



Waterford Institute *of* Technology

INSTITIÚID TEICNEOLAÍOCHTA PHORT LÁIRGE

RESEARCH NOTE
HIGHER DIPLOMA IN SCIENCE
IN COMPUTER SCIENCE (NFQ – LEVEL 8)
2016-2017

Specification + Guidelines

Department of Computing & Mathematics

Brief

You are asked to write a short research note + an associated presentation slide deck on an emerging topic in software development. The intended audience is technical, but not necessarily specialist in the topic concerned, and could include developers and technical management.

You are given a short list of three topics, and are asked to select any ONE of these topics. All topics are drawn from *ThoughtWorks Technology Radar April '16*¹. This site + document summarise a superset of the topics, and should be the first source you consult in exploring the topic.

List of Topics

A	4. BFF - Backend for frontends	103. Immutable.js	86. Butterknife
B	6. Data Lake	56. Browsersync	92. React Native
C	8. Flux	97. AngularJS	28. Docker
D	11. NPM for all the things	34. Kubernetes	85. Swift
E	14. Reactive architectures	55. Apache Kafka	98. Aurelia
F	16. Hosted IDE's	38. Amazon API Gateway	65. Webpack
G	20. Serverless architecture	48. Realm	101. Elm
H	31. AWS Lambda	84. Spring Boot	91. Fetch
I	55. Apache Kafka	36. Pivotal Cloud Foundry	89. Ember.js
J	83. React.js	86. Butterknife	102. GraphQL
K	100. Elixir	99. Cylon.js	93. Redux

You are asked to work in a 2 person teams to prepare all materials. You will be give a single row (a letter) and asked to select ONE entry from the row. The numbers associated with each topic are the numbers used in the ThoughtWorks materials.

Guidelines, template and page count are outlined below.

¹ ThoughtWorks Technology Radar April '16, Available: <https://www.thoughtworks.com/radar> [Oct 11, 2016]

Abstract Guidelines

The abstract should be written as much as is possible in non-technical language. Imagine you are describing the subject of your research to a class colleague. Describe what problems were solved or needs satisfied by subject of the research. What further work is underway, necessary or potentially useful? What are its shortcomings and limitations? Summarize your understanding and conclusions of the research subject. Do not include references (citations) or diagrams. At the foot of the abstract include about a half-dozen keywords that people searching for work like yours might use. The abstract should not exceed 300 words.

Citations

Use the IEEE style to format your citations.² You could manually assemble and insert citations. Alternatively, you could use a software application to do so. One such application is Endnote, a proprietary product. Alternatively you may choose to use Zotero.³ This is free to download and use and has the advantage of having available plugins for Mozilla Firefox and Microsoft Word.

Word Count Guidance + Template

The research note should use the IEEE manuscript for conference proceedings template⁴ The research note would typically contain between 1500 and 2000 words and be contained in no more than 5 pages. These numbers include only the primary content of the report. They should exclude, for example, introductory material, copyright statement, the abstract and references. An allowance for diagrams has been made in arriving at the number of pages. A

² IEEE Citation Style Guide. Available: <http://www.ijssst.info/info/IEEE-Citation-StyleGuide.pdf> [Oct. 5, 2016]

³ About Zotero-Library Research Guides at Georgia State University. Available: http://www.zotero.org/support/word_processor_plugin_installation [Oct. 5, 2016]

⁴ Manuscript Templates for Conference Proceedings. Available: https://www.ieee.org/conferences_events/conferences/publishing/templates.html [Oct 11, 2016]

project falling outside of these word and page number limits will likely be returned to the student for amendment.

Presentation Slide Deck

The time allotted for a presentation is 10 minutes. The slide deck should be submitted as a single document in portable document format (pdf). The number of slides should be between 10 and 15. Use 28-point or 32-point font. Title font size should be in the range of 36 to 44 point. Expect the audience to read all of the text on each slide you present. If you provide too much content then you will not be listened to.

A simple white background with black font (in general) is advisable. Avoid fancy templates and animations. These serve only as distractions.

Language to Avoid

Among language idioms to avoid are the use of run-on expressions (such as *etc.*) and colloquial vocabulary (such as *going forward*). Refer to UniLearning Academic Writing⁵ for more examples.

⁵ UniLearning: Academic Writing. Available:
<https://unilearning.uow.edu.au/academic/2e.html> [Oct 5, 2016]