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Interactive web-based dashboard for examining the spatial and temporal dynamics of COVID-19 in South Korea

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The COVID-19 pandemic has necessitated the development of robust tools for tracking and modeling the spread of the virus. We present an interactive web-based dashboard available at https://covidtrack.shinyapps.io/kcovidtrack/. Developed using the R Shiny framework, this dashboard facilitates the analysis of the geographical and temporal spread of COVID-19 in South Korea. Our dashboard employs dynamic user interface elements, employs validated epidemiological models, and integrates real-time data to offer tailored visual displays. The dashboard allows users to customize their data views by selecting specific time frames, geographic regions, and demographic groups. This customization allows for the creation of charts and summaries relevant to daily and cumulative COVID-19 statistics, including mortality rates. Additionally, the dashboard offers a simulation model based on mathematical models, enabling users to make predictions under various parameter settings. The dashboard is designed to assist researchers, policymakers, and the public in understanding the spread and impact of COVID-19, thereby facilitating informed decision-making. The data and code for the dashboard are publicly accessible and can be used for academic research.