

# Team Dine and Dash(board)

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# Recall

- **Aims:** provides a dashboard for visualizing data
- This web application is designed for the data analyst.

# Problem

- Flexible
  - various data types
  - it is easy to access to any data and save it after processing
- Feasible
  - able to meet the academic requirements
- Understandable
  - easy for data analyst to understand the 2D and 3D visualization

# Methods

- Interview
  - with customer colleagues; multiple times
- Prototype
  - design
- User testing
  - cognitive walkthrough, think aloud, heuristic evaluation

# So far...

- We have had Customer meetings
- Paper prototypes
- Hosted our website on the student server
- In process of developing a working website
- Completed the layout for all the processors
- Made 2D and 3D visualization with D3.js

# Screenshots

Import Data Stream Export Module

Untitled

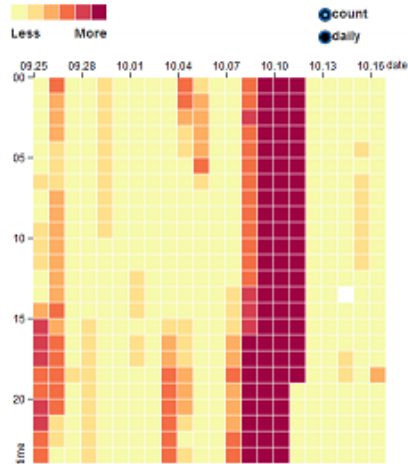
Processors

Visualizers

History



Analyst Dashboard



Filter Data

Data Stream: Stream 4

Value

Min: 0 Max: 100

Normalization Mode

Min: 0 Max: 100

Location

NorthEast Longitude: 0 NorthEast Latitude: 100  
SouthWest Longitude: 0 SouthWest Latitude: 100

Close Process

Group Data

Data Stream: Stream 1

Number of Groups: 1

Method:  Threshold  K-mean

Filter by price interval: \$ 10 \$ 1000

Close Process

2D Co-occurrence

Data Stream: Stream 1

Data Stream: Stream 2

Time Lag: Second

Value: Enter Value

Close Process

Aggregate Data

Data Stream: Stream 1

+DataStream

Aggregation Operators:  Sum  Average  Minimum  Maximum  Or  Convolution  And  Not  Subtraction  Multiply  Division

Normalization Mode

Minimum: 0 Maximum: 100

Close Process

3D Co-occurrence

Data Streams:

Stream 1: Stream 2: Stream 3:

Time Lag 1: Value Unit: Second

Time Lag 2: Value Unit: Second

Close Process

# Screenshots

The screenshot displays a software interface with a blue header and a white main area. At the top, there are two buttons: "Import Data Stream" and "Export Module". The title "Untitled" is centered, and a user icon is on the right. Below the header, there are three tabs: "Processors", "Visualizers", and "History". The "Visualizers" tab is active, showing three icons: a 3D pie chart, a blue hexagon with "2d", and a 3D cube. The 3D cube is the main focus, rendered with a rainbow color gradient. In the bottom-left corner, there is a small black box with "60 FPS (0-60)" and a performance graph. Below the graph, the word "board" is partially visible.

Import Data Stream   Export Module

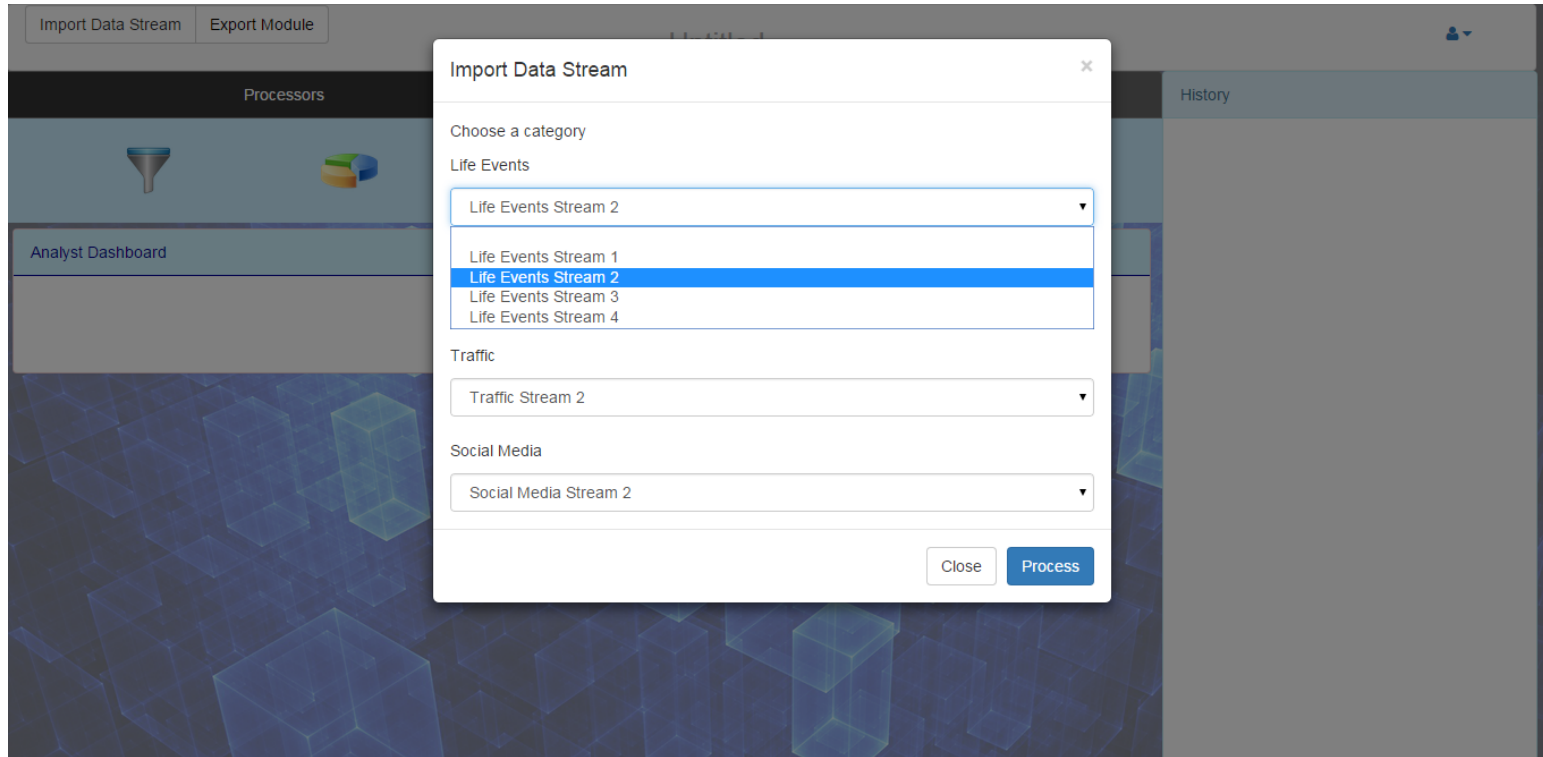
Untitled

Processors   Visualizers   History

60 FPS (0-60)

board

# Importing Data Streams





# Filter Data

The image shows a software interface for data processing. At the top, there are buttons for 'Import Data Stream' and 'Export Module'. Below this is a 'Processors' section with a funnel icon and a pie chart icon. The main area is an 'Analyst Dashboard' with a 3D cube visualization. A 'History' panel is visible on the right. A 'Filter Data' dialog box is open in the center, allowing users to filter data from 'Stream 1'. The dialog has three sections: 'Value', 'Normalization Mode', and 'Location'. Each section has 'Min' and 'Max' input fields, all of which are currently set to '0' and '100' respectively. The 'Location' section also includes 'NorthEast Longitude', 'NorthEast Latitude', 'SouthWest Longitude', and 'SouthWest Latitude' fields. At the bottom of the dialog are 'Close' and 'Process' buttons.

**Filter Data** [x]

Data Stream: Stream 1

Value

Min: 0 Max: 100

Normalization Mode

Min: 0 Max: 100

Location

NorthEast Longitude: 0 NorthEast Latitude: 100

SouthWest Longitude: 0 SouthWest Latitude: 100

Close Process

# Group Data

The image shows a software interface for data processing. At the top, there are buttons for "Import Data Stream" and "Export Module". Below these is a "Processors" section with two icons: a funnel and a 3D bar chart. An "Analyst Dashboard" is visible below the processors. On the right side, there is a "History" panel. A modal dialog box titled "Group Data" is open in the center, containing the following controls:

- Data Stream:** A dropdown menu currently set to "Stream 1".
- Number of Groups:** A dropdown menu currently set to "1".
- Method:** Two radio buttons, "Threshold" (which is selected) and "K-mean".
- Filter by price interval:** A range selector with "10" in the left input field and "1000" in the right input field, with a dollar sign (\$) on each side.
- Buttons:** "Close" and "Process".

The background of the interface features a pattern of blue, semi-transparent 3D cubes.

# Aggregate Data

The image shows a screenshot of a software interface with a modal dialog box titled "Aggregate Data". The background interface includes a top navigation bar with "Import Data Stream" and "Export Module" buttons, a "Processors" section with a funnel icon and a 3D bar chart, and a "History" panel on the right. The "Aggregate Data" dialog box contains the following elements:

- Data Stream:** A dropdown menu currently showing "Stream 1".
- +DataStream:** A button to add a new data stream.
- Aggregation Operators:** A list of radio buttons for selecting an operator: Sum, Average, Minimum, Maximum, Or, Convolution, And, Not, Subtraction, Multiply, and Division.
- Normalization Mode:** A checkbox that is currently unchecked.
- Minimum:** A text input field containing the value "0".
- Maximum:** A text input field containing the value "100".
- Buttons:** "Close" and "Process" buttons at the bottom right of the dialog.

# 2D Co-occurrence

The image shows a software interface with a modal dialog box titled "2D Co-occurrence". The background interface includes a top navigation bar with "Import Data Stream" and "Export Module" buttons, a "Processors" section with a funnel icon and a pie chart icon, an "Analyst Dashboard" section, and a "History" panel on the right. The dialog box contains the following fields:

- QID:** A dropdown menu with the value "1".
- Data Stream:** A dropdown menu with the value "es1".
- Data Stream:** A second dropdown menu with the value "es1".
- Time Lag:** A label followed by a dropdown menu with the value "Second".
- Value:** A text input field containing the placeholder text "Enter Value".

At the bottom right of the dialog box, there are two buttons: "Close" and "Process".

# 3D Co-occurrence

The image shows a software interface with a '3D Co-occurrence' dialog box. The background features a grid of semi-transparent blue 3D cubes. The interface includes a top navigation bar with 'Import Data Stream' and 'Export Module' buttons. Below this is a 'Processors' section with a funnel icon and a 3D pie chart icon. An 'Analyst Dashboard' section is visible below the processors. On the right, there is a 'History' panel. The '3D Co-occurrence' dialog box is centered and contains the following elements:

- Close button (X)
- Data Streams section with three dropdown menus: Stream 1, Stream 2, and Stream 3.
- Time Lag 1: Value [input field] Unit [Second]
- Time Lag 2: Value [input field] Unit [Second]
- Close button
- Process button

# Insights

- Application for analytics
  - Experience with new data sets and conditions
- Audience of professionals
  - Specific jargon and knowledge
  - Meaningful visualization
- Web application and its capabilities
  - HTML, CSS, JS, JQuery, D3

# Processor Difficulties (Programming)

- Creating the layout of the dashboard took the most time
- This included creating the processor icons and visualization icons
- Error checking and validating processor forms was a challenge

# Visualizer Difficulties (Programming)

- Parsing data has proven to be a challenge
- We are looking forward to creating a 2-D and 3-D visualization of data
- Finalizing all visualizations and gaining customer approval



# User Testing Difficulties

- Finding the time to test with users
- Finding the users to test
- Formalizing productive questions that will produce the best feedback
- Receiving diverse feedback

# Decision (User Studies)

- Conduct initial user study
- We plan on testing our prototype on 6-8 people
- Ideal users should have some background in data analysis.

# Decisions (cont.)

- Correct most prominent errors
- Conduct more user-testing
- Evaluate & update
- If time is available, implement least important features.

# Updated Timeline

## Week 9

- Finish coding (all)
- Start user testing (all)

## Week 10

- evaluate after user testing (all)
- write final report (all)
- finish the final product (all)

# Tasks Splitted

Chris, Alfonso - Visualizations

Ricky, Ran - Information Management, History

Jun - 2D Visualization, History