

App for child growth charts in R

TEAM 14

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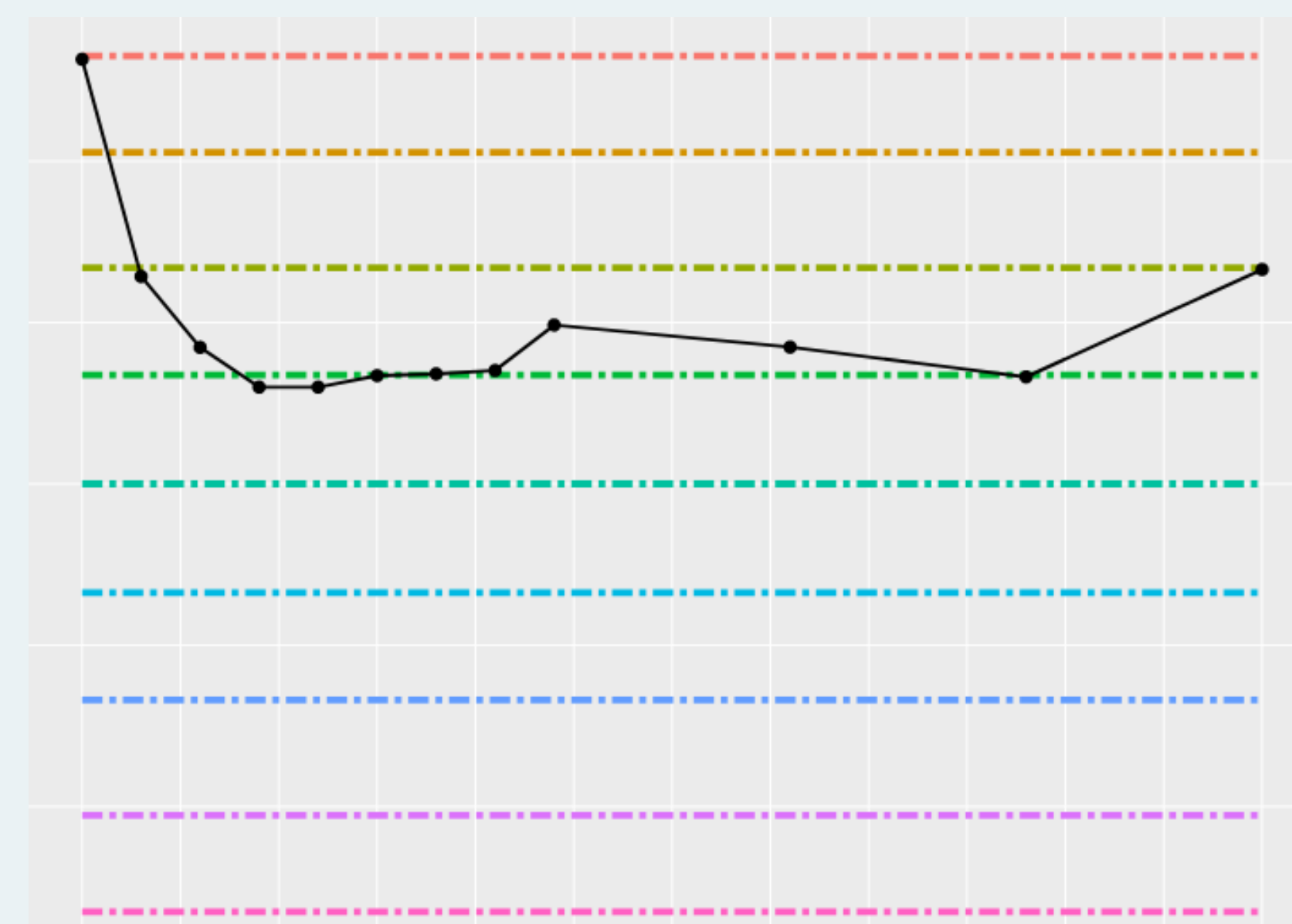
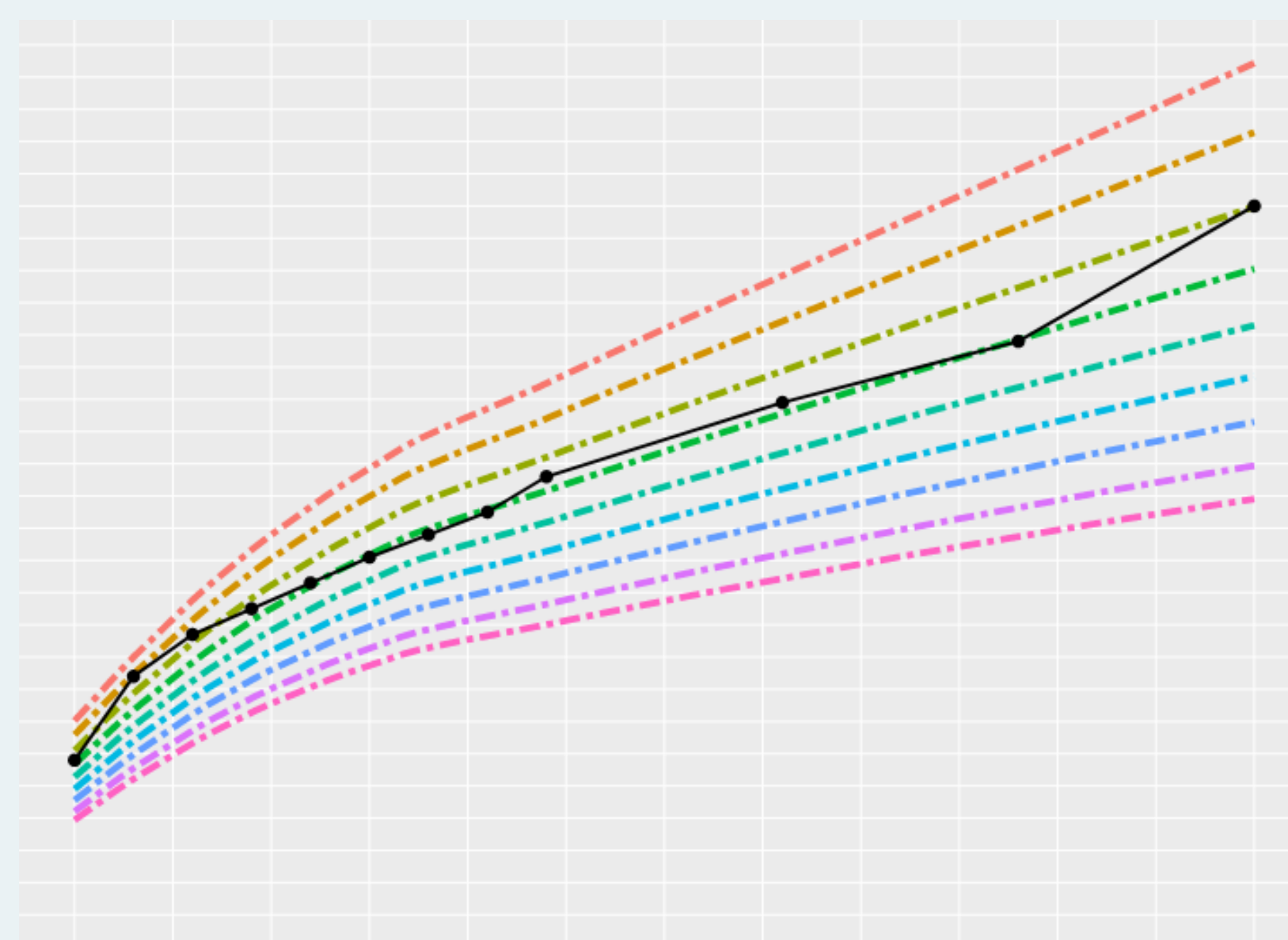
Our Client

When children are born, a lot of information is gathered about them as they develop such as weight, height etc. This data is usually visualized in a graph format and generally on paper. With over 130,000 births last year in London alone, a lot of data has to be collected and resources such as paper used to produce the growth charts for this data. This is where our problem lied. Our problem was to produce an application for Great Ormond Street Hospital that can produce these growth charts and display useful information to the user about the growth of the child for example, what centile the their weight/height lies in etc.



The App & Features

The solution we created was a web app coded in the statistical language R. We used R as it easily allowed us to read and manipulate data from the .csv files in which the information was stored. We used two main libraries from R for our app. Firstly, we used R-Shiny to make our app accessible from the web, allowing our application to be used on all platforms with web functionality. As well as giving us web functionality, R-Shiny provided the resources for us to create a UI for our application. The other library we used was 'plotly'. This library allowed us to display the growth charts in a visually stimulating format and contained a lot of built in functionality that provides a more robust experience for the user allowing them to zoom in/out, compare data at different points etc. We produced two growth charts for each type of growth and gender. One graph was a measurement/age graph with the child's data as well as the lines for some centiles so the user can see how child's growth compares to the rest of the population. The other graph is a z-score/age graph which allows the user to see more explicitly how the child's growth moves in centiles providing more information to the user.



Requirements

- Plotting of serial measurements of an individual on a normal growth chart with centile detection
- Plot height and weight growth charts
- Have web app functionality
- Use GOSH's data to produce growth chart
- Show some sort of growth trajectory using the data that is inputted
- Have some functionality for the application to run in a mobile browser