✎ Title of the experiment

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ABSTRACT

Context. ✎ at the end
Goal. ✎ at the end
Method. ✎ at the end
Results. ✎ at the end
Conclusions. ✎ at the end

1 INTRODUCTION

This document represents a template of the final experiment report structure for the course *Green Lab* at the Vrije Universiteit Amsterdam [1].

The experiment is conducted according to the guidelines by Wohlin and colleagues [2].

The total length of this document must not exceed 15 pages, including references, appendixes, etc.

In this section you have to describe (i) the domain (*e.g.*, mobile apps and their market) and the technologies relevant for understanding the rest of the document, (ii) the main motivation behind your experiment (the problem, here you can show examples via apps/tools screenshots, snippets of source code, etc.), (iii) what your experiment is about (hint of the solution), and (iii) what the developers will learn from the results of your experiment.

Page limit: 2

2 RELATED WORK

Describe here scientific papers similar to your experiment, both in terms of goal and methodology.

Assign. 1

One paragraph for each paper (we expect about 5-8 papers to be discussed). Each paragraph contains: (i) a brief description of the related paper and (ii) a black-on-white description about how your experiment differs from the related paper.

Page limit: 1

3 EXPERIMENT DEFINITION

Report about the GQM (with figure).

Page limit: 2

Assign. 1

4 EXPERIMENT PLANNING

4.1 Subjects Selection

4.2 Experimental Variables

4.3 Experimental Hypotheses

4.4 Experiment Design

4.5 Data Analysis

Page limit: 3

Assign. 2

5 EXPERIMENT EXECUTION

Report about: how you plan to conduct your experiment, which tools you are going to use, which devices/laptops, figure and description of the overall software/hardware infrastructure you are setting up for the experiment (*e.g.*, who communicates with whom, proxies, network requests, order of actions, etc.).

Page limit: 2

6 RESULTS

Provide:

- descriptive statistics
- hypothesis testing

Provide suitable plots and tables to illustrate your results.

Page limit: Open - go deep as you wish

Assign. 3

7 DISCUSSION

Report implications and interpretations of your results (possibly grouped by research question).

Page limit: 1

8 THREATS TO VALIDITY

Report about each type of threat to the validity of the experiment, according to the classification discussed in class.

8.1 Internal Validity

8.2 External Validity

8.3 Construct Validity

8.4 Conclusion Validity

Page limit: 1

Assign. 3 + abstract

9 CONCLUSIONS

One brief paragraph for summarizing the main findings of the report.

One brief paragraph about the possible extensions of the performed experiment (imagine that other 3 teams will be assigned to the extension of your experiment).

REFERENCES

[1] I. Malavolta, "Green Lab: empirical software engineering for energy efficiency," 2020.

[2] C. Wohlin, P. Runeson, M. Höst, M. Ohlsson, B. Regnell, and A. Wesslén, *Experimentation in Software Engineering - An Introduction.* Kluwer Academic Publishers, 2012.