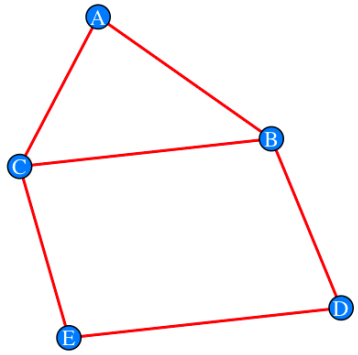
```
> # STA 352 HW1 Zishan (Bruce) Shao
>
> # (a) betweeness: edge & vertex
> # define the graph
> library(igraph)
> #g <- graph.formula(1-2,1-3,2-3,2-4,3-5,4-5)
> g <- graph.formula(A-B,A-C,B-C,B-D,C-E,D-E)
> E(g)
+ 6/6 edges from 04c9a39 (vertex names):
[1] A--B A--C B--C B--D C--E D--E
> plot(g, vertex.color="dodgerblue", vertex.label.color="white", edge.color="red", edge.width=2)
```




```
> # find out the betweeness of edges and nodes
> betweenness(g)
  A   B   C   D   E
0.0 1.5 1.5 0.5 0.5
> E(g)
+ 6/6 edges from 04c9a39 (vertex names):
[1] A--B A--C B--C B--D C--E D--E
> edge.betweenness(g)
[1] 2 2 2 3 3 2
>
>
> # (b) Compute the local clustering coefficients for the nodes.
> transitivity(g, "local")
[1] 1.0000000 0.3333333 0.3333333 0.0000000 0.0000000
>
>
> # (c) Compute the global clustering coefficients for the graph.
> transitivity(g)
[1] 0.3333333
```