Creation of backend functionality for election coverage

Extended project description

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31.10.2018

Part 1: Database setup for KOALA election analyses

Main requirements

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1. Modern database setup with a public API
   a) In the database we want to save ...
   ... the data for multiple elections over time
   ... the published opinion polls by different polling agencies.
      For each election, these polls contain different parties. Also,
      for one election the number of parties can change over time (e.g. if a smaller
      party was formerly subsumized in the 'Others' category and is now
      listed with its individual voter share).
   ... the probabilities for specific events (e.g. that two parties
      jointly obtain a seat majority in parliament or that a smaller party
      gets into parliament). For each election, different events can be in
      the focus and it should be possible to introduce new events to the
      database (if we one day decide to newly calculate probabilities
      for other events).
   ... intermediate results of our analyses. In our KOALA method, based on
      opinion poll data, we simulate the election outcome 50,000 times to
      then define e.g. the probability of two parties having a joint majority
      as the relative frequency of cases in which this event is true.
      We want to save the simulated shares in the database.
   b) API access should be able to differentiate between admin users of
   the database and third parties. Third parties should get read-only access.
   c) The data you get for opinion polls, specific probabilities etc.
   is already in long format (at least most of it).
   The data format can still be changed. Think
   about an optimal format to store the data in the database.
1. R package for database access
   a) Easy-to-use R package for using the API-access to the database
   b) Functions to retrieve, edit and write data in the database.
   Functions should have adequate filtering options, e.g. to only work
   with the data of specific polling agencies, specific dates, specific parties etc.
   c) R package should be made available on GitHub with adequate documentation
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Part 2: Automatic scraping tool for election results

see project description