



DATA ANALYSIS & VISUALISATIONS OF IPL

MOTIVATION

The art and practice of visualizing data is becoming ever more important in bridging the human-computer gap to mediate analytical insight in a meaningful way.

—*Edd Dumbill*

ARCHITECTURE



TECH STACK

LOADBALNCER
NGINX S3 COMPUTE
AWS REDIS CLUSTER
EC2 STORAGE
PYTHON SERVERLESS
ELB LAMBDA
KIBANA DNS
DYNAMODB
ELASTICSEARCH
GITHUB TRIGGER

ETL

EXTRACT

- Data has been sourced from multiple areas
 - Scrapping popular cricketing websites
 - Scrapping wiki
 - Google API – Geo points
 - Kaggle competitions
- All the data is further stored into S3.

Cont...

- Raw data received in S3 is pushed into AWS DynamoDB.
- S3 event invokes AWS Lambda which does the data parsing before it is rested in DynamoDB.
- Three tables – Player, Matches, Deliveries
- Data in DynamoDB acts a source of truth for all the further operations.

TRANSFORM

- All the semi parsed data is transformed into a meaningful entity - JSON.
- Triggers on DynamoDb would invoke AWS Lambda whenever a new entry is added into DynamoDb.
- AWS Lambda transforms the data into a meaningful patterns, which are further loaded into elasticsearch cluster.
- AWS Lambda would fetch additional geo data through Google API
- AWS Lambda uses Redis for a quick key-value mapping lookup.

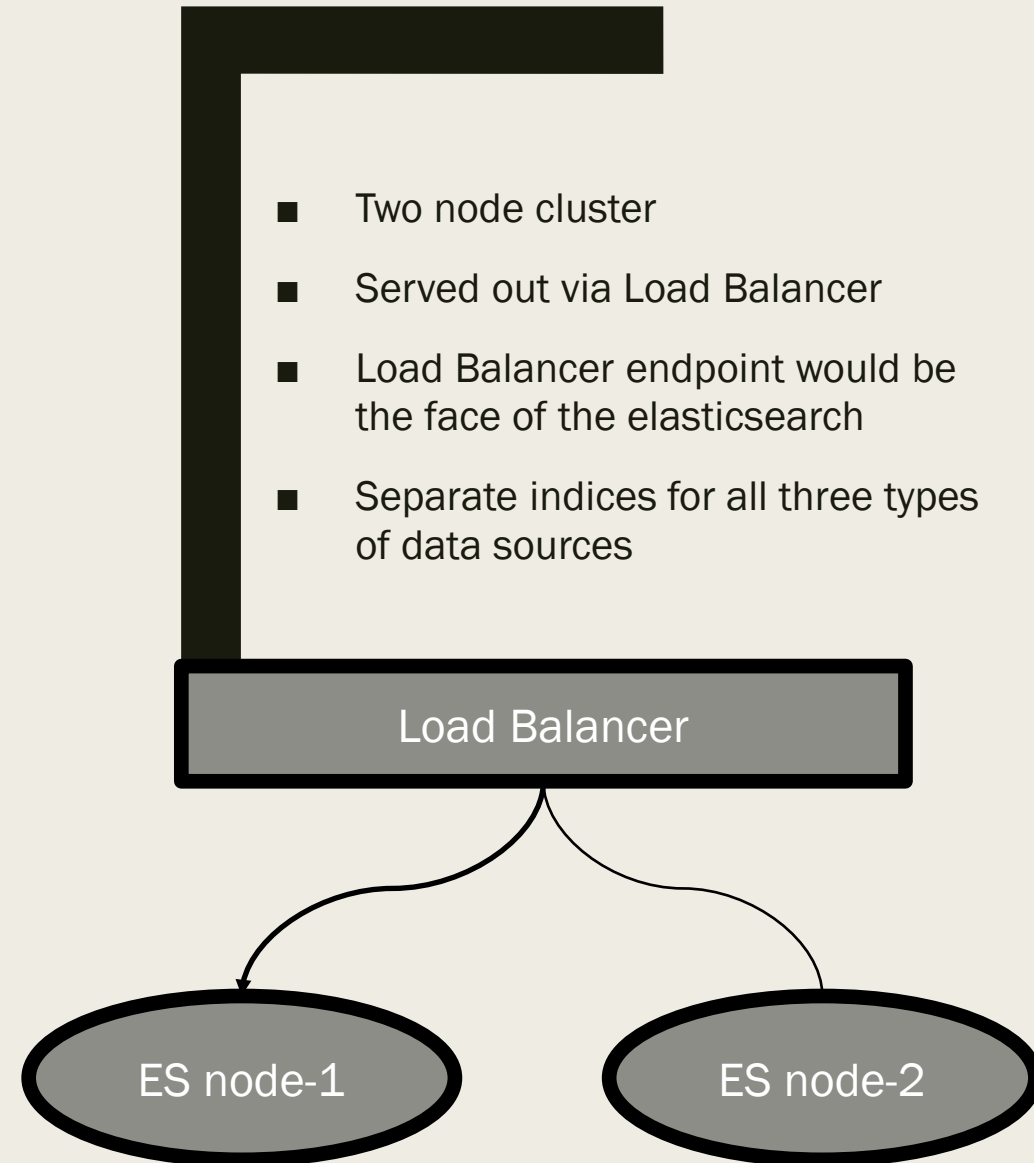
LOAD

- Elasticsearch indexes all the incoming data from lambdas.
- Data on elasticsearch is split on the nodes in the cluster.
- All the three formats of the data are stored in different indices.
 - i. matches
 - ii. players
 - iii. deliveries



elasticsearch

- Two node cluster
- Served out via Load Balancer
- Load Balancer endpoint would be the face of the elasticsearch
- Separate indices for all three types of data sources

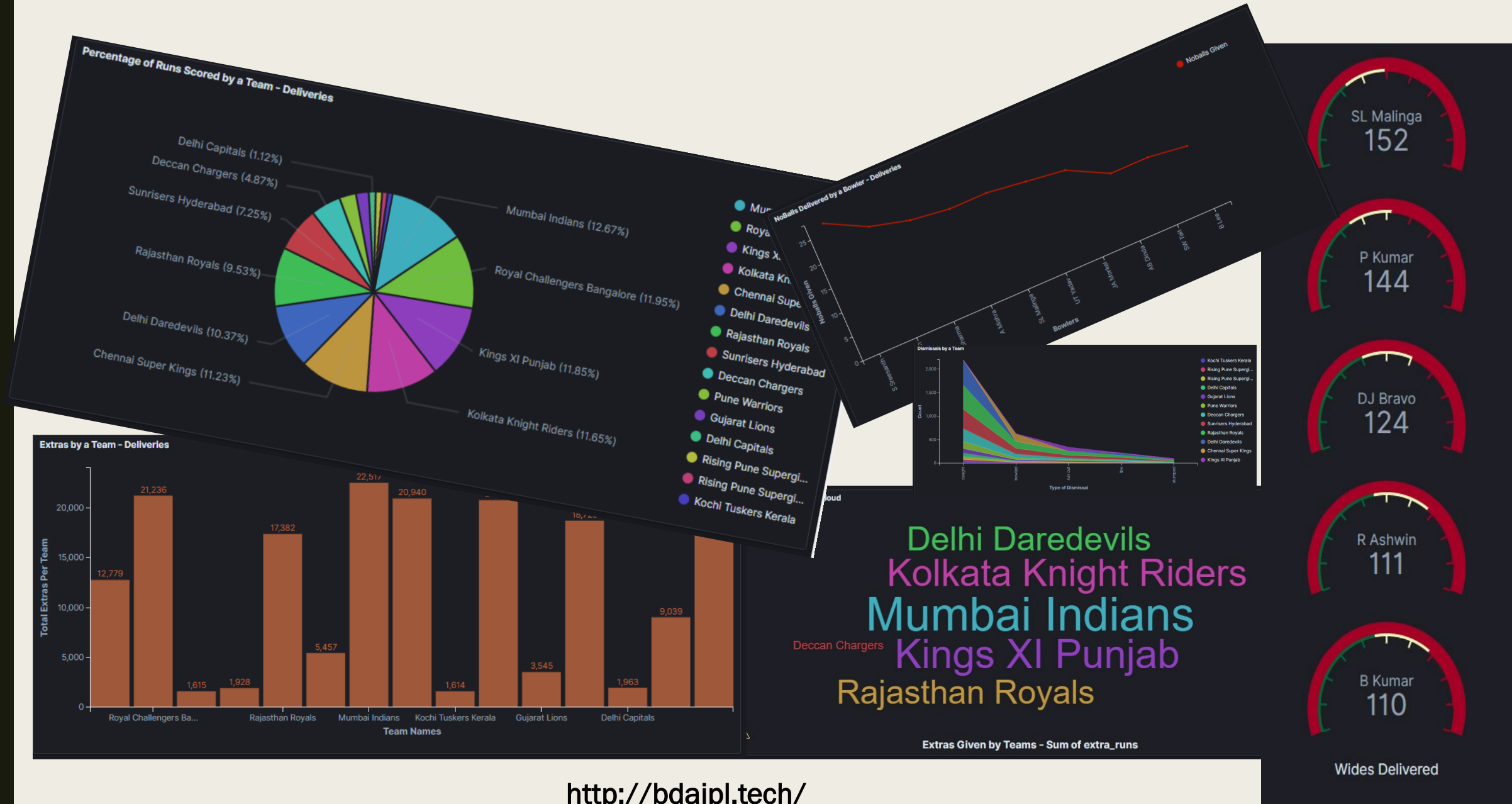




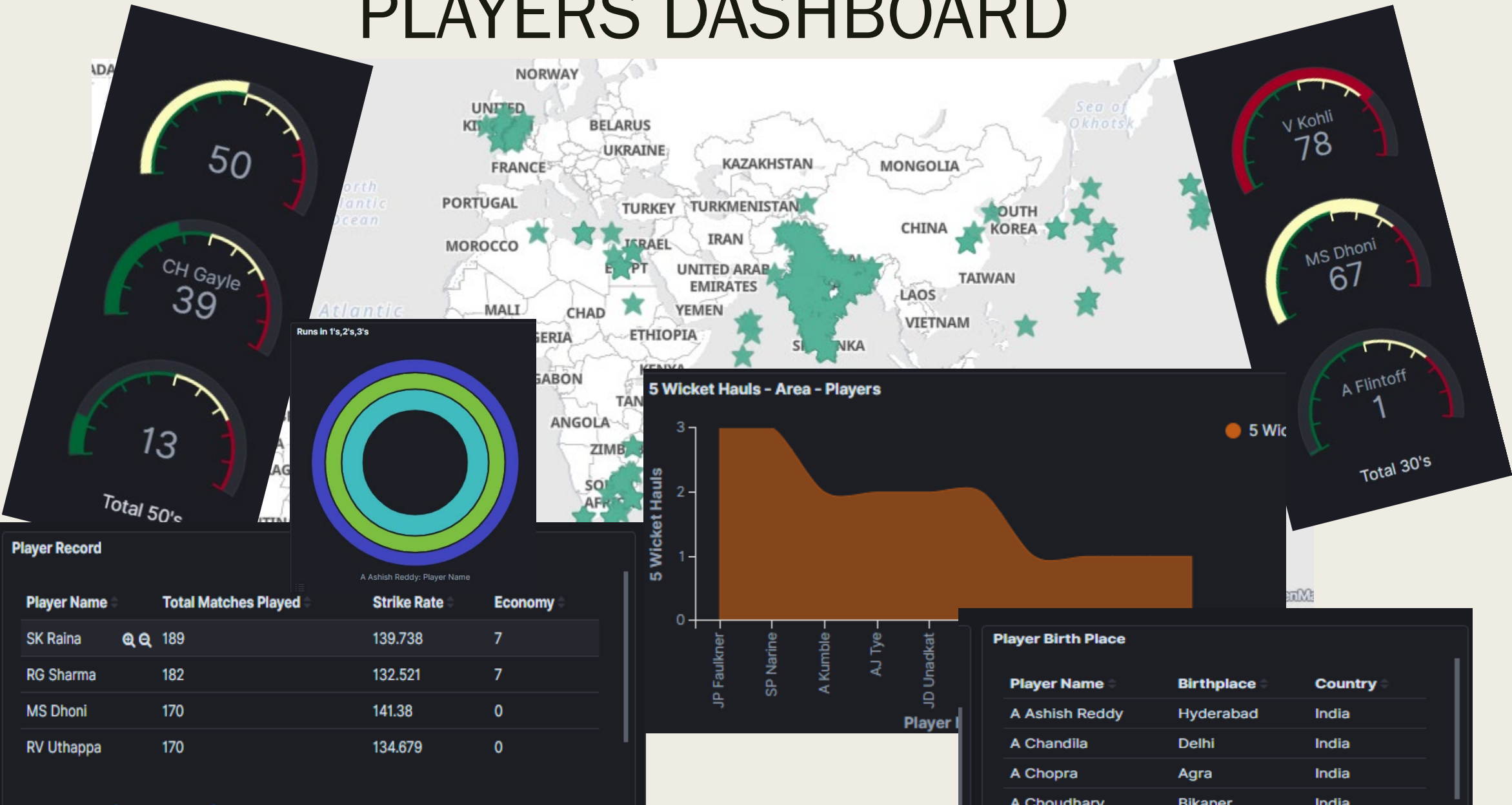
kibana

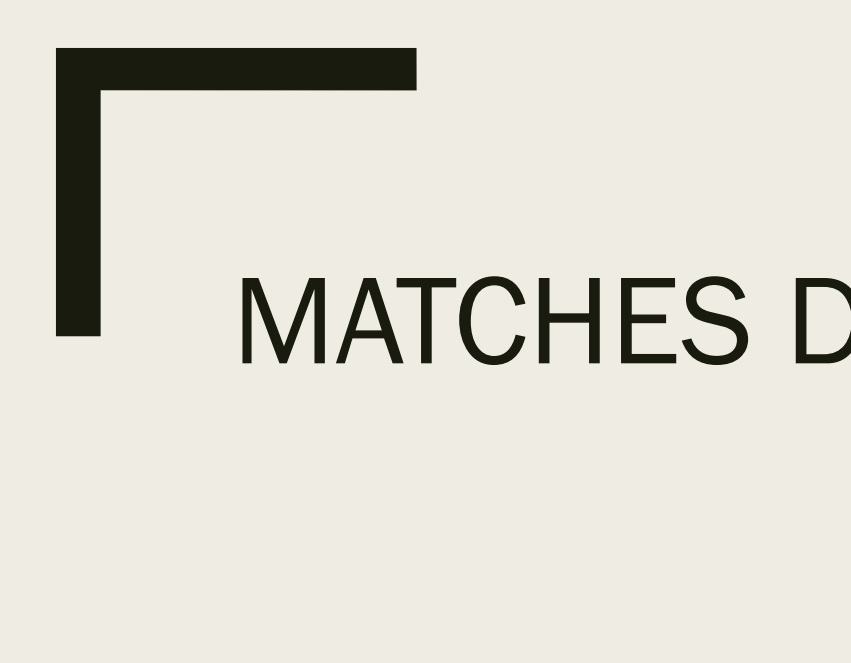
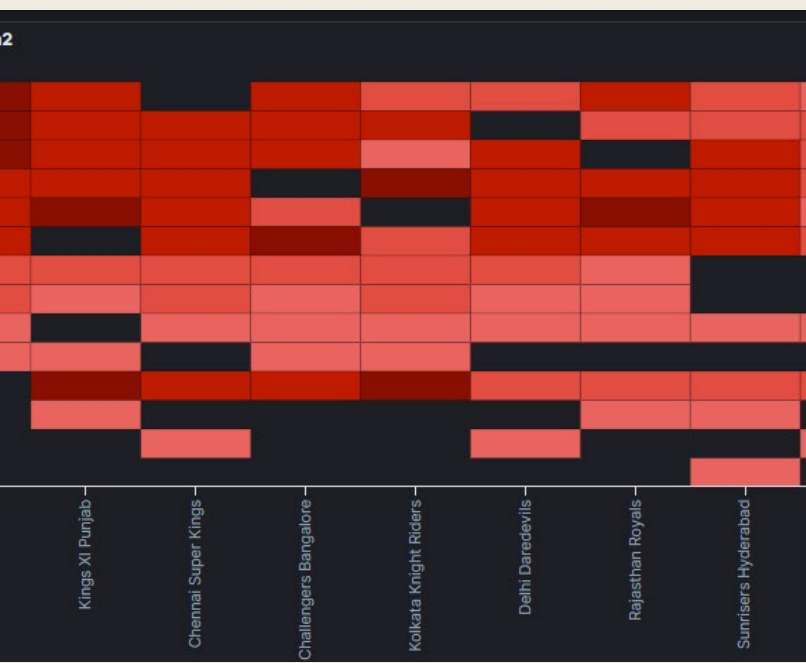
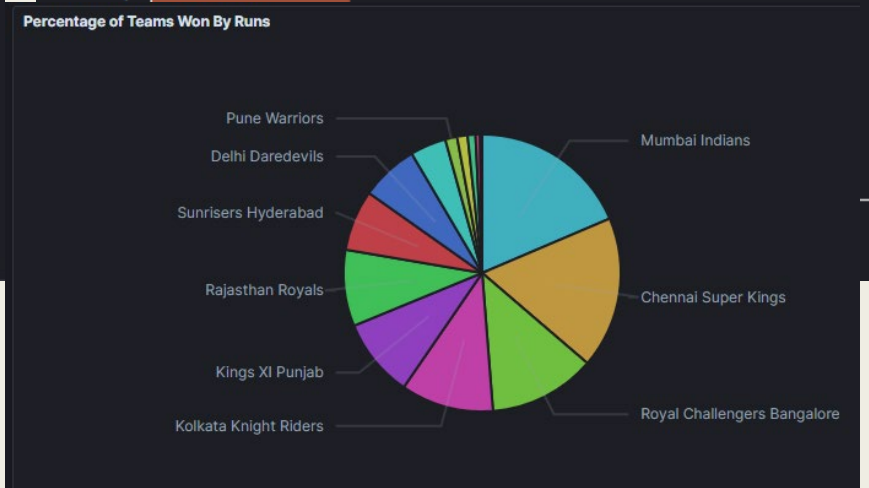
- Face of the project
- Dashboards are generated separately for each index.
- Visualizations such as Geo Tagging, Heatmaps, Custom Metrics, Pie Charts, Bar Graphs
- Filters applied on a visualization is applied across the dashboard

DELIVERIES DASHBOARD



PLAYERS DASHBOARD





MATCHES DASHBOARD



- Port Forwarding
- Forwards request received on 80 to the Kibana's listening port
- Making Kibana as face of the application



THANKS