```
library(tidyverse)
library(gridExtra)
library(cowplot)
```

1 | **Validation Results**

Grab the CSV file

```
data_withcnd <- read.csv("./valdata.csv")
colnames(data_withcnd)
```

```
rouge1_prec
rouge1_recc
rouge1_fm
rougel_prec
rougel_recc
rougel_fm
```

We will proceed to plot the distribution, *removing samples whereby the output is all zero exactly as all of those values (see the codebase) was resulted when the input data contain no mention of the term to be defined, and hence isn't in scope*

```
data_total <- data_withcnd
data_withcnd <- data_withcnd %>% filter(rouge1_prec+rougel_prec != 0)
```

```
data.frame(measure=colnames(data_withcnd), mean=colMeans(data_withcnd))
```

```
rouge1_prec 0.628426120831488
rouge1_recc 0.464001115660334
rouge1_fm 0.509749913066602
rougel_prec 0.584153097709648
rougel_recc 0.432615317695647
rougel_fm 0.474798716995343
```

```
FALSE
```

Calculation of p value for rogue1 precision and roguel precision

```
t.test(data_withcnd$rouge1_prec)
```

```
One Sample t-test

data:  data_withcnd$rouge1_prec
t = 90.644, df = 851, p-value < 2.2e-16
alternative hypothesis: true mean is not equal to 0
95 percent confidence interval:
 0.6148185 0.6420337
sample estimates:
mean of x
0.6284261
```

```
t.test(data_withcnd$rougel_prec)
```

```
One Sample t-test

data:  data_withcnd$rougel_prec
t = 79.005, df = 851, p-value < 2.2e-16
alternative hypothesis: true mean is not equal to 0
95 percent confidence interval:
 0.5696407 0.5986655
sample estimates:
mean of x
0.5841531
```

```
plot_rogue1_recc <- data_withcnd %>% ggplot() + geom_histogram(aes(x=rouge1_recc)) + xlab("ROUGE1 Recall
plot_roguel_recc <- data_withcnd %>% ggplot() + geom_histogram(aes(x=rougel_recc)) + xlab("ROUGEL Recall
```

We will also

2 | **Validation Data**

```
validation_data <- read.csv("./validata.csv")
```

Rows

```
colnames(validation_data)
```

```
title
context
desired_output
oc
```

```
context_box_plot <- validation_data %>% ggplot() + geom_boxplot(aes(x=nchar(context)))+ theme(text = el
prediction_box_plot <- validation_data %>% ggplot() + geom_boxplot(aes(x=nchar(desired_output)))+ theme
```

3 | **Wandb Exported BLEU over time**

```
wandb_bleu <- read.csv("./wandb_export_bleu.csv")
```

Columns:

```
colnames(wandb_bleu)
```

```
Step
northern.sky.16516...val_bleu_20rolling
northern.sky.16516...val_bleu_20rolling__MIN
northern.sky.16516...val_bleu_20rolling__MAX
```

```
val_bleu_rolling <- wandb_bleu %>% ggplot() + geom_line(aes(x=Step, y=northern.sky.16516...val_bleu_20r
```

4 | OC and Length Influencing Validation

```
total <- data_withcnd
total$oc = validation_data$oc
total$context = validation_data$context
total <- total %>% filter(rouge1_prec+rougel_prec != 0)

colnames(total)

rouge1_prec
rouge1_recc
rouge1_fm
rougel_prec
rougel_recc
rougel_fm
oc
context

plot_rogue1_colors <- total %>% ggplot() + geom_histogram(aes(x=rouge1_recc, color=oc)) + xlab("ROUGE1 R

plot_rogue1_context <- total %>% ggplot() + geom_point(aes(x=nchar(context), y=rouge1_recc)) + xlab("Con
```

does the above work?

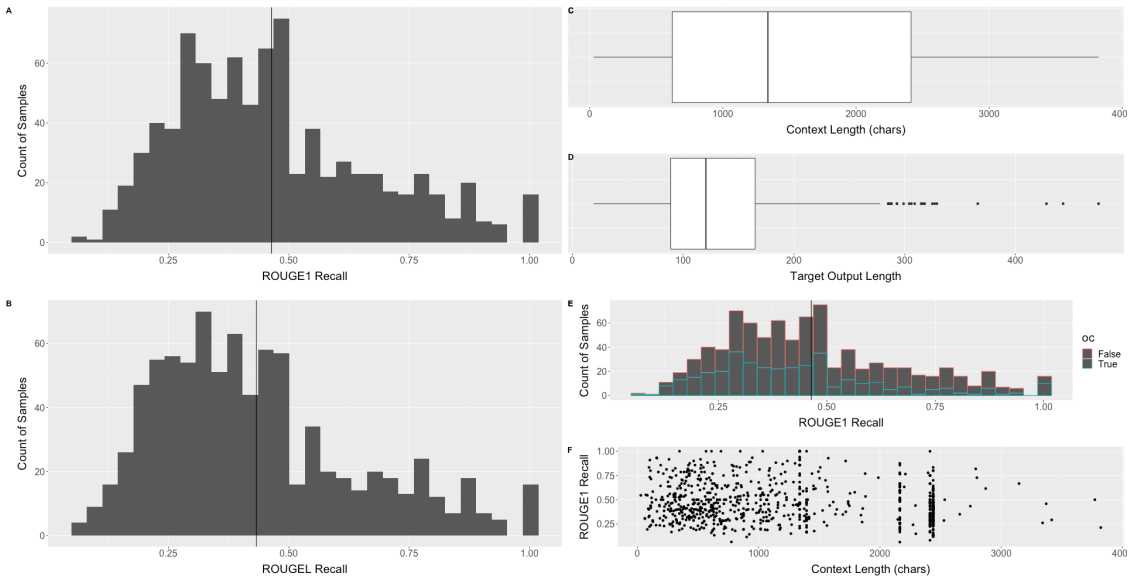
```
cor.test(nchar(total$context), total$rouge1_recc)


Pearson's product-moment correlation

data:  nchar(total$context) and total$rouge1_recc
t = -5.1299, df = 850, p-value = 3.594e-07
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 -0.2376886 -0.1073757
sample estimates:
       cor
-0.1732905
```

5 | Figures

```
plot_grid(plot_grid(plot_rogue1_recc, plot_roguel_recc, ncol=1, labels = c("A", "B")), plot_grid(plot_gr
```


A
Count of Samples
ROUGE1 Recall
C
Context Length (chars)
D
Target Output Length
B
Count of Samples
ROUGEL Recall
E
Count of Samples
ROUGE1 Recall
OC
False
True
F
ROUGE1 Recall
Context Length (chars)