Functions

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Contents

Last Run 23 Jan 2018 @ 10:17

This is to document the develpoment of functins derived from various other activities to support the FPA proejct. It is important to note tha functions developed or documente here will have to be included in an R file so they may be easily brought into the R enviroment in the future.

Data Input

this function will read the csv file in and will make required conversions to factors or date

```
get.FPA <- function(file = "./data/First Pass Acceptance.csv", month = NULL){
     FPA <- read.csv( file = file,
                      stringsAsFactors = FALSE,
                      col.names = c("sqa",
                                    "project",
                                    "application",
                                    "deliverable",
                                    "version",
                                    "docID",
                                    "status",
                                    "date",
                                    "reason",
                                    "comments"))
}
```

Test

count

First the fuctin is run creating the FPA data frame. The the number of rows in the data frame is checked again the source data (66 at this time) as well as the number of columns (10)

```
FPA <- get.FPA()
nrow(FPA)
```

```
## [1] 66
```

```
ncol(FPA)
```

```
## [1] 10
```

```
dim(FPA)
```

```
## [1] 66 10
```

```
str(FPA)
```

```
## 'data.frame':    66 obs. of  10 variables:
##  $ sqa        : chr  "Wayne" "Wayne" "Wayne" "Wayne" ...
##  $ project    : chr  "LC-S 01073.000" "LC-S 01104.000" "LC-S 01104.000" "LC-S 00986.005" ...
##  $ application: chr  "Groninger" "Assay File Database " "Assay File Database " "PCN/SCN" ...
##  $ deliverable: chr  "Traceability" "Software Change Request" "Software Change Request" "Software Co
##  $ version    : int  1 1 1 NA 1 1 1 1 1 1 ...
##  $ docID      : chr  "Protrace-01" "SCR-01" "SCR-01" "SCA-01" ...
##  $ status     : chr  "A-FP" "D" "A" "D" ...
##  $ date       : chr  "16-Jan-18" "17-Jan-18" "17-Jan-18" "18-Jan-18" ...
##  $ reason     : chr  "" "Not compliant with procedure" "" "Incorrect scope" ...
##  $ comments   : chr  "" "" "" "Project name includes SMF, but Assessment links only PCN SCN" ...
```

cleaning Data

Factors and Date

```
clean.FPA <- function(FPA){
     require(lubridate)
     FPA$sqa <- as.factor(FPA$sqa)
     FPA$application <- as.factor(FPA$application)
     FPA$deliverable <- as.factor(FPA$deliverable)
     FPA$status <- as.factor(FPA$status)
     FPA$reason <- as.factor(FPA$reason)
     levels(FPA$reason)[1] <- NA
     FPA$date <- as.Date(FPA$date, format = "%d-%B-%y")
     return(FPA)
}
```

Test

Now a count of each factor will be tabulated to verify against the know data and look at data frame structure

```
FPA <- clean.FPA(FPA = FPA)
```

```
## Loading required package: lubridate
```

```
##
## Attaching package: 'lubridate'
```

```
## The following object is masked from 'package:base':
##
##     date
```

```r
str(FPA)
```

```
## 'data.frame':    66 obs. of  10 variables:
##  $ sqa        : Factor w/ 3 levels "Beilah","Nick",..: 3 3 3 3 1 1 1 1 1 1 ...
##  $ project    : chr  "LC-S 01073.000" "LC-S 01104.000" "LC-S 01104.000" "LC-S 00986.005" ...
##  $ application: Factor w/ 14 levels "Abbott Transfusion Medicine",..: 8 4 4 10 14 14 14 14 11 11 ...
##  $ deliverable: Factor w/ 14 levels "CII","Design Verification",..: 11 6 6 7 9 9 9 9 4 9 ...
##  $ version    : int  1 1 1 NA 1 1 1 1 1 1 ...
##  $ docID      : chr  "Protrace-01" "SCR-01" "SCR-01" "SCA-01" ...
##  $ status     : Factor w/ 3 levels "A","A-FP","D": 2 3 1 3 1 1 3 1 2 2 ...
##  $ date       : Date, format: "2018-01-16" "2018-01-17" ...
##  $ reason     : Factor w/ 5 levels "Inaccurate information",..: NA 3 NA 2 NA NA 1 NA NA NA ...
##  $ comments   : chr  "" "" "" "Project name includes SMF, but Assessment links only PCN SCN" ...
```

```r
table(FPA$sqa)
```

```
##
## Beilah   Nick  Wayne
##     37     24      5
```

```r
table(FPA$application)
```

```
##
## Abbott Transfusion Medicine                        AFMS
##                           1                           9
##                  Apollo/PHM       Assay File Database
##                           9                           2
##                     DaVinci                        DFCS
##                           4                           6
##                         DPW                   Groninger
##                           3                           1
##             Metrics Library                     PCN/SCN
##                           1                           2
##                       Pulse                        QIMS
##                          10                           4
##                         SAS                      WWLIMS
##                           1                          13
```

```r
table(FPA$deliverable)
```

```
##
##                            CII            Design Verification
##                              5                              2
##                            FRS                    IIVP results
##                              4                              7
##                   Project Plan         Software Change Request
##                              4                              5
## Software Compliance Assessment   System Certification Summary
##                              3                              1
##                 Test Protocol          Test Protocol Results
##                             21                              6
##                   Traceability                            URS
##                              3                              2
##       User Acceptance Protocol                Validation Plan
##                              2                              1
```

```
table(FPA$status)
```

```
##
##    A A-FP    D
##   14   37   15
```

```
table(FPA$reason)
```

```
##
##                  Inaccurate information
##                                       7
##                          Incorrect scope
##                                       1
##            Not compliant with procedure
##                                       5
## Not following document version control
##                                       1
##                  Requirement deficiency
##                                       1
```

```
table(FPA$date)
```

```
##
## 2018-01-03 2018-01-09 2018-01-11 2018-01-15 2018-01-16 2018-01-17
##          2          1          1         14         17         11
## 2018-01-18 2018-01-19 2018-01-22
##         16          3          1
```

Processing

Create a seperate value for Month and Year for the date value.

Create a UID for each deliverable

```
process <- function(FPA){
     require(lubridate)
     FPA$month <- month(FPA$date, label = TRUE)
     FPA$year <- year(FPA$date)
     FPA$UID <- paste(FPA$project,
                      FPA$deliverable,
                      FPA$docID,
                      FPA$version,
                      sep = "-")
}
```

Test

inspect the structor of the data frame

```
str(FPA)
```

```
## 'data.frame':    66 obs. of  10 variables:
##  $ sqa        : Factor w/ 3 levels "Beilah","Nick",..: 3 3 3 3 1 1 1 1 1 1 ...
##  $ project    : chr  "LC-S 01073.000" "LC-S 01104.000" "LC-S 01104.000" "LC-S 00986.005" ...
##  $ application: Factor w/ 14 levels "Abbott Transfusion Medicine",..: 8 4 4 10 14 14 14 14 11 11 ...
```

```
##  $ deliverable: Factor w/ 14 levels "CII","Design Verification",..: 11 6 6 7 9 9 9 9 4 9 ...
##  $ version    : int  1 1 1 NA 1 1 1 1 1 1 ...
##  $ docID      : chr  "Protrace-01" "SCR-01" "SCR-01" "SCA-01" ...
##  $ status     : Factor w/ 3 levels "A","A-FP","D": 2 3 1 3 1 1 3 1 2 2 ...
##  $ date       : Date, format: "2018-01-16" "2018-01-17" ...
##  $ reason     : Factor w/ 5 levels "Inaccurate information",..: NA 3 NA 2 NA NA 1 NA NA NA ...
##  $ comments   : chr  "" "" "" "Project name includes SMF, but Assessment links only PCN SCN" ...
```

Now look at at the new values

```
table(FPA$month)
```

```
## < table of extent 0 >
```

```
table(FPA$year)
```

```
## < table of extent 0 >
```

```
table((FPA$UID))
```

```
## < table of extent 0 >
```