Year

4. incollection:

- (a) Address
- (b) Author
- (c) Booktitle
- (d) Chapter
- (e) Doi
- (f) Edition
- (g) Howpublished
- (h) Keywords
- (i) Pages
- (j) Publisher
- (k) Series
- (l) Title
- (m) Url
- (n) Volume
- (o) Year

5. inproceedings:

- (a) Address

- (b) Author
- (c) Booktitle
- (d) Doi
- (e) Keywords
- (f) Month
- (g) Organization
- (h) Pages
- (i) Publisher
- (j) Series
- (k) Title
- (l) Volume
- (m) Year

6. article:

- (a) Address
- (b) Author
- (c) Doi
- (d) Journal
- (e) Keywords
- (f) Month
- (g) Number
- (h) Pages
- (i) Publisher
- (j) Title
- (k) Volume
- (l) Year

7. phdthesis (or mastersthesis):

- (a) Address
- (b) Author
- (c) Howpublished
- (d) Keywords
- (e) Month
- (f) Number
- (g) School
- (h) Title
- (i) Url
- (j) Year

8. misc:

- (a) Address
- (b) Author
- (c) Howpublished
- (d) Keywords
- (e) Month
- (f) Publisher or School
- (g) Title
- (h) Url

- (i) Year
- 9. book:
  - (a) Address
  - (b) Author
  - (c) Doi
  - (d) Edition
  - (e) Keywords
  - (f) Month
  - (g) Pages
  - (h) Publisher
  - (i) Series
  - (j) Title
  - (k) Volume
  - (l) Year

## 4 Coding Standard

This is a guideline for *Doxygen*-supported [30], *Javadoc*-based coding standard that shall be used for this boilerplate code project. This coding standard is also known as the coding style, coding style guide, coding guideline, coding scheme, code convention, code documentation guideline, programming guideline, or programming style. The documentation generator that shall be supported is: *Doxygen*. Since I am using *Doxygen* for generating documentation, I can use L<sup>A</sup>T<sub>E</sub>X to provide richer markup.

### Document the known bugs for each function/method.

My indent style would be the *1TBS* variant of the *K&R* style, which is an abbreviation of “*The One True Brace Style*”. It is also equivalent to the *Kernel Normal Form style* (or *BSD KNF style*) [34].

Classes, functions/methods, constants, macros, and static and instance variables shall be named using complete words or well-known abbreviations that are concatenated with an underscore in *C++*; this is a deviation from the *Hungarian notation* that uses an upper case letter to distinguish words/abbreviations in the name (i.e., the Start case style of writing; see letter case).

For *C++* programs, the following tags shall be used in the comments:

1. @author *Author's\_Name*: indicate the author (*Author's\_Name*) of the file/function
2. @version *X.Y*: indicate the version (*X.Y*) of the file
3. @section *SECTION\_NAME*: indicate the section (*SECTION\_NAME*) of the file, which can be: *LICENSE* or *DESCRIPTION*
4. @param *x*: indicate the parameter (*x*) of the constructor or function
5. @exception *Exception\_Name*, or @throws *Exception\_Name*: an exception that a function/method can throw
6. @return *Return\_Statement*: indicate the return (type and) action of the function
7. @see *reference*: a link to another element in the documentation; e.g., @see *Class\_Name*, or @see *Class\_Name#member\_function\_name*
8. @since *X.Y: Month-Day-Year*: This functionality has been added since version *X.Y* (and on the date *Month-Day-Year*)

9. `@deprecated` *description*: Describe an outdated function/method, and indicate when the function/method has deprecated
10. `"@link ... URL... @endlink"` is used to include hyperlinks in the generated documentation for Doxygen
11. `#### IMPORTANT NOTES`: Notes that are critical for helping the reader understanding assumptions and decisions made while developing the software
12. `@todo(<message>, <version>)` (or `#### TO BE COMPLETED`): Task to be finished at a later time
13. `#### TO BE FIXED`: Task to be debugged at a later time
14. `@migration(<message>, <version>)`: Code is being migrated to another function/method, or class.
15. See <http://www.stack.nl/~dimitri/doxygen/commands.html> for more information of tags that are recognized by Doxygen.
16. `@pre` (or `@precondition`): Precondition(s) of the function.
17. `@assert` (or `@assertion`): Assertion(s) of the function.
18. `@post` (or `@postcondition`): Postcondition(s) of the function.

The order of tags in different sections of the *C++* code is given as follows:

1. Headers/Interfaces and Classes: `@version`, `@author`, `@since`, `@link`, `@todo`, `@deprecated`, `@migration`, and `@see`
2. Constructors: `@param`, `@throws`, `@since`, `@link`, `@todo`, `@deprecated`, `@migration`, and `@see`. For collaborators modifying or extending my code, they should include the `@version` and `@author` tags before the `@param` tag(s).
3. Functions/Methods: `@param`, `@pre`, `@assert`, `@post`, `@return`, `@throws`, `@since`, `@link`, `@todo`, `@deprecated`, `@migration`, and `@see`. For collaborators modifying or extending my code, they should include the `@version` and `@author` tags before the `@param` tag(s).
4. Variables can use the `@see` tags.
5. The `@deprecated` tag can be used for headers/interfaces, classes, constructors, functions/methods, and variables.

For a suggested coding style for *Python* and *Ruby* scripts, see [31] and [20], respectively.

While well-documented source code is desired, natural language programming [35] is usually infeasible due to the choices of programming/computer languages used. Also, while literate programming [16, 17, 21–23, 25, 29] is encouraged, I am currently not following it due to the tedious process of developing software using literate programming. Hence, a short development time for well-commented, functionally correct, and efficient source code is prioritized over code written according to the literate programming approach.

## 5 Exception Safety

When developing software using programming/scripting languages that enable exceptions or errors to be thrown and caught, adopt "a set of contractual guidelines" [33] to support exception/error management. This "set of contractual guidelines" is based on exception safety guarantees in *C++* [1, 2, 33] [32, Subsection §4.4 on "Writing exception safe code"].

The levels of exception/error safety listed in descending order of safety guarantees are [1, 2, 32, 33]:

1. no throw guarantee, or failure transparency: “Best level of exception safety.”
2. strong exception safety, commit/rollback semantics, or no-change guarantee
3. basic exception safety
4. minimal exception safety, no-leak guarantee
5. no exception safety: “No guarantees are made. (Worst level of exception safety)”

These aforementioned levels of exception/error safety can be partially handled. Also, the use of guards is strongly recommended for making the software and library (or, circuit or system) exception safe.

Please judiciously consider what to do with the semipredicate problem [36].

## 6 Additional Guidelines

Please kindly use the **Markdown** language for writing text documents. This is because Bitbucket will treat my text file as a file written in the **Markdown** syntax. That said, the raw file looks a lot better than the represented **Markdown** files. Their (*Bitbucket*) formatting for **Markdown** is messed up. *GitHub*’s formatting for **Markdown** works as expected.

In addition, tools for working with source code and  $\text{\LaTeX}$  source files include:

1. **git**: [7]
2. **latexdiff**: “determine and markup differences between two latex files”
  - (a) Evan Driscoll, “Latexdiff notes,” from *Evan Driscoll’s web page: Writings on Software:  $\text{\LaTeX}$* , the Department of Computer Sciences, University of Wisconsin-Madison College of Engineering, University of Wisconsin-Madison, Madison, WI. Available online at: <http://pages.cs.wisc.edu/~driscoll/software/latex/latexdiff.html>; last accessed on February 15, 2016 [5].
3. documentation generators:
  - (a) *Doxygen* [30]
  - (b) **Texinfo**-based generators [26–28, 37]:
    - i.
4. Build automation:
  - (a) **SCons** [6]

Data sets and sets of benchmarks for experiments shall be publicly published using an online repository, via *figshare LLP* [9]. For each data set, or each set of benchmarks, create a unique Digital Object Identifier (DOI) to identify it.

Repositories for software as well as designs of integrated circuits and cyber-physical systems shall be stored online, using online repositories such as *GitHub* [11]. Each repository shall have a unique DOI to identify it, and include all source code, documentation, and design files.



## References

- [1] David Abrahams. Exception-safety in generic components: Lessons learned from specifying exception-safety for the C++ standard library. In *Proceedings of the International Seminar on Generic Programming*, volume 1766 of *Lecture Notes in Computer Science*, pages 69–79, Wadern, Merzig-Wadern, Saarland, Germany, April 27 – May 1 1998. Springer-Verlag Berlin Heidelberg.
- [2] David Abrahams. Exception-safety in generic components: Lessons learned from specifying exception-safety for the C++ standard library. Available online from *Boost C++ Libraries: Community* at: [http://www.boost.org/community/exception\\_safety.html](http://www.boost.org/community/exception_safety.html); self-published; October 27, 2016 was the last accessed date, 2001.
- [3] ACM Council. ACM code of ethics and professional conduct. Available online at: <http://www.acm.org/about/code-of-ethics>; September 27, 2014 was the last accessed date, October 16 1992.
- [4] Hewlett-Packard Company. Dave packard’s 11 simple rules. Available online in *Hewlett-Packard Company: Retiree Home: History: Founders & early contributors–Dave Packard* at: <http://www.hp.com/retiree/history/founders/packard/11rules.html>; March 15, 2014 was the last accessed date, 2012.
- [5] Evan Driscoll. A description of the c++ `typename` keyword. Available online from *Evan Driscoll’s web page: Writings on Software: C++*, the Department of Computer Sciences, University of Wisconsin–Madison College of Engineering, University of Wisconsin–Madison at: <http://pages.cs.wisc.edu/~driscoll/typename.html>; February 15, 2016 was the last accessed date.
- [6] Evan Driscoll. Scons documentation recommendatitons. Available online from *Evan Driscoll’s web page: Writings on Software: SCons*, the Department of Computer Sciences, University of Wisconsin–Madison College of Engineering, University of Wisconsin–Madison at: <http://pages.cs.wisc.edu/~driscoll/software/scons/index.html>; February 15, 2016 was the last accessed date.
- [7] Evan Driscoll. Version control. Available online from *Evan Driscoll’s web page: Writings on Software*, the Department of Computer Sciences, University of Wisconsin–Madison College of Engineering, University of Wisconsin–Madison at: <http://pages.cs.wisc.edu/~driscoll/software/vcs/>; February 15, 2016 was the last accessed date, February 22 2012.
- [8] Benny Evangelista. Facebook’s hacker way – “move fast and break things”. Available online in *The San Francisco Chronicle: The SF Gate: Blogs at SFGate.com: The Technology Chronicles* at: <http://blog.sfgate.com/techchron/2012/02/01/facebook-hacker-way-move-fast-and-break-things/>; October 9, 2014 was the last accessed date, February 1 2012.
- [9] figshare LLP staff. figshare: credit for all your research. Available online at: <https://figshare.com/>; November 4, 2016 was the last accessed date, 2016.
- [10] Rachel Fong. Move fast and break things. Available online in *MIT Admissions: Blogs: Academics & Research* at: [http://mitadmissions.org/blogs/entry/move\\_fast\\_and\\_break\\_things](http://mitadmissions.org/blogs/entry/move_fast_and_break_things); October 9, 2014 was the last accessed date, June 25 2011.
- [11] GitHub staff. GitHub. Available online at: <https://github.com/>; November 4, 2016 was the last accessed date, 2016.

- [12] IEEE Board of Directors. IEEE code of ethics. Available online at: [http://www.ieee.org/about/ieee\\_code\\_of\\_conduct.pdf](http://www.ieee.org/about/ieee_code_of_conduct.pdf); October 2, 2014 was the last accessed date, June 2014.
- [13] IEEE Board of Directors. IEEE code of ethics. In IEEE Policies, page 7.3. Institute of Electrical and Electronics Engineers, New York, NY, 2014.
- [14] IEEE Board of Directors. IEEE policies. Technical report, Institute of Electrical and Electronics Engineers, New York, NY, August 2014.
- [15] IEEE Board of Directors. Nondiscrimination policy. In IEEE Policies, page 9.8. Institute of Electrical and Electronics Engineers, New York, NY, 2014.
- [16] Donald E. Knuth. Literate programming. The Computer Journal, 27(2):97–111, 1984.
- [17] Donald E. Knuth. Literate Programming. Center for the Study of Language and Information – Lecture Notes. The University of Chicago Press, Chicago, IL, 1992.
- [18] Helmut Kopka and Patrick W. Daly. Guide to L<sup>A</sup>T<sub>E</sub>X. Addison-Wesley Series on Tools and Techniques for Computer Typesetting. Addison-Wesley, Boston, MA, fourth edition, 2004.
- [19] David Kushner. Facebook philosophy: Move fast and break things – hacker culture is alive and well at Facebook. Available online in *IEEE Spectrum* at: <http://spectrum.ieee.org/at-work/innovation/facebook-philosophy-move-fast-and-break-things/0>; October 9, 2014 was the last accessed date, June 1 2011.
- [20] Ian Macdonald. The unofficial Ruby usage guide. Available online from *Caliban – Opinion and Righteous Anger: Ruby Projects: Recommended Tutorials* at: <http://www.caliban.org/ruby/rubyguide.shtml>; self-published; October 20, 2015 was the last accessed date.
- [21] Steve McConnell. Code Complete: A Practical Handbook of Software Construction. Microsoft Press, Redmond, WA, second edition, 2004.
- [22] Matthias Müller-Hannemann and Stefan Schirra. Algorithm Engineering: Bridging the Gap between Algorithm Theory and Practice, volume 5971 of Lecture Notes in Computer Science. Springer-Verlag Berlin Heidelberg, Heidelberg, Germany, 2010.
- [23] Andy Oram and Greg Wilson. Beautiful Code: Leading Programmers Explain How They Think. O’Reilly Media, Sebastopol, CA, 2007.
- [24] Oren Patashnik. BIB<sub>T</sub>E<sub>X</sub>ing. Available online at: <http://mirrors.ctan.org/biblio/bibtex/base/btxdoc.pdf>; September 24, 2014 was the last accessed date, February 8 1988.
- [25] Stephen R. Schach. Object-Oriented and Classical Software Engineering. McGraw-Hill, New York, NY, seventh edition, 2007.
- [26] Richard Stallman and Bob Chassell. GNU Texinfo 6.3. Available online from *The GNU Operating System and the Free Software Movement: GNU Software: Texinfo – The GNU Documentation System: Texinfo manuals: GNU Texinfo manual* at: <https://www.gnu.org/software/texinfo/manual/texinfo/texinfo.html>; November 4, 2016 was the last accessed date, September 11 2016.
- [27] Richard Stallman and Bob Chassell. GNU Texinfo manual. Available online from *The GNU Operating System and the Free Software Movement: GNU Software: Texinfo – The GNU Documentation System: Texinfo manuals* at: <https://www.gnu.org/software/texinfo/manual/texinfo/>; November 4, 2016 was the last accessed date, September 11 2016.

- 
- [28] Richard Stallman and Bob Chassell. Texinfo: The GNU documentation system. Available online from *The GNU Operating System and the Free Software Movement: GNU Software* at: <https://www.gnu.org/software/texinfo/>; November 4, 2016 was the last accessed date, September 11 2016.
- [29] Venkat Subramaniam and Andy Hunt. Practices of an Agile Developer: Working in the Real World. The Pragmatic Programmers, Raleigh, NC, 2006.
- [30] Dimitri van Heesch. Doxygen. Available online at M.C.G.V. Stack: <http://www.stack.nl/~dimitri/doxygen/> and <http://doxygen.org/>; November 4, 2016 was the last accessed date, September 11 2016.
- [31] Guido van Rossum, Barry Warsaw, and Nick Coghlan. Style guide for Python code. Available online as *Python: Python Developer's Guide: Python Enhancement Proposals: Python Enhancement Proposal 0* at: <https://www.python.org/dev/peps/pep-0008/>; October 20, 2015 was the last accessed date, August 1 2013.
- [32] Wikibooks contributors. Exception handling. In C++ Programming, chapter 4. Wikimedia Foundation, San Francisco, CA, February 11 2016.
- [33] Wikipedia contributors. Exception safety. Available online from *Wikipedia, The Free Encyclopedia: CATEGORY* at: [https://en.wikipedia.org/wiki/Exception\\_safety](https://en.wikipedia.org/wiki/Exception_safety); October 29, 2016 was the last accessed date, September 26 2016.
- [34] Wikipedia contributors. Indent style. Available online in *Wikipedia, The Free Encyclopedia: Source code* at: [https://en.wikipedia.org/wiki/Indent\\_style](https://en.wikipedia.org/wiki/Indent_style); November 4, 2016 was the last accessed date, October 30 2016.
- [35] Wikipedia contributors. Natural language programming. Available online in *Wikipedia, The Free Encyclopedia: Computer programming* at: [https://en.wikipedia.org/wiki/Natural\\_language\\_programming](https://en.wikipedia.org/wiki/Natural_language_programming); November 4, 2016 was the last accessed date, November 2 2016.
- [36] Wikipedia contributors. Semipredicate problem. Available online from *Wikipedia, The Free Encyclopedia: Programming language topics* at: [https://en.wikipedia.org/wiki/Semipredicate\\_problem](https://en.wikipedia.org/wiki/Semipredicate_problem); October 29, 2016 was the last accessed date, October 23 2016.
- [37] Wikipedia contributors. Texinfo. Available online in *Wikipedia, The Free Encyclopedia: Markup languages* at: <https://en.wikipedia.org/wiki/Texinfo>; November 4, 2016 was the last accessed date, April 29 2016.
- [38] Mark Zuckerberg. Letter from Mark Zuckerberg. Available online as *Form S-1 REGISTRATION STATEMENT Under The Securities Act of 1933, Facebook, Inc.* at: [http://www.sec.gov/Archives/edgar/data/1326801/000119312512034517/d287954ds1.htm#toc287954\\_10](http://www.sec.gov/Archives/edgar/data/1326801/000119312512034517/d287954ds1.htm#toc287954_10); October 9, 2014 was the last accessed date, February 1 2012.