

Dashboard Data Visualizations

Derricko Swink

Interactive Data Table

Geolocation Chart

```
#####
# Dashboard Layout / View
#####
app = JupyterDash(__name__)

app.layout = html.Div([
    html.Div(id='hidden-div', style={'display': 'none'}),
    html.Center(html.B(html.H1('SNHU CS-340 Dashboard'))),
    html.Hr(),

    html.Div(className='buttonRow', style={'display': 'flex'}, children=[
        html.Button(id='submit-button-one', n_clicks=0, children='Cats'),
        html.Button(id='submit-button-two', n_clicks=0, children='Dogs')
    ]),

    dash_table.DataTable(
        id='datatable-id',
        columns=[{"name": i, "id": i, "deletable": False, "selectable": True} for i in df.columns],
        data=df.to_dict('records'),
        editable=False,
        filter_action="native",
        sort_action="native",
        sort_mode="multi",
        column_selectable=False,
        row_selectable="single",
        row_deletable=False,
        selected_columns=[],
        selected_rows=[0], # Ensures an initial selection
        page_action="native",
        page_current=0,
        page_size=10
    ),

    html.Br(),
    html.Hr(),

    # Placeholder for the geolocation chart
    html.Div(id='map-id', className='col s12 m6')
])
```

```

73 #####
74 # Interaction Between Components / Controller
75 #####
76
77 @app.callback(
78     Output('datatable-id', 'data'),
79     [Input('submit-button-one', 'n_clicks'),
80      Input('submit-button-two', 'n_clicks')]
81 )
82 def on_click(button1, button2):
83     df = pd.DataFrame.from_records(db.read({}))
84
85     if int(button1) > int(button2):
86         df = pd.DataFrame.from_records(db.read({"animal_type": "Cat"}))
87     elif int(button2) > int(button1):
88         df = pd.DataFrame.from_records(db.read({"animal_type": "Dog"}))
89
90     df.drop(columns=['_id'], inplace=True)
91     return df.to_dict('records')
92
93
94 @app.callback(
95     Output('map-id', 'children'),
96     [Input('datatable-id', 'data'),
97      Input('datatable-id', 'selected_rows')]
98 )
99 def update_map(viewData, selected_rows):
100     dff = pd.DataFrame.from_dict(viewData)
101
102     # Ensure a row is selected
103     if selected_rows is None or len(selected_rows) == 0:
104         row = 0
105     else:
106         row = selected_rows[0]
107
108     # Default coordinates if missing
109     lat, lon = 30.75, -97.48 # Austin TX
110     if 13 in dff.columns and 14 in dff.columns:
111         lat = dff.iloc[row, 13] if pd.notna(dff.iloc[row, 13]) else lat
112         lon = dff.iloc[row, 14] if pd.notna(dff.iloc[row, 14]) else lon
113
114     return dl.Map(style={'width': '1000px', 'height': '500px'},
115                  center=[lat, lon], zoom=10, children=[
116                      dl.TileLayer(id="base-layer-id"),
117                      dl.Marker(position=[lat, lon], children=[
118                          dl.Tooltip(dff.iloc[row, 4]),
119                          dl.Popup([
120                              html.H1("Animal Name"),
121                              html.P(dff.iloc[row, 9])
122                          ])
123                      ])
124                ])
125
126
127 app.run_server(debug=True)

```

MongoDB connection successful.

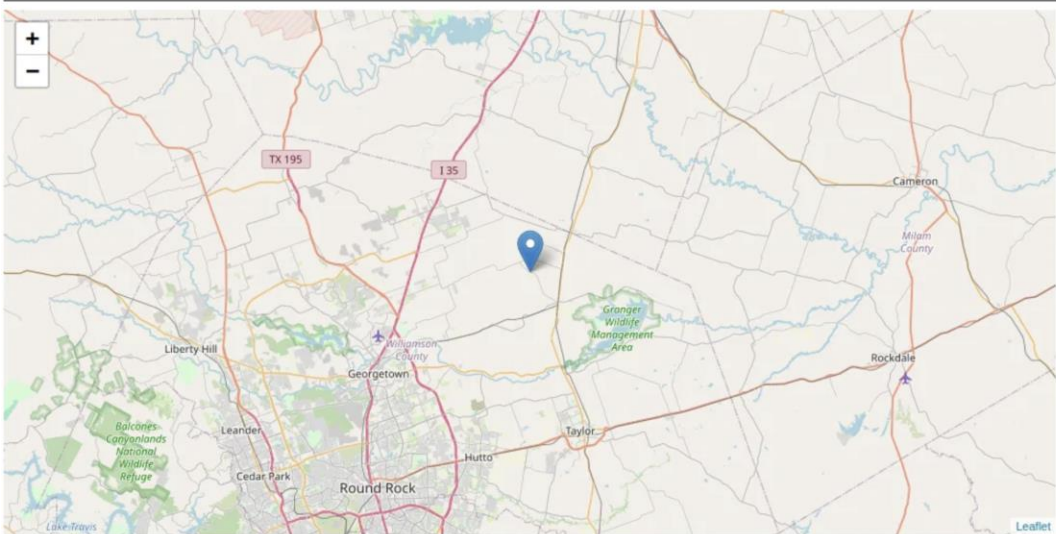
Dash app running on <http://127.0.0.1:14383/>

SNHU CS-340 Dashboard

CatsDogs

	rec_num	age_upon_outcome	animal_id	animal_type	breed	color	date_of_birth	datetime	monthyear	name	outcome_subty
	filter										
<input type="radio"/>	1	3 years	A746874	Cat	Domestic Shorthair Mix	Black/White	2014-04-10	2017-04-11 09:00:00	2017-04-11T09:00:00		Si
<input type="radio"/>	1	3 years	A746874	Cat	Domestic Shorthair Mix	Black/White	2014-04-10	2017-04-11 09:00:00	2017-04-11T09:00:00		Si
<input type="radio"/>	2	1 year	A725717	Cat	Domestic Shorthair Mix	Silver Tabby	2015-05-02	2016-05-06 10:49:00	2016-05-06T10:49:00		Si
<input type="radio"/>	2	1 year	A725717	Cat	Domestic Shorthair Mix	Silver Tabby	2015-05-02	2016-05-06 10:49:00	2016-05-06T10:49:00		Si
<input type="radio"/>	3	2 years	A716330	Dog	Chihuahua Shorthair Mix	Brown/White	2013-11-18	2015-12-28 18:43:00	2015-12-28T18:43:00	Frank	
<input type="radio"/>	3	2 years	A716330	Dog	Chihuahua Shorthair Mix	Brown/White	2013-11-18	2015-12-28 18:43:00	2015-12-28T18:43:00	Frank	
<input type="radio"/>	4	7 months	A733653	Cat	Siamese Mix	Seal Point	2016-01-25	2016-08-27 18:11:00	2016-08-27T18:11:00	Kitty	
<input type="radio"/>	4	7 months	A733653	Cat	Siamese Mix	Seal Point	2016-01-25	2016-08-27 18:11:00	2016-08-27T18:11:00	Kitty	
<input checked="" type="radio"/>	5	2 years	A691584	Dog	Labrador Retriever Mix	Tan/White	2012-11-06	2015-05-30 13:48:00	2015-05-30T13:48:00	Luke	
<input type="radio"/>	5	2 years	A691584	Dog	Labrador Retriever Mix	Tan/White	2012-11-06	2015-05-30 13:48:00	2015-05-30T13:48:00	Luke	

<<<1 / 1998>>>

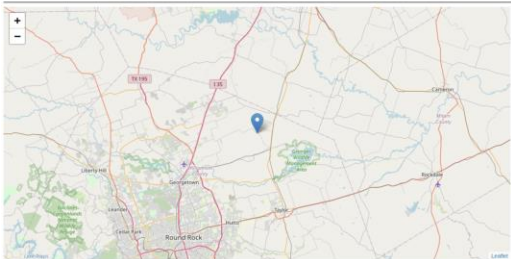


SNHU CS-340 Dashboard

CatsDogs

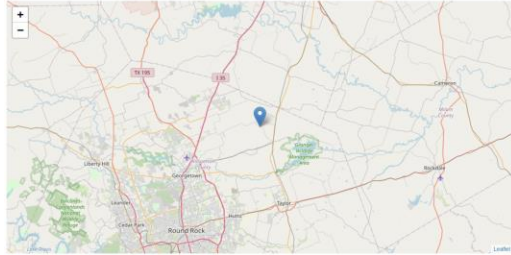
	rec_num	age_upon_outcome	animal_id	animal_type	breed	color	date_of_birth	datetime	monthyear	name	outcome_subtype	outcome_type	sex_upon_outcome	location_lat	location_long	age_upon_outcome_in_weeks	species	age	adopted
	filter data																		
<input type="radio"/>	66	6 months	A713150	Cat	Domestic Medium Hair Mix	Blue/White	2015-04-03	2015-10-04 09:00:00	2015-10-04T09:00:00		SCP	Transfer	Unknown	30.6490050542256	-97.390642081698	26.3392857142857			
<input type="radio"/>	66	6 months	A713150	Cat	Domestic Medium Hair Mix	Blue/White	2015-04-03	2015-10-04 09:00:00	2015-10-04T09:00:00		SCP	Transfer	Unknown	30.6490050542256	-97.390642081698	26.3392857142857			
<input type="radio"/>	67	12 years	A745946	Dog	Chihuahua Shorthair	White/Tan	2005-03-29	2017-08-07 12:47:00	2017-08-07T12:47:00		*Foodies	Foster	Adoption	Neutered Male	30.7803208911407	-97.5727489821515	644.933234126984		
<input type="radio"/>	67	12 years	A745946	Dog	Chihuahua Shorthair	White/Tan	2005-03-29	2017-08-07 12:47:00	2017-08-07T12:47:00		*Foodies	Foster	Adoption	Neutered Male	30.7803208911407	-97.5727489821515	644.933234126984		
<input type="radio"/>	68	4 years	A752436	Dog	Yorkshire Terrier Mix	Tricolor	2013-06-22	2017-06-23 16:48:00	2017-06-23T16:48:00		Rylie	Return to Owner	Neutered Male	30.588424963125	-97.5484862136154	286.95742897143			
<input type="radio"/>	68	4 years	A752436	Dog	Yorkshire Terrier Mix	Tricolor	2013-06-22	2017-06-23 16:48:00	2017-06-23T16:48:00		Rylie	Return to Owner	Neutered Male	30.588424963125	-97.5484862136154	286.95742897143			
<input type="radio"/>	69	3 years	A755549	Cat	Domestic Shorthair Mix	Brown Tabby/White	2013-04-30	2016-06-12 10:13:00	2016-06-12T10:13:00		Diz	Adoption	Spayed Female	30.549660302969	-97.3551182041893	162.823782519968			
<input type="radio"/>	69	3 years	A755549	Cat	Domestic Shorthair Mix	Brown Tabby/White	2013-04-30	2016-06-12 10:13:00	2016-06-12T10:13:00		Diz	Adoption	Spayed Female	30.549660302969	-97.3551182041893	162.823782519968			
<input type="radio"/>	70	3 months	A683276	Other	Raccoon Mix	Black/Gray	2014-04-06	2014-07-09 00:52:00	2014-07-09T00:52:00		Rabies Risk	Euthanasia	Unknown	30.5186746135761	-97.2826788031676	13.1956360260349			
<input type="radio"/>	70	3 months	A683276	Other	Raccoon Mix	Black/Gray	2014-04-06	2014-07-09 00:52:00	2014-07-09T00:52:00		Rabies Risk	Euthanasia	Unknown	30.5186746135761	-97.2826788031676	13.1956360260349			

<<<1 / 1998>>>



SNHU CS-340 Dashboard

Cats	Dogs	rec_num	age_upon_outcome	animal_id	animal_type	breed	color	date_of_birth	datetime	monthyear	name	outcome_subtype	outcome_type	sex_upon_outcome	location_lat	location_long	age_upon_outcome_in_weeks	species	age	adopted
<input type="radio"/>	<input type="radio"/>	195	1 year	A763668	Dog	Pit Bull Mix	White	2010-12-02	2010-01-09 17:46:00	2010-01-09T17:46:00	*Camris	Foster	Adoption	Spayed Female	30.3270551121256	-97.6846677801617	57.477182596825			
<input type="radio"/>	<input type="radio"/>	195	1 year	A763668	Dog	Pit Bull Mix	White	2010-12-02	2010-01-09 17:46:00	2010-01-09T17:46:00	*Camris	Foster	Adoption	Spayed Female	30.3270551121256	-97.6846677801617	57.477182596825			
<input type="radio"/>	<input type="radio"/>	197	2 years	A758439	Dog	Staffordshire Mix	Fawn	2015-09-16	2017-11-16 11:10:00	2017-11-16T11:10:00	Bae		Adoption	Spayed Female	30.5873786809374	-97.4444393338415	113.20932536825			
<input type="radio"/>	<input type="radio"/>	197	2 years	A758439	Dog	Staffordshire Mix	Fawn	2015-09-16	2017-11-16 11:10:00	2017-11-16T11:10:00	Bae		Adoption	Spayed Female	30.5873786809374	-97.4444393338415	113.20932536825			
<input type="radio"/>	<input type="radio"/>	198	8 years	A758897	Dog	Miniature Pinscher Mix	Black	2009-09-23	2017-09-24 14:50:00	2017-09-24T14:50:00	Dumpling	Partner	Transfer	Intact Female	30.4274482538333	-97.6948322897219	417.659722222222			
<input type="radio"/>	<input type="radio"/>	198	8 years	A758897	Dog	Miniature Pinscher Mix	Black	2009-09-23	2017-09-24 14:50:00	2017-09-24T14:50:00	Dumpling	Partner	Transfer	Intact Female	30.4274482538333	-97.6948322897219	417.659722222222			
<input type="radio"/>	<input type="radio"/>	203	5 years	A670612	Dog	Beagle	Brown/White	2011-09-04	2016-11-18 14:00:00	2016-11-18T14:00:00	Sheila		Return to Owner	Intact Female	30.2696279884557	-97.7111878422398	271.78841268413			
<input type="radio"/>	<input type="radio"/>	203	5 years	A670612	Dog	Beagle	Brown/White	2011-09-04	2016-11-18 14:00:00	2016-11-18T14:00:00	Sheila		Return to Owner	Intact Female	30.2696279884557	-97.7111878422398	271.78841268413			
<input type="radio"/>	<input type="radio"/>	204	3 years	A675567	Dog	Siberian Husky Mix	Black/White	2010-11-24	2014-03-30 08:56:00	2014-03-30T08:56:00	Lola		Return to Owner	Spayed Female	30.537356167583	-97.585474247887	174.624803174683			
<input type="radio"/>	<input type="radio"/>	204	3 years	A675567	Dog	Siberian Husky Mix	Black/White	2010-11-24	2014-03-30 08:56:00	2014-03-30T08:56:00	Lola		Return to Owner	Spayed Female	30.537356167583	-97.585474247887	174.624803174683			



SNHU CS-340 Dashboard

Cats	Dogs	rec_num	age_upon_outcome	animal_id	animal_type	breed	color	date_of_birth	datetime	monthyear	name	outcome_subtype	outcome_type	sex_upon_outcome	location_lat	location_long	age_upon_outcome_in_weeks	species	age	adopted
<input type="radio"/>	<input type="radio"/>	3	2 years	A716330	Dog	Chihuahua Shorthair Mix	Brown/White	2013-11-18	2015-12-28 18:43:00	2015-12-28T18:43:00	Frank									
<input type="radio"/>	<input type="radio"/>	9	3 years	A720214	Dog	Labrador Retriever Mix	Red/White	2013-02-04	2016-02-11 12:41:00	2016-02-11T12:41:00	Blessing									
<input checked="" type="radio"/>	<input type="radio"/>	11	1 year	A721199	Dog	Dachshund Wirehair Mix	Tan/White	2015-02-23	2016-02-27 17:49:00	2016-02-27T17:49:00	Belle									
<input type="radio"/>	<input type="radio"/>	12	1 year	A664843	Dog	Pit Bull Mix	Brown/White	2013-06-09	2014-08-18 17:24:00	2014-08-18T17:24:00	Sherlock									
<input type="radio"/>	<input type="radio"/>	15	3 years	A712638	Dog	Pit Bull Mix	Red/White	2012-09-26	2016-07-18 17:52:00	2016-07-18T17:52:00	Marcus									
<input type="radio"/>	<input type="radio"/>	14	2 years	A742287	Dog	Boxer/Bullmastiff	Brown Brindle/White	2015-01-18	2017-02-11 12:30:00	2017-02-11T12:30:00	*Kawhi									
<input type="radio"/>	<input type="radio"/>	16	5 years	A723742	Dog	Miniature Schnauzer Mix	Black/White	2011-04-05	2016-04-10 17:27:00	2016-04-10T17:27:00	Gretchen									
<input type="radio"/>	<input type="radio"/>	17	6 months	A668960	Dog	Pit Bull Mix	Blue/White	2013-06-12	2013-12-27 16:56:00	2013-12-27T16:56:00	*Gigi									
<input type="radio"/>	<input type="radio"/>	7	2 years	A673830	Dog	Pit Bull Mix	Black/White	2012-03-03	2014-03-19 15:15:00	2014-03-19T15:15:00	*Seth									
<input type="radio"/>	<input type="radio"/>	20	1 year	A693126	Dog	American Bulldog Mix	White/Brown	2013-12-02	2015-02-28 17:42:00	2015-02-28T17:42:00	George									

