Interactive dashboard to monitor the COVID-19 outbreak

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ABSTRACT
As of September 20th, 2021, 221 countries and territories are infected by the COVID-19 worldwide pandemic. Dashboards are the most often used visualization method for visualizing COVID-19 data and informing the public. The main objective of this study is to identify different features, visualization methods & improvements that should be occurred by exploring the existing dashboards and to develop a dashbored to visualize COVID-19 outbreak in Sri Lanka. We explored 15 different dashboards. The most commonly used visualization methods in dashboard development are bar charts, line charts, and interactive maps. Dashboards that fit on a single screen are preferable than others.

KEYWORDS
COVID-19, Dashboard, Visualization

1. Introduction

The COVID-19 pandemic is a global coronavirus illness outbreak that began in 2019 and is being caused by the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) virus. In December 2019, the first COVID-19-infected patient was discovered in Wuhan, China. According to Worldmeter data, there were 229835231 confirmed cases, 206515718 recovered cases, 18605877 active cases, and 4713636 deaths worldwide as of September 20, 2021. Currently, 99.5 percent of active patients are in a mild state, while 0.5 percent are in a critical state.

Dashboards are one of the greatest visual interpretation methods for tracking the COVID-19 pandemic's spread and communication. There are a plethora of COVID-19 visualization dashboards that have been designed to visualize the pandemic's global and local status. Different software can be used to generate dashboards. We explored 15 dashboards designed to visualize COVID-19 data in the global and country levels. First, dashboards were compared to identify the various features, visualization approaches, and enhancements that should be implemented. Next, we developed an interactive dashboard to visualized COVID-19 outbreak in Sri Lanka.

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2. Literature Review

3. Methodology

4. Results

5. Appendices

Any appendices should be placed after the list of references, beginning with the command `\appendix` followed by the command `\section` for each appendix title, e.g.

```
\appendix
\section{This is the title of the first appendix}
\section{This is the title of the second appendix}
```

produces:

Appendix A. This is the title of the first appendix

Appendix B. This is the title of the second appendix

Subsections, equations, figures, tables, etc. within appendices will then be automatically numbered as appropriate. Some theorem-like environments may need to have their counters reset manually (e.g. if they are not numbered within sections in the main text). You can achieve this by using `\numberwithin{remark}{section}` (for example) just after the `\appendix` command.

Please note that if the `endfloat` package is used on a document containing appendices, the `\processdelayedfloats` command must be included immediately before the `\appendix` command in order to ensure that the floats in the main body of the text are numbered as such.

Appendix A. Troubleshooting

Authors may occasionally encounter problems with the preparation of a manuscript using LaTeX. The appropriate action to take will depend on the nature of the problem:

(i) If the problem is with LaTeX itself, rather than with the actual macros, please consult an appropriate LaTeX 2_ε manual for initial advice. If the solution cannot be found, or if you suspect that the problem does lie with the macros, then please contact Taylor & Francis for assistance (`latex.helpdesk@tandf.co.uk`).

(ii) Problems with page make-up (e.g. occasional overlong lines of text; figures or tables appearing out of order): please do not try to fix these using 'hard' page make-up commands – the typesetter will deal with such problems. (You may, if you wish, draw attention to particular problems when submitting the final version of your manuscript.)

(iii) If a required font is not available on your system, allow TeX to substitute the font and specify which font is required in a covering letter accompanying your files.

Appendix B. Obtaining the template and class file

B.1. *Via the Taylor & Francis website*

This article template and the `interact` class file may be obtained via the 'Instructions for Authors' pages of selected Taylor & Francis journals.

Please note that the class file calls up the open-source LaTeX packages booktabs.sty, epsfig.sty and rotating.sty, which will, for convenience, unpack with the downloaded template and class file. The template calls for natbib.sty and subfigure.sty, which are also supplied for convenience.

B.2. *Via e-mail*

This article template, the `interact` class file and the associated open-source LaTeX packages are also available via e-mail. Requests should be addressed to `latex.helpdesk@tandf.co.uk`, clearly stating for which journal you require the template and class file.