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```
In [1]:    ▶| import warnings
              warnings.filterwarnings("ignore")
```

```
In [2]:    ▶| import wikipedia
              import networkx as nx
              import community
              import matplotlib.pyplot as plt
```

1. Create an edge list using the Wikipedia generator modules for any Wikipedia search term

```
In [3]:    ▶| wikipedia.set_lang("en")
              search_term = 'SR railway'
              page = wikipedia.page(search_term)
```

```
In [4]:    ▶| G = nx.DiGraph()
```

```
In [5]:    ▶| for link in page.links:
                  G.add_edge(search_term, link)
```

2. Find centrality Measures

In [6]:
```python
degree_centrality = nx.degree_centrality(G)
for node, degree_cent in degree_centrality.items():
    print(f"Node: {node}, Degree Centrality: {degree_cent}")
```
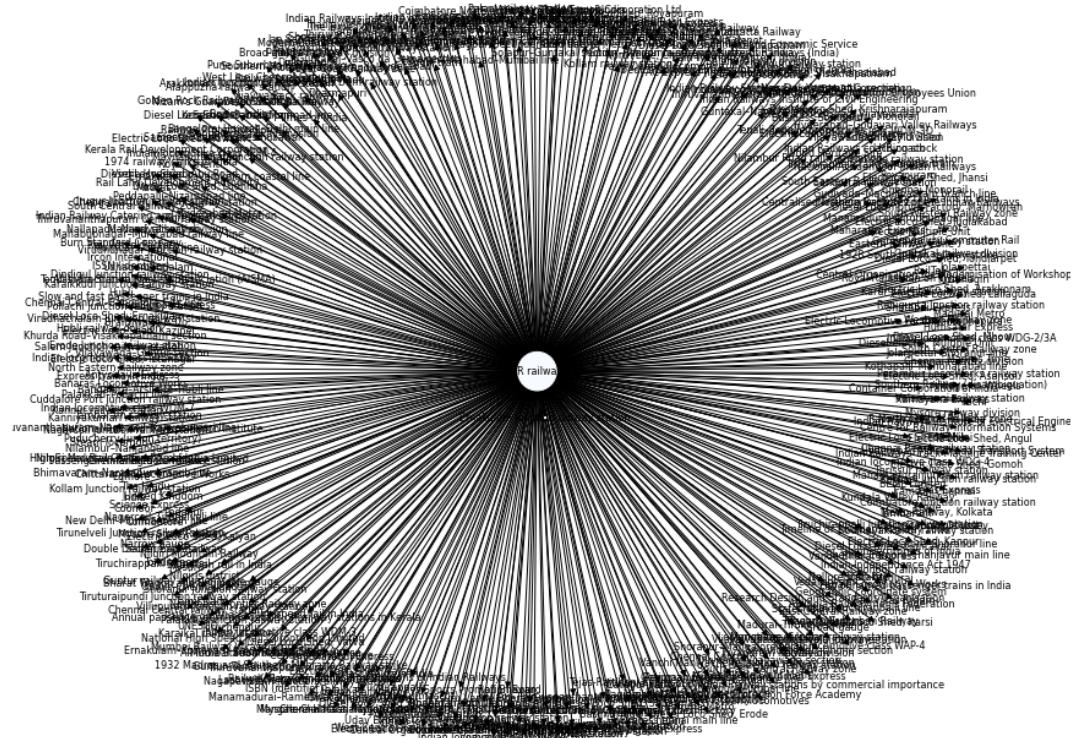
```
Node: SR railway, Degree Centrality: 1.0
Node: 1928 South Indian railway strike, Degree Centrality: 0.00209
64360587002098
Node: 1932 Madras and Southern Mahratta Railway strike, Degree Cen
trality: 0.0020964360587002098
Node: 1974 railway strike in India, Degree Centrality: 0.002096436
0587002098
Node: AC Express (Indian Railways), Degree Centrality: 0.002096436
0587002098
Node: Alappuzha railway station, Degree Centrality: 0.002096436058
7002098
Node: All India Railwaymen's Federation, Degree Centrality: 0.0020
964360587002098
Node: All India Station Masters' Association, Degree Centrality:
0.0020964360587002098
Node: All India Station Masters' Association (AISMA), Degree Centr
ality: 0.0020964360587002098
Node: Andaman and Nicobar Islands, Degree Centrality: 0.0020964360
587002098
```

In [7]:
```python
betweenness_centrality = nx.betweenness_centrality(G)
for node, betweenness_cent in betweenness_centrality.items():
    print(f"Node: {node}, Betweenness Centrality: {betweenness_cent}")
```

```
Node: SR railway, Betweenness Centrality: 0.0
Node: 1928 South Indian railway strike, Betweenness Centrality: 0.
0
Node: 1932 Madras and Southern Mahratta Railway strike, Betweennes
s Centrality: 0.0
Node: 1974 railway strike in India, Betweenness Centrality: 0.0
Node: AC Express (Indian Railways), Betweenness Centrality: 0.0
Node: Alappuzha railway station, Betweenness Centrality: 0.0
Node: All India Railwaymen's Federation, Betweenness Centrality:
0.0
Node: All India Station Masters' Association, Betweenness Centrali
ty: 0.0
Node: All India Station Masters' Association (AISMA), Betweenness
Centrality: 0.0
Node: Andaman and Nicobar Islands, Betweenness Centrality: 0.0
Node: Andhra Pradesh, Betweenness Centrality: 0.0
Node: Annual passenger earnings details of railway stations in Ker
ala, Betweenness Centrality: 0.0
Node: Anti-collision device, Betweenness Centrality: 0.0
```

In [12]:
```python
pos = nx.spring_layout(G, seed=42)
plt.figure(figsize=(12, 10))
nx.draw(G, pos, with_labels=False, node_size=100, node_color='skyblue',
degree_centrality_labels = {node: f'DC: {degree_centrality[node]:.2f}'
nx.draw_networkx_labels(G, pos, labels=degree_centrality_labels, font_s
betweenness_centrality_labels = {node: f'BC: {betweenness_centrality[no
nx.draw_networkx_labels(G, pos, labels=betweenness_centrality_labels, f
plt.savefig('wikipedia_network_with_centrality.png', dpi=300, bbox_inch
plt.show()
```
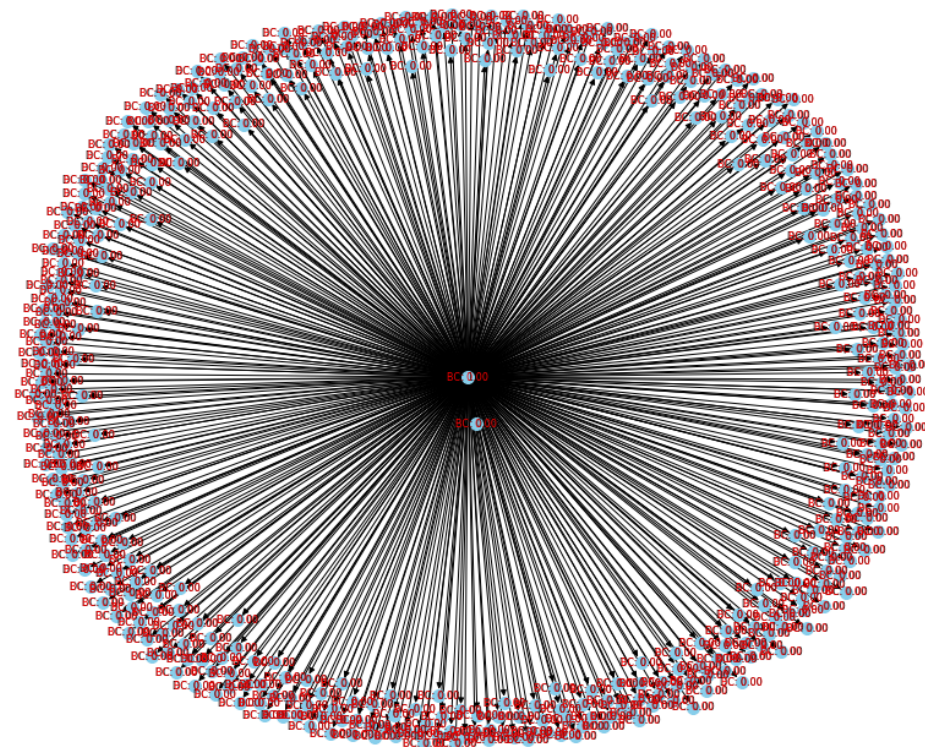
In [13]:
```python
degree_cent_values = [degree_centrality[node] for node in G.nodes()]
betweenness_cent_values = [betweenness_centrality[node] for node in G.r
node_size = [1000 * centrality for centrality in degree_cent_values]
node_color = betweenness_cent_values
pos = nx.spring_layout(G, seed=42)
plt.figure(figsize=(12, 10))
nx.draw(G, pos, with_labels=True, node_size=node_size, node_color=node_
plt.savefig('wikipedia_network_with_centrality1.png', dpi=300, bbox_inc
plt.show()
```


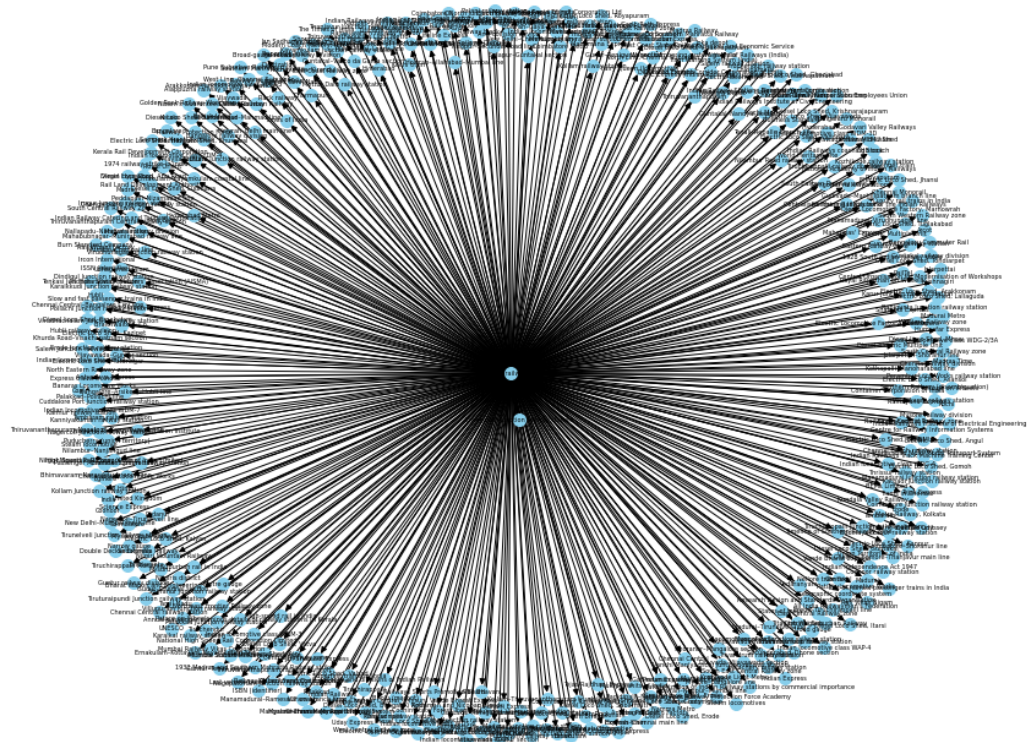3. Detect Communities from the create network

In [14]:
```python
partition = community.best_partition(G.to_undirected())
```

4. Submit your network generated through the LinkedIn post by tagging
   #100daysofnetwors hashtag

In [15]:
```python
plt.figure(figsize=(12,10))
pos = nx.spring_layout(G, seed=42)
nx.draw(G, pos, with_labels=True, node_size=100, node_color='skyblue',
plt.savefig('wikipedia_network.png', dpi=300, bbox_inches='tight')
plt.show()
```


In [ ]: