CementHub

Science Hack – Final Presentation

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Data Science for Sustainable Construction Materials
Climate change is the biggest challenge of the 21st century

- Climate change is mainly caused by CO$_2$
- Concrete production accounts for 8% of world’s CO$_2$ emissions
- Research towards sustainable concrete production
- Scientific data is often stored in multiple Excel files
- Different formats hamper data analytics
- Consistent data drives research forward
Research data is messy

- Dozens of Excel files
- Not searchable or filterable
- Different formats and units
- Data analysis impossible
Introducing CementHub

- Responsive web application
- Simple user-friendly UI
- Data organization and filtering
- Enforcing consistent data format
- User Authentication
Seamless data upload

- Edit data labels on the fly to guarantee a consistent structure
- Convert units to a standardized format
- Organize metadata
From data to value

- Data visualization for quick overview
- Connect data to Apache Zeppelin, Jupyter Notebooks and many more
- Export as plain CSV
Behind the magic
Try It

CementHub:
http://135.125.219.68:8000/cementhub/
user: joe password: cementhub

Apache Zeppelin:
http://135.125.219.68:8080
open “Jupyter Demo” notebook