

# Defect Analysis

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```
library(readr)
```

```
## Warning: package 'readr' was built under R version 3.5.3
```

```
library(dplyr)
```

```
## Warning: package 'dplyr' was built under R version 3.5.3
```

```
##
```

```
## 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(ggrepel)
```

```
## Warning: package 'ggrepel' was built under R version 3.5.3
```

```
## Loading required package: ggplot2
```

```
## Warning: package 'ggplot2' was built under R version 3.5.3
```

```
library(ggplot2)
```

```
library(tidyr)
```

```
## Warning: package 'tidyr' was built under R version 3.5.3
```

```
df <- read_csv("sampleDefects.csv")
```

```
## Parsed with column specification:
```

```
## cols(
```

```
##   .default = col_character(),
```

```
##   MVP = col_logical(),
```

```
##   RETEST_STARTED_DATE_TIME = col_logical(),
```

```
##   VENDOR = col_logical(),
```

```
##   SEV = col_logical(),
```

```
##   ISATTACHEDDOC = col_logical(),
```

```
##   LASTCOMMENTSDATE = col_logical()
```

```
## )
```

```
## See spec(...) for full column specifications.
```

```
df
```

```
## # A tibble: 1,491 x 36
```

```
##   KEY    PRIORITY MVP    STATUS DEFECT_STATUS CREATOR ISSUE_SUMMARY REPORTER
```

```
##   <chr> <chr>    <lgl> <chr>  <chr>          <chr>  <chr>          <chr>
```

```
## 1 NGMS~ High    NA    Accep~ Closed      Satya ~ PCO Delete s~ Satya S~
```

```
## 2 NGNC~ Critical NA    Accep~ Closed      Santho~ Preprod: NG~~ Santhos~
```

```

## 3 NGNC~ Medium    NA    Accep~ Closed      Booma ~ CJ for Order~ Booma B~
## 4 NGMS~ Critical NA    Block~ Open        Krishn~ "CI - CARE -- Krishna~
## 5 NGMS~ Medium    NA    Ready~ Closed      Venka ~ URL={XM_URL}~ Venka R~
## 6 NGMS~ Critical NA    Accep~ Closed      Venka ~ XM Perf envi~ Venka R~
## 7 NGMS~ High      NA    Won't~ Closed      Srikar~ Prod & Prepr~ Srikar ~
## 8 NGMB~ High      NA    Accep~ Closed      Venka ~ Perf_test: h~ Venka R~
## 9 NGMB~ Critical NA    Accep~ Closed      Guhan ~ "source retu~ Guhan S~
## 10 NGMB~ Medium   NA    Accep~ Closed      Ganesh~ Remove downp~ Ganesh ~
## # ... with 1,481 more rows, and 28 more variables: ASSIGNEE <chr>,
## #   ISSUE_TYPE <chr>, PROJECT_NAME <chr>, DEFECT_CREATED_DATE_TIME <chr>,
## #   DEFECT_RESOLUTION_DATE <chr>, RESOLUTION <chr>, LABELS <chr>,
## #   TARGET_ETA_DATE_TIME <chr>, RELEASE_DATE <chr>,
## #   DEFECT_UPDATED_DATE_TIME <chr>, STATUS_CAT <chr>,
## #   RETEST_STARTED_DATE_TIME <lgl>, DEFECT_FIX_VERSION <chr>, VENDOR <lgl>,
## #   SEV <lgl>, PROJECT <chr>, SPRINT <chr>, ENVIRONMENT <chr>, TEST_TYPE <chr>,
## #   SCRUM_TEAM <chr>, FUNTIONAL_GROUP <chr>, AFFECTED_VERSION <chr>,
## #   TEAMFLAG <chr>, SEARCHFIELDTKT <chr>, IMPACTS <chr>, ISATTACHEDDOC <lgl>,
## #   LASTCOMMENTSDATE <lgl>, TYPE <chr>

df <- df %>% separate(col=FUNTIONAL_GROUP, into=c("channel","feature"), sep="\\-", remove=FALSE)

## Warning: Expected 2 pieces. Additional pieces discarded in 382 rows [3, 5, 6, 9,
## 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 26, 31, 33, ...].

## Warning: Expected 2 pieces. Missing pieces filled with `NA` in 1 rows [632].

df

## # A tibble: 1,491 x 38
##   KEY    PRIORITY MVP    STATUS DEFECT_STATUS CREATOR ISSUE_SUMMARY REPORTER
##   <chr> <chr>    <lgl> <chr> <chr>          <chr> <chr>          <chr>
## 1 NGMS~ High      NA    Accep~ Closed      Satya ~ PCO Delete s~ Satya S~
## 2 NGNC~ Critical NA    Accep~ Closed      Santho~ Preprod: NG~~ Santhos~
## 3 NGNC~ Medium    NA    Accep~ Closed      Booma ~ CJ for Order~ Booma B~
## 4 NGMS~ Critical NA    Block~ Open        Krishn~ "CI - CARE -- Krishna~
## 5 NGMS~ Medium    NA    Ready~ Closed      Venka ~ URL={XM_URL}~ Venka R~
## 6 NGMS~ Critical NA    Accep~ Closed      Venka ~ XM Perf envi~ Venka R~
## 7 NGMS~ High      NA    Won't~ Closed      Srikar~ Prod & Prepr~ Srikar ~
## 8 NGMB~ High      NA    Accep~ Closed      Venka ~ Perf_test: h~ Venka R~
## 9 NGMB~ Critical NA    Accep~ Closed      Guhan ~ "source retu~ Guhan S~
## 10 NGMB~ Medium   NA    Accep~ Closed      Ganesh~ Remove downp~ Ganesh ~
## # ... with 1,481 more rows, and 30 more variables: ASSIGNEE <chr>,
## #   ISSUE_TYPE <chr>, PROJECT_NAME <chr>, DEFECT_CREATED_DATE_TIME <chr>,
## #   DEFECT_RESOLUTION_DATE <chr>, RESOLUTION <chr>, LABELS <chr>,
## #   TARGET_ETA_DATE_TIME <chr>, RELEASE_DATE <chr>,
## #   DEFECT_UPDATED_DATE_TIME <chr>, STATUS_CAT <chr>,
## #   RETEST_STARTED_DATE_TIME <lgl>, DEFECT_FIX_VERSION <chr>, VENDOR <lgl>,
## #   SEV <lgl>, PROJECT <chr>, SPRINT <chr>, ENVIRONMENT <chr>, TEST_TYPE <chr>,
## #   SCRUM_TEAM <chr>, FUNTIONAL_GROUP <chr>, channel <chr>, feature <chr>,
## #   AFFECTED_VERSION <chr>, TEAMFLAG <chr>, SEARCHFIELDTKT <chr>,
## #   IMPACTS <chr>, ISATTACHEDDOC <lgl>, LASTCOMMENTSDATE <lgl>, TYPE <chr>

#df %>% filter(TYPE=="Jira" & DEFECT_CREATED_DATE_TIME>"31-MAY-19") %>% group_by(channel,feature) %>% g

dat_affected <- df %>% group_by(AFFECTED_VERSION, PRIORITY) %>% mutate(cnt=n()) %>% select(AFFECTED_VE
unique(dat_affected)

```

```
## # A tibble: 618 x 5
## # Groups:   AFFECTED_VERSION, PRIORITY [334]
##   AFFECTED_VERSION PROJECT_NAME FUNTIONAL_GROUP PRIORITY    cnt
##   <chr>           <chr>           <chr>           <chr>    <int>
## 1 <NA>            Amdocs-MCO    <NA>            Critical  333
## 2 <NA>            Amdocs ANM    <NA>            Critical  333
## 3 <NA>            Amdocs ANM    <NA>            High     202
## 4 <NA>            Amdocs ANM    <NA>            Low       62
## 5 <NA>            Amdocs ANM    <NA>            Medium   181
## 6 <NA>            Amdocs AR     <NA>            Critical  333
## 7 <NA>            Amdocs AR     <NA>            High     202
## 8 <NA>            Amdocs AR     <NA>            Low       62
## 9 <NA>            Amdocs AR     <NA>            Lowest    7
## 10 <NA>           Amdocs AR     <NA>            Medium   181
## # ... with 608 more rows

dat_FUNTIONAL_GROUP <- df %>% group_by(FUNTIONAL_GROUP, PRIORITY) %>% mutate(cnt=n()) %>% select(FUNTIONAL_GROUP, PRIORITY, cnt)
unique(dat_FUNTIONAL_GROUP)
```

```
## # A tibble: 116 x 3
## # Groups:   FUNTIONAL_GROUP, PRIORITY [116]
##   FUNTIONAL_GROUP          PRIORITY    cnt
##   <chr>                  <chr>    <int>
## 1 Activation & Fulfillment - Activate Critical    19
## 2 Activation & Fulfillment - Activate High         21
## 3 Activation & Fulfillment - Activate Low           2
## 4 Activation & Fulfillment - Activate Lowest         1
## 5 Activation & Fulfillment - Activate Medium        19
## 6 Activation & Fulfillment - Logistics High          2
## 7 Activation & Fulfillment - Logistics Medium         2
## 8 Activation & Fulfillment - Voicemail Critical        2
## 9 Agent Care - Activation Critical          2
## 10 Agent Care - Activation Low              1
## # ... with 106 more rows

dat_fixed_env <- df %>% group_by(DEFECT_FIX_VERSION, PRIORITY, ENVIRONMENT) %>% mutate(cnt=n()) %>% select(DEFECT_FIX_VERSION, PRIORITY, ENVIRONMENT, cnt)
unique(dat_fixed_env)
```

```
## # A tibble: 590 x 6
## # Groups:   DEFECT_FIX_VERSION, PRIORITY, ENVIRONMENT [182]
##   DEFECT_FIX_VERSION PROJECT_NAME FUNTIONAL_GROUP ENVIRONMENT PRIORITY    cnt
##   <chr>           <chr>           <chr>           <chr>           <chr>    <int>
## 1 <NA>            Amdocs-MCO    <NA>            ML-INT          Critical  239
## 2 <NA>            Amdocs ANM    <NA>            DINT            Medium   23
## 3 <NA>            Amdocs ANM    <NA>            ML-INT          Critical  239
## 4 <NA>            Amdocs ANM    <NA>            ML-INT          High     114
## 5 <NA>            Amdocs ANM    <NA>            ML-INT          Low       54
## 6 <NA>            Amdocs ANM    <NA>            ML-INT          Medium   122
## 7 <NA>            Amdocs AR     <NA>            DINT            Critical  43
## 8 <NA>            Amdocs AR     <NA>            DINT            High     38
## 9 <NA>            Amdocs AR     <NA>            DINT            Lowest    2
## 10 <NA>           Amdocs AR     <NA>            DINT            Medium   23
## # ... with 580 more rows

dat_env <- df %>% group_by(PRIORITY, ENVIRONMENT) %>% mutate(cnt=n()) %>% select(PRIORITY, ENVIRONMENT, cnt)
unique(dat_env)
```

```
## # A tibble: 444 x 5
## # Groups:   PRIORITY, ENVIRONMENT [31]
##   PROJECT_NAME FUNTIONAL_GROUP ENVIRONMENT PRIORITY    cnt
##   <chr>        <chr>           <chr>      <chr>    <int>
## 1 Amdocs-MCO   <NA>                ML-INT      Critical  239
## 2 Amdocs ANM   <NA>                DINT        Medium   23
## 3 Amdocs ANM   <NA>                ML-INT      Critical  239
## 4 Amdocs ANM   <NA>                ML-INT      High    114
## 5 Amdocs ANM   <NA>                ML-INT      Low     54
## 6 Amdocs ANM   <NA>                ML-INT      Medium  122
## 7 Amdocs AR    <NA>                DINT        Critical  43
## 8 Amdocs AR    <NA>                DINT        High     38
## 9 Amdocs AR    <NA>                DINT        Lowest    2
## 10 Amdocs AR   <NA>                DINT        Medium   23
## # ... with 434 more rows

dat_all <- df %>% group_by(DEFECT_FIX_VERSION,FUNTIONAL_GROUP,PRIORITY,ENVIRONMENT) %>% mutate(cnt=n()) %>%
unique(dat_all)
```

```
## # A tibble: 309 x 5
## # Groups:   DEFECT_FIX_VERSION, FUNTIONAL_GROUP, PRIORITY, ENVIRONMENT [309]
##   DEFECT_FIX_VERSION FUNTIONAL_GROUP          PRIORITY ENVIRONMENT    cnt
##   <chr>             <chr>                <chr>      <chr>    <int>
## 1 NGAX-R19.15.1     Activation & Fulfillment - Act~ Critical Pre-Prod    1
## 2 Unknown           Activation & Fulfillment - Act~ Critical Pre-Prod   12
## 3 NGAPI-R19.15.0     Activation & Fulfillment - Act~ Critical Pre-Prod    1
## 4 NGAX-R19.7.8       Activation & Fulfillment - Act~ Critical Pre-Prod    1
## 5 NGAX-R19.7.7       Activation & Fulfillment - Act~ Critical Pre-Prod    1
## 6 NGAPI-R19.13.6     Activation & Fulfillment - Act~ Critical Pre-Prod    1
## 7 NGAPI-R19.15.5     Activation & Fulfillment - Act~ Critical Pre-Prod    1
## 8 NGAPI-R19.10.0     Activation & Fulfillment - Act~ Critical Pre-Prod    1
## 9 <NA>              Activation & Fulfillment - Act~ High    Pre-Prod    1
## 10 Unknown          Activation & Fulfillment - Act~ High    Pre-Prod   11
## # ... with 299 more rows

dat_affected <- df %>% group_by(AFFECTED_VERSION,FUNTIONAL_GROUP,ENVIRONMENT) %>% mutate(cnt=n()) %>%
unique(dat_affected)
```

```
## # A tibble: 371 x 4
## # Groups:   AFFECTED_VERSION, FUNTIONAL_GROUP, ENVIRONMENT [371]
##   AFFECTED_VERSION FUNTIONAL_GROUP          ENVIRONMENT    cnt
##   <chr>           <chr>                <chr>      <int>
## 1 NGAPI-R19.15.2   undefined           Pre-Prod    1
## 2 NGAPI-R19.6.0    Self-Care - Support Pre-Prod    1
## 3 NGMAIAD-R2.8.0   Self-Care - Support Pre-Prod    1
## 4 D2C-R3.0.0       Self-Care - Support Pre-Prod    1
## 5 NGMAAAD-R2.6.0   Self-Care - Support Pre-Prod    1
## 6 NGAPI-R19.12.3   Self-Care - Support Pre-Prod    1
## 7 NGMAAAD-R2.8.0   Self-Care - Support Pre-Prod    1
## 8 NGAPI-R19.10.0   Self-Care - Notifications Pre-Prod 1
## 9 NGAPI-R19.12.3   Self-Care - Notifications Pre-Prod 2
## 10 <NA>            Self-Care - Notifications Pre-Prod 1
## # ... with 361 more rows

dat_effect <- df %>% group_by(AFFECTED_VERSION,ENVIRONMENT) %>% mutate(cnt=n()) %>% select(AFFECTED_VERSION,ENVIRONMENT) %>%
unique(dat_effect)
```

```
## # A tibble: 199 x 3
## # Groups:   AFFECTED_VERSION, ENVIRONMENT [199]
##   AFFECTED_VERSION ENVIRONMENT    cnt
##   <chr>            <chr>      <int>
## 1 Unknown          Pre-Prod    176
## 2 Production       Pre-Prod     1
## 3 NGNC-R18.3.0     Pre-Prod     1
## 4 NGMSP-R18.1.0    Pre-Prod     2
## 5 NGMAIAD-R2.9.0   Pre-Prod     1
## 6 NGMAIAD-R2.8.0   Pre-Prod     2
## 7 NGMAIAD-R2.6.0   Pre-Prod     2
## 8 NGMAIAD-R2.10.0  Pre-Prod     7
## 9 NGMAIAD-R18.34.0 Pre-Prod     1
## 10 NGMAAAD-R2.9.0  Pre-Prod     4
## # ... with 189 more rows

dat_feature <- df %>% group_by(AFFECTED_VERSION) %>% filter(FUNTIONAL_GROUP=="Activation & Fulfillment") %>%
unique(dat_feature)

## # A tibble: 35 x 3
## # Groups:   AFFECTED_VERSION [35]
##   AFFECTED_VERSION ENVIRONMENT    cnt
##   <chr>            <chr>      <int>
## 1 Unknown          Pre-Prod     8
## 2 NGMAAAD-R2.7.1    Pre-Prod     1
## 3 NGAX-R19.9.1      Pre-Prod     1
## 4 NGAX-R19.8.3      Pre-Prod     4
## 5 NGAX-R19.7.6      Pre-Prod     2
## 6 NGAX-R19.7.4      Pre-Prod     3
## 7 NGAX-R19.14.6     Pre-Prod     1
## 8 NGAX-R19.14.1     Pre-Prod     5
## 9 NGAX-R19.13.5     Pre-Prod     1
## 10 NGAPI-R19.9.3    Pre-Prod     1
## # ... with 25 more rows

dat_all <- df %>% group_by(DEFECT_FIX_VERSION,FUNTIONAL_GROUP,ENVIRONMENT) %>% mutate(cnt=n()) %>% select(DEFECT_FIX_VERSION,FUNTIONAL_GROUP,ENVIRONMENT,cnt) %>%
unique(dat_all)

## # A tibble: 214 x 4
## # Groups:   DEFECT_FIX_VERSION, FUNTIONAL_GROUP, ENVIRONMENT [214]
##   DEFECT_FIX_VERSION FUNTIONAL_GROUP ENVIRONMENT    cnt
##   <chr>              <chr>          <chr>      <int>
## 1 <NA>              Activation & Fulfillment - Activate Pre-Prod     1
## 2 Unknown          Activation & Fulfillment - Activate Pre-Prod    38
## 3 NGAX-R19.15.1     Activation & Fulfillment - Activate Pre-Prod     1
## 4 NGAX-R19.15.0     Activation & Fulfillment - Activate Pre-Prod     2
## 5 D2C-R3.0.0        Activation & Fulfillment - Activate Pre-Prod     2
## 6 NGAPI-R19.15.2     Activation & Fulfillment - Activate Pre-Prod     1
## 7 NGAPI-R19.16.0     Activation & Fulfillment - Activate Pre-Prod     1
## 8 No Front End Change Activation & Fulfillment - Activate Pre-Prod     1
## 9 NGAPI-R19.15.0     Activation & Fulfillment - Activate Pre-Prod     2
## 10 NGAPI-R19.13.1    Activation & Fulfillment - Activate Pre-Prod     1
## # ... with 204 more rows

dat_all <- df %>% group_by(DEFECT_FIX_VERSION,FUNTIONAL_GROUP,ENVIRONMENT) %>% filter(FUNTIONAL_GROUP=="Activation & Fulfillment") %>%
unique(dat_all)
```

```
## # A tibble: 21 x 4
## # Groups:   DEFECT_FIX_VERSION, FUNTIONAL_GROUP, ENVIRONMENT [21]
##   DEFECT_FIX_VERSION FUNTIONAL_GROUP ENVIRONMENT cnt
##   <chr>             <chr>             <chr>    <int>
## 1 Unknown           Activation & Fulfillment - Activate Pre-Prod    38
## 2 No Front End Change Activation & Fulfillment - Activate Pre-Prod     1
## 3 NGAX-R19.9.3       Activation & Fulfillment - Activate Pre-Prod     1
## 4 NGAX-R19.9.0       Activation & Fulfillment - Activate Pre-Prod     2
## 5 NGAX-R19.8.0       Activation & Fulfillment - Activate Pre-Prod     1
## 6 NGAX-R19.7.8       Activation & Fulfillment - Activate Pre-Prod     1
## 7 NGAX-R19.7.7       Activation & Fulfillment - Activate Pre-Prod     1
## 8 NGAX-R19.17.0      Activation & Fulfillment - Activate Pre-Prod     1
## 9 NGAX-R19.15.1      Activation & Fulfillment - Activate Pre-Prod     1
## 10 NGAX-R19.15.0     Activation & Fulfillment - Activate Pre-Prod     2
## # ... with 11 more rows

dat_env <- df %>% group_by(PROJECT_NAME) %>% mutate(cnt=n()) %>% filter(ENVIRONMENT=="ML-INT") %>% select(
  unique(dat_env)
```

```
## # A tibble: 84 x 4
## # Groups:   PROJECT_NAME [29]
##   PROJECT_NAME FUNTIONAL_GROUP PRIORITY cnt
##   <chr>        <chr>          <chr>  <int>
## 1 Amdocs-MCO   <NA>             Critical  1
## 2 Amdocs ANM   <NA>             Critical 13
## 3 Amdocs ANM   <NA>             High    13
## 4 Amdocs ANM   <NA>             Low     13
## 5 Amdocs ANM   <NA>             Medium  13
## 6 Amdocs AR    <NA>             Critical 84
## 7 Amdocs AR    <NA>             High    84
## 8 Amdocs AR    <NA>             Low     84
## 9 Amdocs AR    <NA>             Medium  84
## 10 Amdocs Bill Layout <NA>          Critical  5
## # ... with 74 more rows

dat_env <- df %>% group_by(PROJECT_NAME) %>% mutate(cnt=n()) %>% filter(ENVIRONMENT=="DINT") %>% select(
  unique(dat_env)
```

```
## # A tibble: 38 x 4
## # Groups:   PROJECT_NAME [21]
##   PROJECT_NAME FUNTIONAL_GROUP PRIORITY cnt
##   <chr>        <chr>          <chr>  <int>
## 1 Amdocs ANM   <NA>             Medium  13
## 2 Amdocs AR    <NA>             Critical 84
## 3 Amdocs AR    <NA>             High    84
## 4 Amdocs AR    <NA>             Lowest  84
## 5 Amdocs AR    <NA>             Medium  84
## 6 Amdocs Bill Layout <NA>          Medium  5
## 7 Amdocs CM    <NA>             Critical 16
## 8 Amdocs CM    <NA>             High    16
## 9 Amdocs Collection <NA>          High     2
## 10 Amdocs CRM   <NA>             Critical 23
## # ... with 28 more rows

dat_env <- df %>% group_by(PROJECT_NAME) %>% mutate(cnt=n()) %>% filter(ENVIRONMENT=="Pre-Prod") %>% select(
  unique(dat_env)
```

```
## # A tibble: 255 x 4
## # Groups:   PROJECT_NAME [15]
##   PROJECT_NAME      FUNTIONAL_GROUP      PRIORITY    cnt
##   <chr>            <chr>            <chr>    <int>
## 1 Digital          Learn & Buy - Shop - Devices    Critical    26
## 2 Digital          Self-Care - My Account          Critical    26
## 3 Digital          Learn & Buy - Shop - Devices    High       26
## 4 Digital          Learn & Buy - Shop - Accessories High       26
## 5 Digital          Learn & Buy - Shop - Devices    Low        26
## 6 Digital          Learn & Buy - Shop - Devices    Lowest     26
## 7 Digital          Learn & Buy - Plan Page          Medium     26
## 8 Digital          Learn & Buy - Shop - Accessories Medium     26
## 9 Digital          Learn & Buy - Shop - Devices    Medium     26
## 10 Next Gen 3rd Party Vendors Self-Care - My Account          Critical    5
## # ... with 245 more rows
```