

Supplementary Contents 1.

```

library(readxl)
library(gplots)
library(matrixStats)
library(igraph)
library(heplots)

#1. Normal
data2<-Diabetes
dat1<-data2
dat1 = dat1[dat1$group == "Normal", ]
var = c("relwt", "glufast", "glutest", "instest", "sspg")
dat1 = dat1[, var]
colnames(dat1) = c("relwt", "glufast", "glutest", "instest", "sspg")

#
cor_mat = cor(dat1)
cor_mat
cut_off_pcc = 0.2
diag(cor_mat) = 0
graph = graph.adjacency(cor_mat, weighted=TRUE, mode="lower")

#
g = delete.edges(graph, E(graph)[abs(weight) < cut_off_pcc])
g = simplify(g)
gsize(graph)
#node.shape#square#circle
V(g)$shape = "circle"

#degree
degree = degree(g, mode="all")
cut_off = quantile(degree, probs = c(0.333, 0.666))
idx1 = which(degree > cut_off[1])
idx2 = which(degree > cut_off[2])

#node1.color

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V(g)$color = adjustcolor("#5A822C", alpha.f = 1)
V(g)[idx1]$color = adjustcolor("#0060A1", alpha.f = 1)
V(g)[idx2]$color = adjustcolor("#ED003B", alpha.f = 1)

#node.size
V(g)$size = 8
V(g)[degree > cut_off[1]]$size = 12
V(g)[degree > cut_off[2]]$size = 14

#lable.size
V(g)$label.cex = 1
V(g)[degree > cut_off[1]]$label.cex = 1.5
V(g)[degree > cut_off[2]]$label.cex = 2

#label.color
V(g)$label.color = "grey30"

#
#E(g)$width = 2

#edge_color
idx1 = which(E(g)$weight < 0)
idx2 = which(E(g)$weight > 0)
E(g)[idx1]$color = adjustcolor("#5B89B4", alpha.f = 0.7)
E(g)[idx2]$color = adjustcolor("#CA7066", alpha.f = 0.7)

plot(g,
      vertex.frame.color = NA,
      vertex.label.degree = 0.5,
      edge.width = abs(E(g)$weight)*8,
      edge.arrow.size = 0,
      vertex.label.dist = 1.5
)

#2. Chemical_Diabetic
data2<-Diabetes

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dat1<-data2
dat1 = dat1[dat1$group == "Chemical_Diabetic", ]
#
var = c("relwt", "glufast", "glutest", "instest", "sspg")
dat1 = dat1[, var]
colnames(dat1) = c("relwt", "glufast", "glutest", "instest", "sspg")

#
cor_mat = cor(dat1)
cor_mat
cut_off_pcc = 0.2
diag(cor_mat) = 0
graph = graph.adjacency(cor_mat, weighted=TRUE, mode="lower")

#
g = delete.edges(graph, E(graph)[abs(weight) < cut_off_pcc])
g = simplify(g)
gsize(graph)
#node.shape#square#circle
V(g)$shape = "circle"

#degree
degree = degree(g, mode="all")
cut_off = quantile(degree, probs = c(0.333, 0.666))
idx1 = which(degree > cut_off[1])
idx2 = which(degree > cut_off[2])

#node.color
V(g)$color = adjustcolor("#5A822C", alpha.f = 1)
V(g)[idx1]$color = adjustcolor("#0060A1", alpha.f = 1)
V(g)[idx2]$color = adjustcolor("#ED003B", alpha.f = 1)

#node.size
V(g)$size = 8
V(g)[degree > cut_off[1]]$size = 12

```

```

V(g)[degree > cut_off[2]]$size = 14

#label.size
V(g)$label.cex = 1
V(g)[degree > cut_off[1]]$label.cex = 1.5
V(g)[degree > cut_off[2]]$label.cex = 2

#label.color
V(g)$label.color = "grey30"

#
#E(g)$width = 2

#edge_color
idx1 = which(E(g)$weight < 0)
idx2 = which(E(g)$weight > 0)
E(g)[idx1]$color = adjustcolor("#5B89B4", alpha.f = 0.7)
E(g)[idx2]$color = adjustcolor("#CA7066", alpha.f = 0.7)

plot(g,
      vertex.frame.color = NA,
      vertex.label.degree = 0.5,
      edge.width = abs(E(g)$weight)*8,
      edge.arrow.size = 0,
      vertex.label.dist = 1.5
)

#3. Overt_Diabetic
data2<-Diabetes
dat1<-data2
dat1 = dat1[dat1$group == "Overt_Diabetic", ]
#
var = c("relwt", "glufast", "glutest", "instest", "sspg")
dat1 = dat1[, var]
colnames(dat1) = c("relwt", "glufast", "glutest", "instest", "sspg")

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```
#
cor_mat = cor(dat1)
cor_mat
cut_off_pcc = 0.2
diag(cor_mat) = 0
graph = graph.adjacency(cor_mat, weighted=TRUE, mode="lower")

#
g = delete.edges(graph, E(graph)[abs(weight) < cut_off_pcc])
g = simplify(g)
gsize(graph)
V(g)$shape = "circle"

#degree
degree = degree(g, mode="all")
cut_off = quantile(degree, probs = c(0.333, 0.666))
idx1 = which(degree > cut_off[1])
idx2 = which(degree > cut_off[2])

#node.color
V(g)$color = adjustcolor("#5A822C", alpha.f = 1)
V(g)[idx1]$color = adjustcolor("#0060A1", alpha.f = 1)
V(g)[idx2]$color = adjustcolor("#ED003B", alpha.f = 1)

#node.size
V(g)$size = 8
V(g)[degree > cut_off[1]]$size = 12
```

```
V(g)[degree > cut_off[2]]$size = 14

#label.size
V(g)$label.cex = 1
V(g)[degree > cut_off[1]]$label.cex = 1.5
V(g)[degree > cut_off[2]]$label.cex = 2

#label.color
V(g)$label.color = "grey30"

#
#E(g)$width = 2

#edge_color
idx1 = which(E(g)$weight < 0)
idx2 = which(E(g)$weight > 0)
E(g)[idx1]$color = adjustcolor("#5B89B4", alpha.f = 0.7)
E(g)[idx2]$color = adjustcolor("#CA7066", alpha.f = 0.7)

plot(g,
      vertex.frame.color = NA,
      vertex.label.degree = 0.5,
      edge.width = abs(E(g)$weight)*8,
      edge.arrow.size = 0,
      vertex.label.dist = 1.5
    )
```