#!/usr/bin/env Rscript

suppressPackageStartupMessages(library("optparse"))

suppressPackageStartupMessages(library("stats"))

usage = "The prog is used to display Box of data,the box display from 1/4 to 3/4 of data,and a line to show the median data.

if there is whiskers,then it start from the edge of the box and extend to the furthest data point that is within 1.5 times the IQR

if there are any data points that are past the ends of the whiskers,they are considered outliers and displayed with dots.

Rscript %prog -f -t -n

example: Rscript %prog

-f CLIP\_Peak\_len

-t CLIP\_Peak\_len

-n CLIP\_Peak\_len

"

option\_list <- list(

make\_option(c("-f", "--file"),action = "store",type = "character",

help = "The Input file"),

make\_option(c("-t","--title"),action = "store",type = "character",

help = "The title of the plot"),

make\_option(c("-x","--xaxis"),action = "store",type = "character",default = "Location",

help = "The name of x-axis "),

make\_option(c("-y","--yaxis"),action = "store",type = "character",default = "Frequency of each base(%)",

help = "The name of y-axis"),

make\_option(c("-n", "--filename"),action = "store",type = "character",

help = "The name of outimage"),

make\_option(c("-o", "--outdir"),action = "store",type = "character",default = "./",

help = "The outdir")

)

opt <- parse\_args(OptionParser(option\_list = option\_list)) #####

setwd(opt$outdir) # Set the Outpath

###################################################################################

#### （Load Package）

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library(ggplot2)

library(reshape2)

library(plotrix)

library(methods)

library(gtable)

library(grid)

library(RColorBrewer)

###################################################################################

#### （Load Color）

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colour <- c('#85A2EF','#D285EF','#A2EF85','#4682B4','#A0522D','#87CEEB','#6B8E23','#6A5ACD','#E59B95','#EFD285','#B4B643','#2E9AFE','#A1DDBB','#FF8C00')

# colour1 <- brewer.pal(8,"Dark2")

#######data format sample###########################################################

# Type Peaks

# CLIP\_overlap 351

# CLIP\_overlap 111

# CLIP\_overlap 226

# CLIP\_overlap 316

# CLIP\_overlap 316

# CLIP\_overlap 486

# CLIP\_sp 346

# CLIP\_sp 321

# CLIP\_sp 91

# CLIP\_sp 291

# CLIP\_sp 236

# CLIP\_sp 216

# CLIP\_sp 191

#####################################################################################

######Instruction for data#######

#first column is the X axis---discrete data

#second column is the Y axis to plot -- continuous data

#the data is to display the summary about X axis data

#################################

###################################################################################

##（Deal with Data）

data <- read.table(file= opt$file,header = T)##### must with header

title <- gsub('\_',' ',opt$title)

colname <- colnames(data)

dim\_data <- dim(data)

Item <- factor(data[,1],levels = unique(data[,1]))

x\_axis = gsub('\_',' ',opt$xaxis)

y\_axis = gsub('\_',' ',opt$yaxis)

###Plot Theme for ABLife

###theme(),Tha last term without comma

##################################################################################

ablife\_theme\_line <- function(base\_size = 12){

library(grid) ####for using unit function

theme(

plot.title = element\_text(size = 12,lineheight = 100,colour = "black",hjust = 0.5),

# axis.text.x=element\_text(angle=75,hjust=1,size = 5,colour = "black"),

axis.title.x = element\_text(size = 12,colour = "black"),

axis.text.y = element\_text(size = 12 ,colour = "black"),

axis.title.y = element\_text(size = 12,colour = "black"),

panel.background = element\_rect(colour = "black"),

legend.title = element\_text(size = 12),

legend.text = element\_text(size = 12),

strip.text.x = element\_text(colour = "black",size = "8"),

strip.background = element\_rect(colour = "black")

)

}

##################################################################################

###Plot by ggplot2

ggplot(data)+

geom\_boxplot(aes(x = Item,y=data[,2],stat = "identity",fill = Type))+

labs(title = title,y = y\_axis , x = x\_axis)+

# facet\_grid(. ~ Sex,scales = "free\_x",space="free") +

theme(axis.text.x=element\_text(angle=60,hjust=1,size = 12,colour = "black"),

axis.ticks.x = element\_blank(),

legend.position="none"

# legend.position = c(0.3, 0.92),

# legend.direction = "horizontal"

) +

ablife\_theme\_line()+

# # scale\_y\_continuous(limits=c(0,100))+ scale\_colour\_hue(name=opt$legend\_name)

# scale\_colour\_manual("Sample Name",values = colour[1:length(sample)])

# scale\_fill\_discrete(name="Sample\_name")

###Save Plot File

ggsave(file = paste(opt$filename,"box.pdf",sep='\_'), width = 105,height =150 ,dpi = 450,units = "mm")

ggsave(file = paste(opt$filename,"box.png",sep='\_'), width = 105,height =150 ,dpi = 450,units = "mm")

# ggplot(data)+

geom\_jitter(alpha=I(1/4),aes(x = Item,y=data[,2],stat = "identity",colour = Type))+

# labs(title = title,y = y\_axis , x = x\_axis)+

# # facet\_grid(. ~ Sex,scales = "free\_x",space="free") +

# theme(axis.text.x=element\_text(angle=60,hjust=1,size = 12,colour = "black"),

# axis.ticks.x = element\_blank(),

# legend.position="none"

# # legend.position = c(0.3, 0.92),

# # legend.direction = "horizontal"

# ) +

# ablife\_theme\_line()+

# # # scale\_y\_continuous(limits=c(0,100))+

# scale\_colour\_hue(name=opt$legend\_name)

# # scale\_colour\_manual("Sample Name",values = colour[1:length(sample)])

# # scale\_fill\_discrete(name="Sample\_name")

# ggsave(file = paste(opt$filename,"jitter.pdf",sep='\_'), width = 105,height =150 ,dpi = 450,units = "mm")

# # ggsave(file = paste(opt$filename,".pdf",sep=''), width = 12,height = 8,dpi = 450)

# ggplot(data)+

# geom\_density(alpha = 0.8,aes(x = Item,stat = "identity",fill=Type))+

# labs(title = title,y = y\_axis , x = x\_axis)+

# theme(axis.text.x=element\_text(angle=60,hjust=1,size = 12,colour = "black"),

# axis.ticks.x = element\_blank(),

# legend.position="none"

# # legend.position = c(0.3, 0.92),

# # legend.direction = "horizontal"

# ) +

# ablife\_theme\_line()+

# # # scale\_y\_continuous(limits=c(0,100))+

# scale\_colour\_hue(name=opt$legend\_name)

# # scale\_colour\_manual("Sample Name",values = colour[1:length(sample)])

# # scale\_fill\_discrete(name="Sample\_name")

# ggsave(file = paste(opt$filename,"density.pdf",sep='\_'), width = 105,height =150 ,dpi = 450,units = "mm")

# # ggsave(file = paste(opt$filename,".pdf",sep=''), width = 12,height = 8,dpi = 450)

# ggplot(data)+

# geom\_violin(aes(x = Item,y=data[,2],stat = "identity",fill=Type))+

# labs(title = title,y = y\_axis , x = x\_axis)+

# theme(axis.text.x=element\_text(angle=60,hjust=1,size = 12,colour = "black"),

# axis.ticks.x = element\_blank(),

# legend.position="none"

# # legend.position = c(0.3, 0.92),

# # legend.direction = "horizontal"

# ) +

# ablife\_theme\_line()+

# # # scale\_y\_continuous(limits=c(0,100))+ =

# scale\_colour\_hue(name=opt$legend\_name)

# # scale\_colour\_manual("Sample Name",values = colour[1:length(sample)])

# # scale\_fill\_discrete(name="Sample\_name")

# ggsave(file = paste(opt$filename,"violin.pdf",sep='\_'), width = 105,height =150 ,dpi = 450,units = "mm")

# # ggsave(file = paste(opt$filename,".pdf",sep=''), width = 12,height = 8,dpi = 450)

# ggplot(data,aes(x=Item,y=data[,2]))+

# geom\_violin(aes(fill=Type))+

# geom\_boxplot(width=.1,fill = "black",outlier.colour=NA)+

# stat\_summary(fun.y=median,geom="point",fill="white",shape=21,size=2.5)+

# labs(title = title,y = y\_axis , x = x\_axis)+

# theme(axis.text.x=element\_text(angle=60,hjust=1,size = 12,colour = "black"),

# axis.ticks.x = element\_blank(),

# legend.position="none"

# # legend.position = c(0.3, 0.92),

# # legend.direction = "horizontal"

# ) +

# ablife\_theme\_line()+

# # # scale\_y\_continuous(limits=c(0,100))+

# scale\_colour\_hue(name=opt$legend\_name)

# # scale\_colour\_manual("Sample Name",values = colour[1:length(sample)])

# # scale\_fill\_discrete(name="Sample\_name")

# ggsave(file = paste(opt$filename,"violin\_median.pdf",sep='\_'), width = 105,height =150 ,dpi = 450,units = "mm")

# # ggsave(file = paste(opt$filename,".pdf",sep=''), width = 12,height = 8,dpi = 450)