CSE 6242 Activity 5

Vincent La (Georgia Tech ID - vla6)

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Introduction

We will use the `igraph` package to visualize the graph data set.

The name of the Graph data is "Road networks" taken from the Stanford Large Network Dataset Collection. Specifically we will be analyzing the "California road network" (http://snap.stanford.edu/data/roadNet-CA.html). In this graph dataset, intersections and endpoints are represented by nodes and the roads connecting these intersections are represented by undirected edges.

Exploring The Graph Dataset

```
# Activity 3: http://cse6242.gatech.edu/fall-2017/ac5/
# To create zip file: zip ac5.zip ac5.Rmd ac5.pdf
require(igraph)
```

```
## Loading required package: igraph
```

```
##
## Attaching package: 'igraph'
```

```
## The following objects are masked from 'package:stats':
##
##     decompose, spectrum
```

```
## The following object is masked from 'package:base':
##
##     union
```

```
require(ggplot2)
```

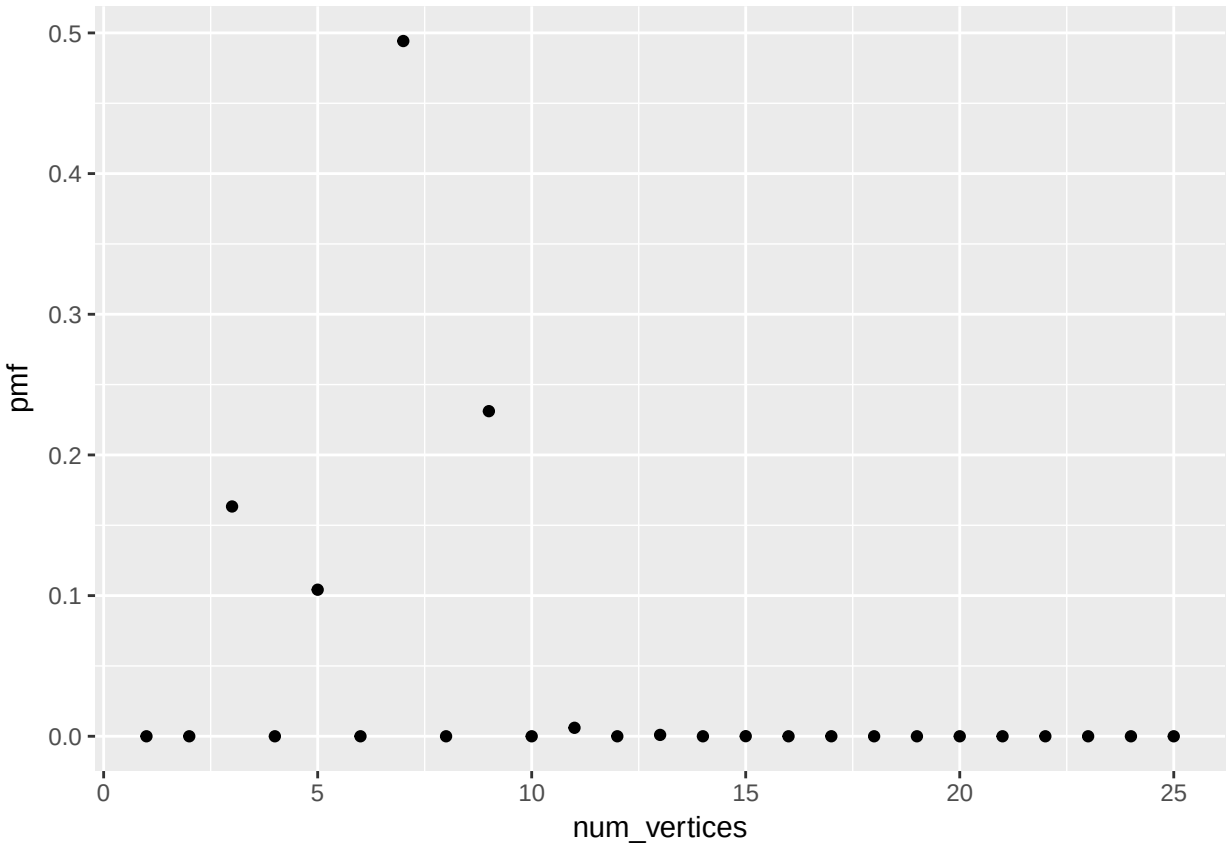
```
## Loading required package: ggplot2
```

```
setwd("~/git/GeorgiaTech/cse6242/activity_5")

ca_road_net <- read.table("roadNet-CA.txt")
ca_road_net <- graph.data.frame(ca_road_net)

# Number of edges
num_edges = ecount(ca_road_net)
num_vertices = vcount(ca_road_net)

# Looking at distribution of Degrees of Vertices
distribution_df = data.frame(num_vertices=1:length(degree_distribution(ca_road_net)), pmf=degree_distril
ggplot(distribution_df, aes(x=num_vertices, y=pmf)) +
  geom_point()
```


0.5
0.4
0.3
0.2
0.1
0.0
pmf
0
5
10
15
20
25
num_vertices