Bubble and Barplot

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Call libraries

```
library(ggplot2)
library(dplyr)
```

```
##
## Attaching package: 'dplyr'

## The following objects are masked from 'package:stats':
##
##     filter, lag

## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

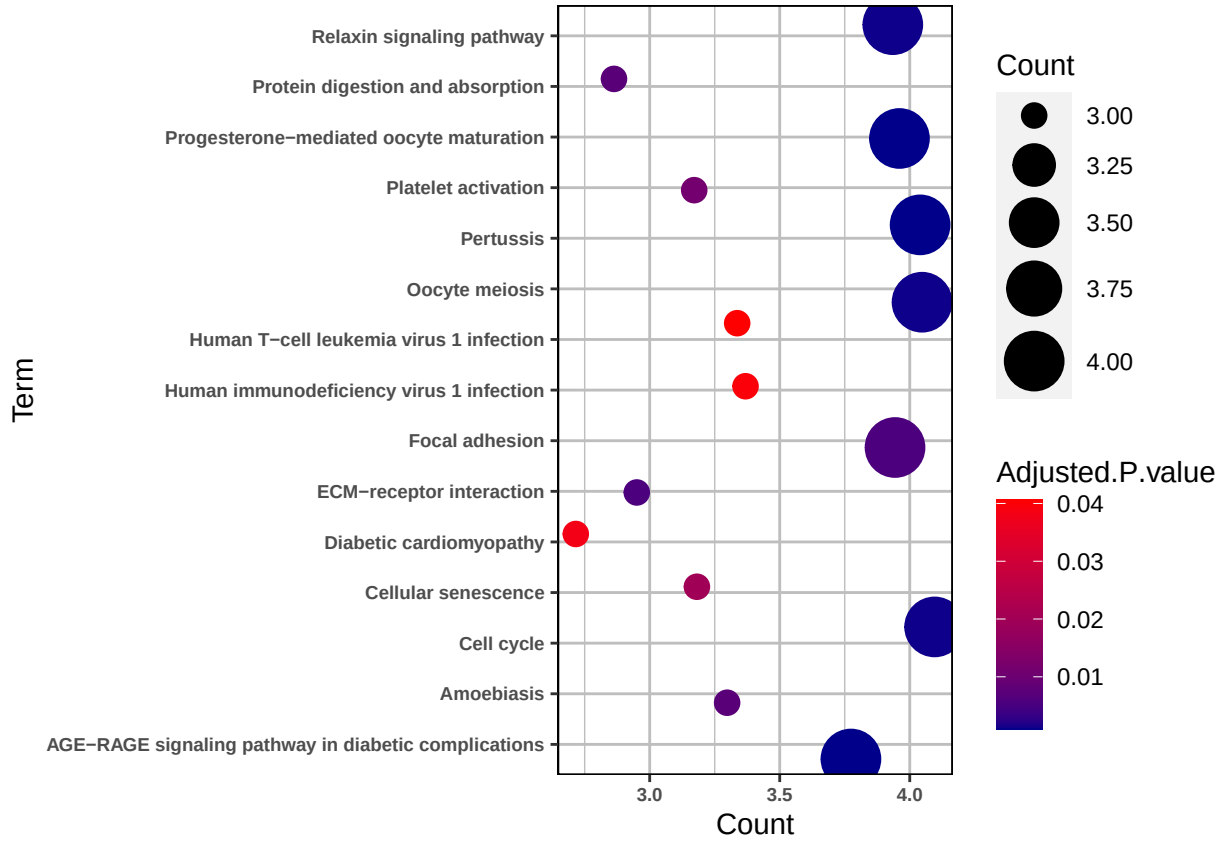
```
library(tidyverse)
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.1 --

## v tibble  3.2.1     v purrr   1.0.1
## v tidyr   1.3.0     v stringr 1.5.0
## v readr   2.1.2     v forcats 1.0.0

## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

```
library(tibble)
library(stringr)
library(RColorBrewer)
setwd('E:/R-Programming-Practices/Data Visualization/Bubble Plot')
```

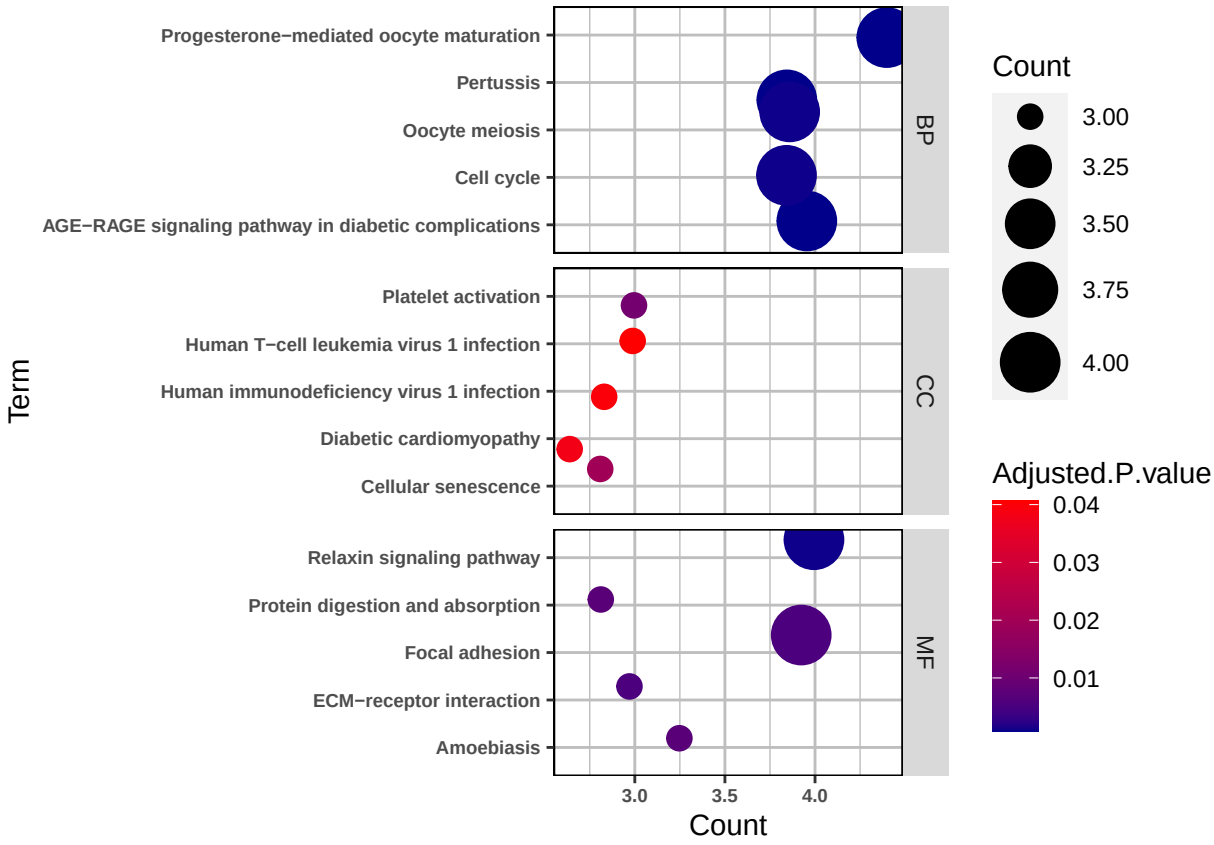
Bubble plot

```
data<- read.csv('KEGG.csv')
Plot1<- ggplot(data, aes(x=Count, y=Term, color=Adjusted.P.value,
          size=Count))+ geom_jitter()+scale_size_continuous(range=c(4,10)) + #theme_minimal()+
        scale_color_gradient(high = 'red', low = 'darkblue')+ theme(panel.border =
        element_rect(color='black', fill=NA), axis.text.x = element_text(size
        = 7, face = 'bold'), axis.text.y = element_text(size=7, face = 'bold'),
        panel.background = element_rect(fill = 'white'), panel.grid.minor =
        element_line(color='grey'), panel.grid.major = element_line(color='grey'))
Plot1
```



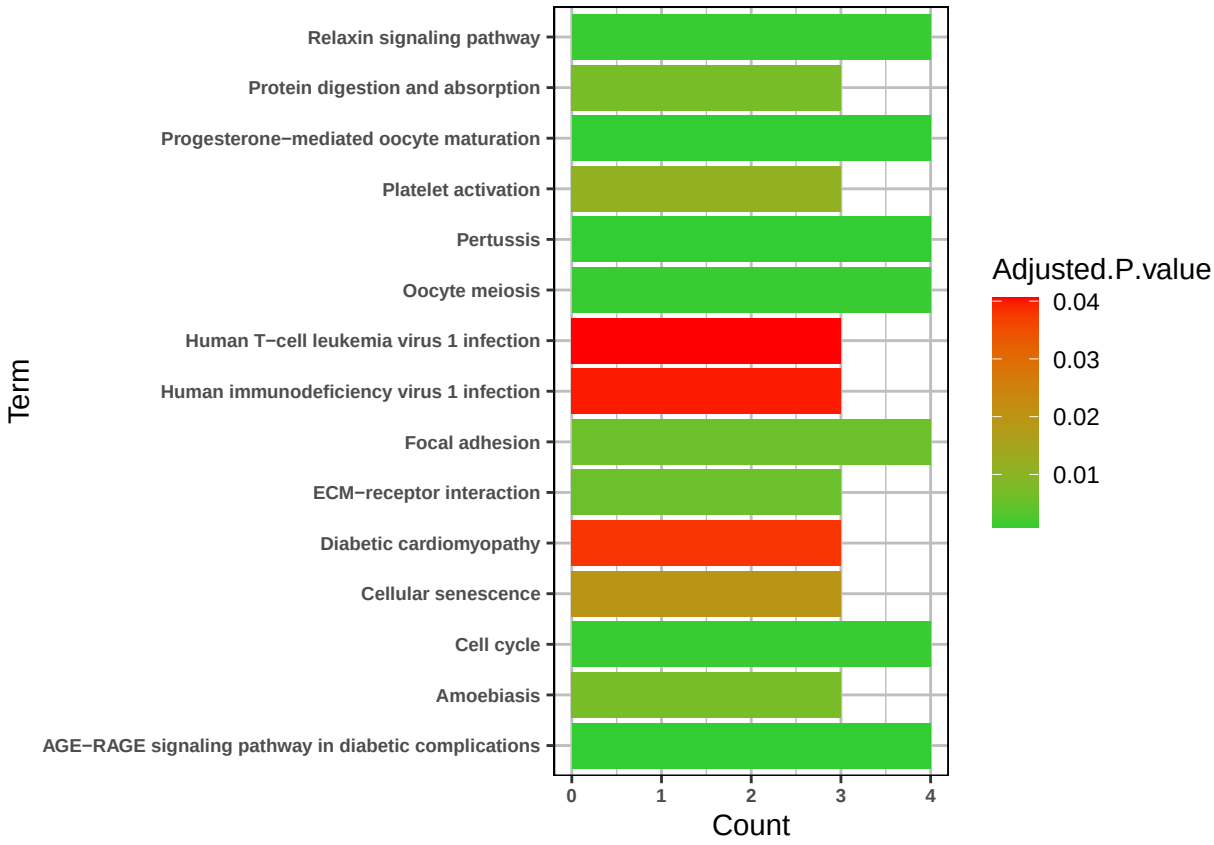
Use facet

```
Plot1<- Plot1+facet_grid(rows = 'Class',scales = 'free',   space = 'free')
Plot1
```



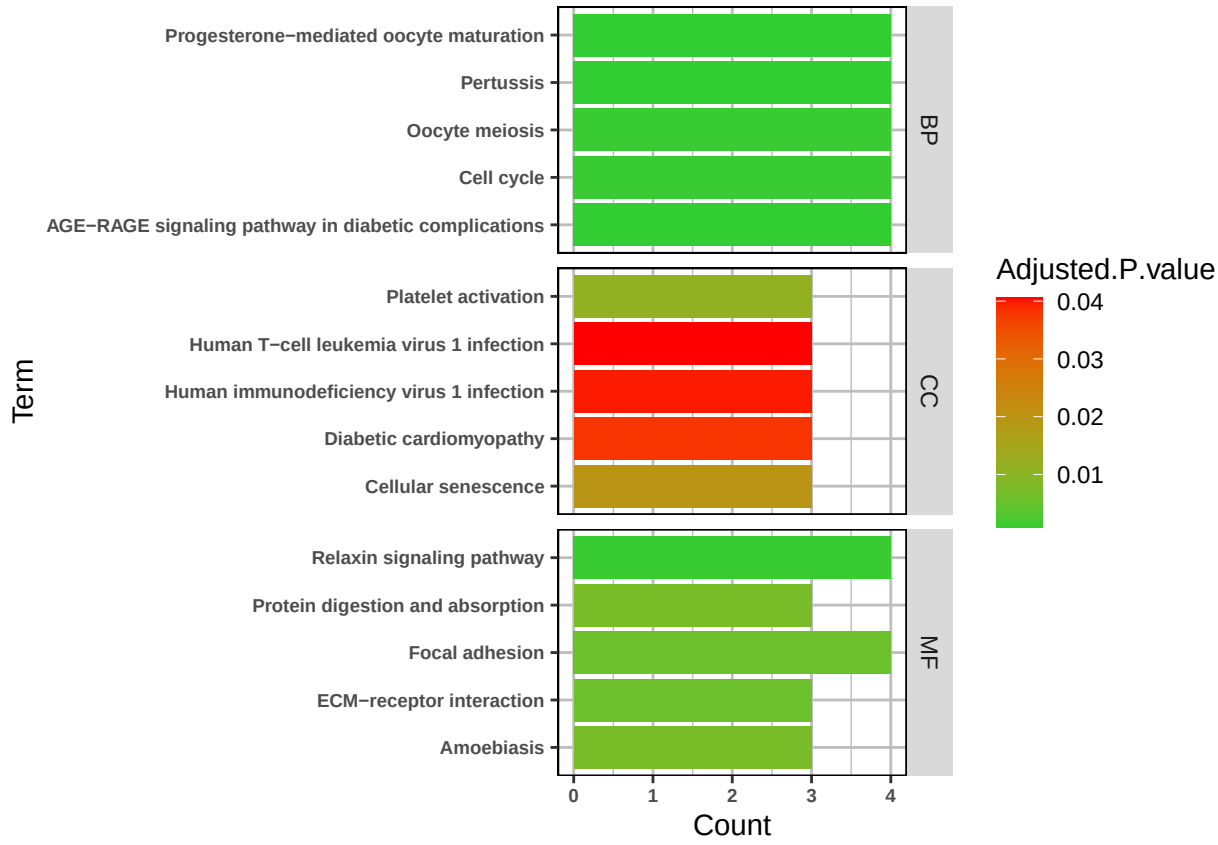
Barplot

```
Plot2<- ggplot(data, aes(x=Count, y=Term, fill=Adjusted.P.value))+
       geom_bar(stat = 'identity')+#+theme_minimal()
      scale_fill_gradient(high =
      'red', low = 'limegreen')+theme(panel.border =element_rect(color='black',
      fill=NA),axis.text.x = element_text(size= 7, face = 'bold'),axis.text.y
       = element_text(size=7, face = 'bold'), panel.background = element_rect(fill =
      'white'), panel.grid.minor = element_line(color='grey'), panel.grid.major =
        element_line(color='grey'))
Plot2
```



Use facet

```
Plot2<- Plot2+facet_grid(rows = 'Class',scales = 'free',   space = 'free')
Plot2
```

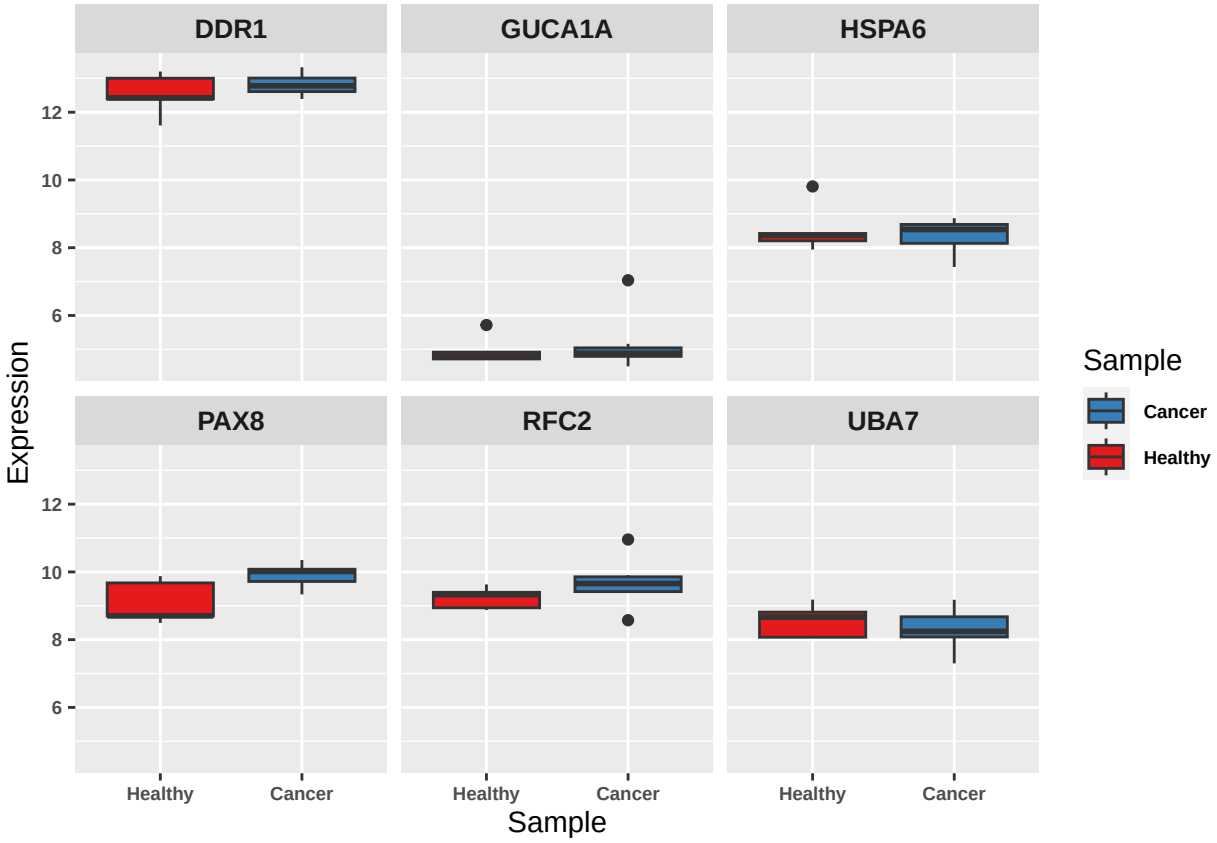


Use of facet wrap

```
data2<- read.csv('normalized_expression.csv')
data2<- data2[1:6,]
rownames(data2)<-data2[,1]
data2<-data2[,-1]
data2<- as.data.frame(t(data2))
data2<-rownames_to_column(data2)
colnames(data2)[1]<- 'Sample'
data2$Sample<- gsub('*\\.[0-9]','', as.character(data2$Sample))
data2<- data2 %>% pivot_longer(!Sample,names_to = "Gene", values_to='Expression')

Plot3<-ggplot(data2, aes(x=Sample,y=Expression, fill=Sample)) +
      geom_boxplot()+ facet_wrap(vars(Gene), ncol = 3)+ scale_fill_discrete(breaks
      =c('Healthy','Cancer'))+scale_x_discrete(limits=c('Healthy','Cancer'))+
      theme(axis.text.x =element_text(size= 7, face = 'bold'),axis.text.y  =
      element_text(size=7,face = 'bold'), strip.text=element_text(size=10,
      face='bold'),legend.text = element_text(size=7, face = 'bold'))+
      scale_fill_manual(values=c("#377EB8", '#E41A1C'))
```

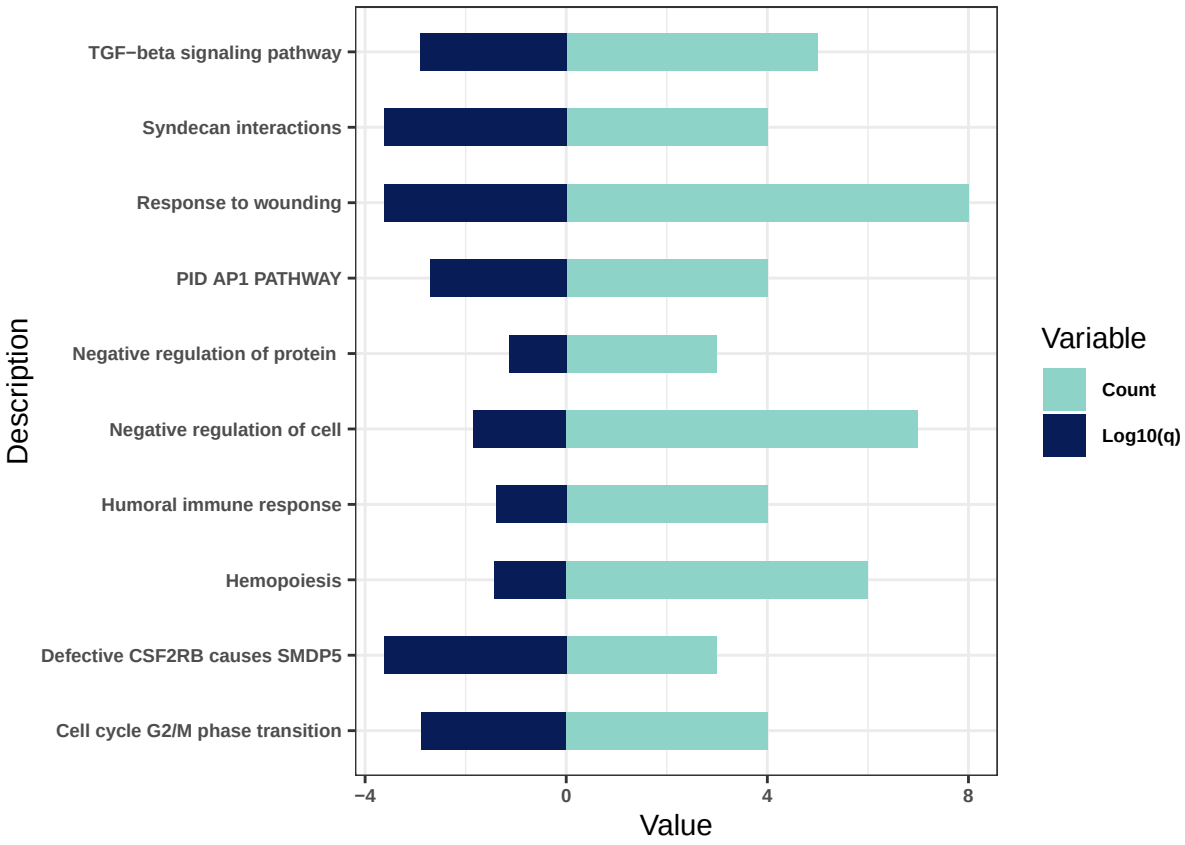
```
## Scale for fill is already present.
## Adding another scale for fill, which will replace the existing scale.
```

```
Plot3
```



Divergent plot

```
data3<- read.csv('Metascape_data.csv')
colnames(data3)[3]<- 'Variable'

Plot4<-ggplot(data3, aes(x=Value, y=Description, fill=Variable))+geom_bar(stat='identity',
       width=0.5)+ coord_fixed(ratio = 1.5)+theme_bw()+ theme(axis.text.x
      =element_text(size= 7, face = 'bold'),axis.text.y  =element_text(size=7,
      face = 'bold'),legend.text=element_text(size=7, face = 'bold'))+
      scale_fill_manual(values=c("#8DD3C7", '#081D58'))
Plot4
```


TGF−beta signaling pathway
Syndecan interactions
Response to wounding
PID AP1 PATHWAY
Negative regulation of protein
Negative regulation of cell
Humoral immune response
Hemopoiesis
Defective CSF2RB causes SMDP5
Cell cycle G2/M phase transition
Description
−4
0
4
8
Value
Variable
Count
Log10(q)