Creating CountDracula
Open Source Count Management Tool

Lisa Zorn, Dan Tischler, Elizabeth Sall

SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
TRB 93rd Annual Meeting
Why?
Neighborhood Study
Why?

Consulting Engineer Data Request
Why?

Public Requests

Traffic-Related Reports

Collision Reports

Annual collision trends and analysis.

2010 - 2011 San Francisco Collisions Report (accessible PDF)

Traffic Counts

Traffic Counts (PDF): List of measured traffic counts on select street segments.

Transportation Fact Sheet
Why?
Dynamic Traffic Assignment Validation
Why?

Existing Resources
Requirements

• Store count data electronically in a single location
• Allow universal access
• Easy and intuitive queries
  • Times, date, or location
  • API or Web-based GUI
• Download data into commonly used data formats, e.g. UTDF
• Various levels of account permissions
• Straight forward user uploads
• Store meta-data
Development

- **Approach**
  - In-house development
  - Open source

- **Benefits**
  - Fulfill all design requirements
  - Share with others
  - Collaborative dev possibilities
  - Consultant flexibility
Design

- **Django**
  - Open source
  - Active dev community
  - Python-based
  - Object-relational mapper
  - Built-in admin interface
  - Elegant URL design
  - Customizable template views
- GeoDjango (add-on)
  - Spatial data types
  - Efficient spatial queries using PostGIS
Data Upload

![Excel Spreadsheet Image]

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Data Upload

Successfully uploaded 624 counts from Guerrero_16th.17th.xls!
Worksheet 2009.06.24 Vehicle= 2 Bike
Worksheet 2009.06.24 Vehicle= 5 Cars
Worksheet 2009.06.24 Vehicle= 6 2 Axle Long
Worksheet 2009.06.24 Vehicle= 4 Bus
Worksheet 2009.06.24 Vehicle= 7 2 Axle 6 Tire
Worksheet 2009.06.24 Vehicle= 8 3 Axle Single
Worksheet 2009.06.24 Vehicle= 9 4 Axle Single
Worksheet 2009.06.24 Vehicle=10 <5 Axle Double
Worksheet 2009.06.24 Vehicle=11 5 Axle Double
Worksheet 2009.06.24 Vehicle=12 >6 Axle Double
Worksheet 2009.06.24 Vehicle=13 <6 Axle Multi
Worksheet 2009.06.24 Vehicle=14 6 Axle Multi
Worksheet 2009.06.24 Vehicle=15 >6 Axle Multi
Worksheet 2009.07.01 Vehicle= 2 Bike
Worksheet 2009.07.01 Vehicle= 5 Cars
Worksheet 2009.07.01 Vehicle= 6 2 Axle Long
Worksheet 2009.07.01 Vehicle= 4 Bus
Worksheet 2009.07.01 Vehicle= 7 2 Axle 6 Tire
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Worksheet 2009.07.01 Vehicle=12 >6 Axle Double
Worksheet 2009.07.01 Vehicle=13 <6 Axle Multi
Worksheet 2009.07.01 Vehicle=14 6 Axle Multi
Worksheet 2009.07.01 Vehicle=15 >6 Axle Multi
Processed C:\CountDracula\uploads\Guerrero_16th.17th.xls into countdracula
Successfully saved 624 mainline counts

Choose an excel workbook with counts to upload below.

Sourcefile: [Choose File] no file selected
Data Models

- Nodes
  - location
- StreetName
  - name, suffix, nodes
- TurnCountLocation
  - from_street, from_dir, intersection_street, to_street, to_dir, node
- TurnCount
  - location, count, date, year, start_time, duration, veh_type, source, project, user
- MainlineCountLocation
  - street, dir, from_street, from_node, to_street, to_node
- MainlineCount
  - location, count, date, year, start_time, duration, veh_type, source, project, user, position_on_link
Data Models

Van Ness Ave

@3/13/2013 3p:
3 bikes in 60 min

30 bikes in 60 min

Market Street
CountDracula Today

Web-Based Interface
CountDracula Today

API

15-Minute Movement Volume

\[ y = 0.855x \]
\[ R^2 = 0.7591 \]

```python
def findDtaMovementForTurnCountLocation(sanfranciscoDynamoeqNet, turn_count_location):
    ...,
    Finds the DTA Movement for the given turn_count_location (a CountDracula TurnCountLocation instance).
    Returns None on failure; returns the Movement instance on success.

    try:
        movement = sanfranciscoDynamoeqNet.findMovementForRoadLabels(
            incoming_street_label = turn_count_location.from_street.nospace_name,
            incoming_direction = turn_count_location.from_dir,
            outgoing_street_label = turn_count_location.to_street.nospace_name,
            outgoing_direction = turn_count_location.to_dir,
            intersection_street_label = turn_count_location.intersection_street.nospace_name,
            roadnode_id = turn_count_location.intersection_id,
            remove_label_spaces = True,
            use_dir_for_movement = False, # use labels
            dir_needs_not_be_primary = True)
        dta.DtaLogger.debug("Found movement %d %d" % (movement.getIncomingLink().getId(), movement.getOutgoingLink().getId()))
        return movement
```
Count Dracula Today
Admin
Questions? Suggestions?
modeling@sfcta.org
https://github.com/sfcta/CountDracula
Objectives

UTDF

API

15-min: 3 trucks

60-min: 37 bicycles

5-min: 48 cars