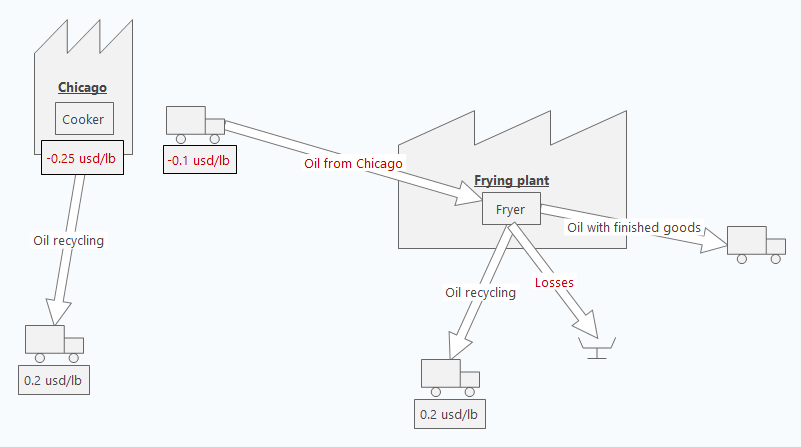
##Oil shipping savings OH

##To calculate week by week the savings on oil shipping after the installation of the oil recovery tanks at Ohio the plant



##Data needed:

##Fat consumption file sent by DAVID S, "fat.csv"

##main productivity file, from MS Access, "2 2) Fior all data.csv"

##Used oil from NAV, "usedoil.csv"

##Oil production and shipping costs and sales revenue, usd/lb

##setwd as R

**oilcost<-function(){**

##0.05 usd/lb is the cost of oil shipped, 0.25usd/lb cost of production (as per David M, March 2018), 0.207 recycling revenue

library(tidyr)

library(readr) ## parse\_number… incluso de factors

library(stringr)

library(varhandle)

library(assertthat)

library(dplyr)

library(lubridate)

##help(package = lubridate)

library(quantmod)

library(reshape2)

library(magrittr)

library(grDevices)

library(RColorBrewer)

library(ggplot2)

library(lattice)

library(datasets)

library(swirl)

opc<-0.25

osc<-0.05

osale<-0.207

##input the necessary data

yp\_fg<-read.csv("2 2) Fior all data.csv")

fat<-read.csv("Fat.csv")

##usedoil<- read.csv("usedoil.csv")

##usedoil$weekc=as.Date(usedoil$Posting.Date,"%m/%d/%Y")+1-wday(as.Date(usedoil$Posting.Date,"%m/%d/%Y"))

##usedoil$qsold<-parse\_number(usedoil$Quantity)

##usedoil\_weekc<-summarize(group\_by(usedoil,weekc),wqsold=sum(qsold,na.rm=T))

##select OH from both files, and the columns of interest

fatoh<-select(fat[grep("OH",as.character(fat$Location),ignore.case=TRUE),],1:11)

fatoh<-transform(fatoh,weekc=as.Date(WeekC, "%m/%d/%Y"))

ypoh<-select(yp\_fg[grep("OH",as.character(yp\_fg$Location),ignore.case=TRUE),],Location,Date, PS.Total.FG.LBS,PS.Actual.FG.LBS,PS.Fried.Lbs,CR.TT.Fried.Lbs,CR.TT.Finished.Goods.Lbs,TT.Finished.Goods.Lbs.Total,WeekC)

ypoht<-transform(ypoh,date=as.Date(Date,"%d-%b-%y"),weekc=as.Date(WeekC, "%d-%b-%y"))

ypohw<-summarize(group\_by(ypoht,Location,weekc),fglb=sum(TT.Finished.Goods.Lbs.Total,na.rm=T),psalb=sum(PS.Actual.FG.LBS,na.rm=T),crlb=sum(CR.TT.Finished.Goods.Lbs,na.rm=T))

##merge both tables into one

foroil<- merge(fatoh,ypohw,by.x="weekc",by.y="weekc",all.x=FALSE,no.dups=TRUE)

##foroil<- merge(foroil\_prev,usedoil\_weekc,by.x="weekc",by.y="weekc",all.x=FALSE,no.dups=TRUE)

##Extract the rows that will be used as baseline for comparison

bline<-mutate(filter(foroil,weekc<"2018-12-9"),**oilshlb**=parse\_number(**Expensed.to.orders**))

blinem<-summarize(bline,ref=sum(oilshlb,na.rm=T),totlb=sum(fglb,na.rm=T),base=ref/totlb) ##wtsold and therefore refsold are negative numbers ,refsold=totsold/totlb,totsold= sum(wqsold,na.rm=T)

oilshc<- select(mutate(filter(foroil,weekc>="2018-12-9"),**oilshcost**=parse\_number(**Expensed.to.orders**)\*(osc+opc-osale),oilrefcost=blinem$base\*fglb\*(osc+opc-osale)),weekc,Location.x, Lbs.Oil.Used.FG.Lbs,fglb,Expensed.to.orders,oilshcost,oilrefcost)

##To extend the table to all 2019 weeks and make the YE savings projection

##days2019<-seq(from=as.Date("2019-01-01"),to=as.Date("2019-12-31"),by =1)

##days2019\_d<-transform(as.Date(days2019))

##weeks2019<-mutate(days2019\_d,weekc=days2019\_d[,1]+1-wday(days2019\_d[,1]))

##weeks19u<-unique(weeks2019$weekc)

##write.csv(weeks19u,"weeks19u.csv")

##This will be the new weeks column for the savings table

##total\_weeks<-unique(c(oilshc$weekc,weeks19u))

total\_weeks<-seq(oilshc$weekc[1],oilshc$weekc[1]%m+% weeks(51),by=7)

oilshsav<-numeric()

oil\_usage<-numeric()

fg\_lb<-numeric()

oil\_ship\_cost<-numeric()

oil\_ref\_cost<-numeric()

k<-0

for(i in 1:length(total\_weeks))**{**

oilshsav[i]=sum(c(as.numeric(k),-as.numeric(oilshc$oilshcost[i]),as.numeric(oilshc$oilrefcost[i])),na.rm=TRUE)

##For all future weeks we just project the savings by adding the average saving obtained so far

k<-ifelse(i<nrow(oilshc),oilshsav[i],oilshsav[i]+oilshsav[nrow(oilshc)]/nrow(oilshc))

##This below is just to fill all future weeks in the dataframe with the supporting variables

oil\_usage[i]<-ifelse(i<=nrow(oilshc),parse\_number(oilshc$Lbs.Oil.Used.FG.Lbs[i]),NA)

fg\_lb[i]<- ifelse(i<=nrow(oilshc),oilshc$fglb[i],NA)

oil\_ship\_cost[i]<-ifelse(i<=nrow(oilshc),oilshc$oilshcost[i],NA)

oil\_ref\_cost[i]<-ifelse(i<=nrow(oilshc),oilshc$oilrefcost[i],NA)

**}**

oilsav<-data.frame(total\_weeks,location="Ohio",oil\_usage,fg\_lb,oil\_ship\_cost,oil\_ref\_cost,oilshsav)

**write.csv(oilshc,"oilshc.csv")**

**write.csv(oilsav,"oilsav.csv")**

dev.new()

**##h<-ggplot(data=oilsav, aes(x=oilshc.weeks, y=oilshsav))**

**h<-ggplot(data=oilsav, aes(x=total\_weeks, y=oilshsav))**

**hi<-h+geom\_point()+geom\_line(size=1.05,color="blue")+theme\_bw()+labs(x="Date",y="Accumulated oil savings (usd)",title="Ohio accumulated oil savings, product+shipping costs-recycling revenue")+ theme**(plot.title = element\_text(hjust = 0.5))**+geom\_vline**(xintercept= as.Date(ymd(today())+(1-wday(ymd(today())))),linetype="dashed")**+geom\_vline**(xintercept=max(oilshc$weekc)+6,linetype="dashed",color="purple")**+geom\_vline**(xintercept=max(total\_weeks)+6,linetype="dashed",color="purple")+**scale\_y\_continuous(**labels = scales::comma\_format(accuracy=1),expand=c(0,0),breaks=c**(**seq**(**0,max**(**oilsav$oilshsav**)**,by= max(oilsav$oilshsav)/4), oilsav$oilshsav**[grep(max(oilshc$weekc),oilsav$total\_weeks)]**,max(oilsav$oilshsav)**)**, limits=c**(0, max(**oilsav$oilshsav**)))**+scale\_x\_date(limits=c**(max(bline$weekc), max(oilsav$total\_weeks)),breaks=c(max(oilshc$weekc)+6,max(oilsav$total\_weeks)+6)**)**+theme(axis.text.x = element\_text(face="italic", color="#993333", size=9,angle=85,vjust=0.6))**+**geom\_hline**(aes**(**yintercept=oilsav$oilshsav**[grep(max(oilshc$weekc),oilsav$total\_weeks)])**,linetype="dashed",color="purple")+**geom\_hline**(aes**(**yintercept=max(oilsav$oilshsav)**)**,linetype="dashed",color="purple")+theme(axis.line = element\_line(colour = "black"), panel.border = element\_blank())+geom\_segment(aes(x = **max(bline$weekc)** , y = 0, xend = **min(oilsav$total\_weeks)**, yend = oilsav$oilshsav[1]))

print(hi)

**}**

+wqsold\*osale

+blinem$refsold\*fglb\*osale)