Milestone_4

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```
## Warning in system("timedatectl", intern = TRUE): running command 'timedatectl'
## had status 1
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.1 --
```

```
## v ggplot2 3.3.5      v purrr   0.3.4
## v tibble  3.1.6      v dplyr   1.0.8
## v tidyr   1.2.0      v stringr 1.4.0
## v readr   2.1.2      v forcats 0.5.1
```

```
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

```
##
## Attaching package: 'janitor'
```

```
## The following objects are masked from 'package:stats':
##
##     chisq.test, fisher.test
```

```
##
## Attaching package: 'kableExtra'
```

```
## The following object is masked from 'package:dplyr':
##
##     group_rows
```

1. One print quality table as requested in scenario:

case rates by month for different regions within the EU.

```
summary_table1<- joined_df%>%
  group_by(sub_region, month_rep)%>%
  summarise(total_case_region= sum(total_conf_case))%>%
  mutate(monthly_cases_per_region= sum(total_case_region),
  MPX_cases_rate_per_region =
    round( total_case_region/monthly_cases_per_region*100,1))%>%
  arrange(sub_region, desc(month_rep))
```

```
## `summarise()` has grouped output by 'sub_region'. You can override using the
## `.groups` argument.
```

Table 1: MonkeyPox Rates per month for different regions within the EU in 2022

| EU Regions	Months MPX cases reported	MPX cases	Total MPX cases per region	MPX cases rate per month
Eastern Europe	May	5	277	1.8
Eastern Europe	June	58	277	20.9
Eastern Europe	July	116	277	41.9
Eastern Europe	August	98	277	35.4
Northern Europe	May	16	576	2.8
Northern Europe	June	117	576	20.3
Northern Europe	July	246	576	42.7
Northern Europe	August	197	576	34.2
Southern Europe	May	422	7,906	5.3
Southern Europe	June	1,902	7,906	24.1
Southern Europe	July	3,773	7,906	47.7
Southern Europe	August	1,809	7,906	22.9
Western Europe	May	131	8,257	1.6
Western Europe	June	2,040	8,257	24.7
Western Europe	July	4,134	8,257	50.1
Western Europe	August	1,952	8,257	23.6

```
kable(summary_table1,
      booktabs=T,
      col.names=c("EU Regions", "Months  MPX cases reported", "MPX cases",
                  "Total MPX cases per region",
                  "MPX cases rate per month per region"),
      align='lcccc',
caption="MonkeyPox Rates per month for different regions within the EU in 2022",
      format.args=list(big.mark=","))
```

One print quality plot or chart as requested in scenario

```
summary_table1$month_rep<- factor(summary_table1$month_rep)

    summary_table1 %>%
      ggplot(aes( x=sub_region, y= MPX_cases_rate_per_region,fill=month_rep)) +
      geom_bar(stat="identity")+
      labs(x = "EU Regions", y = "MonkeyPox Cases Rate")+
      ggtitle("Stacked bar chart of monkeypox case rates by
      month for different regions within the EU")
```


Stacked bar chart of monkeypox case rates by month for different regions within the EU
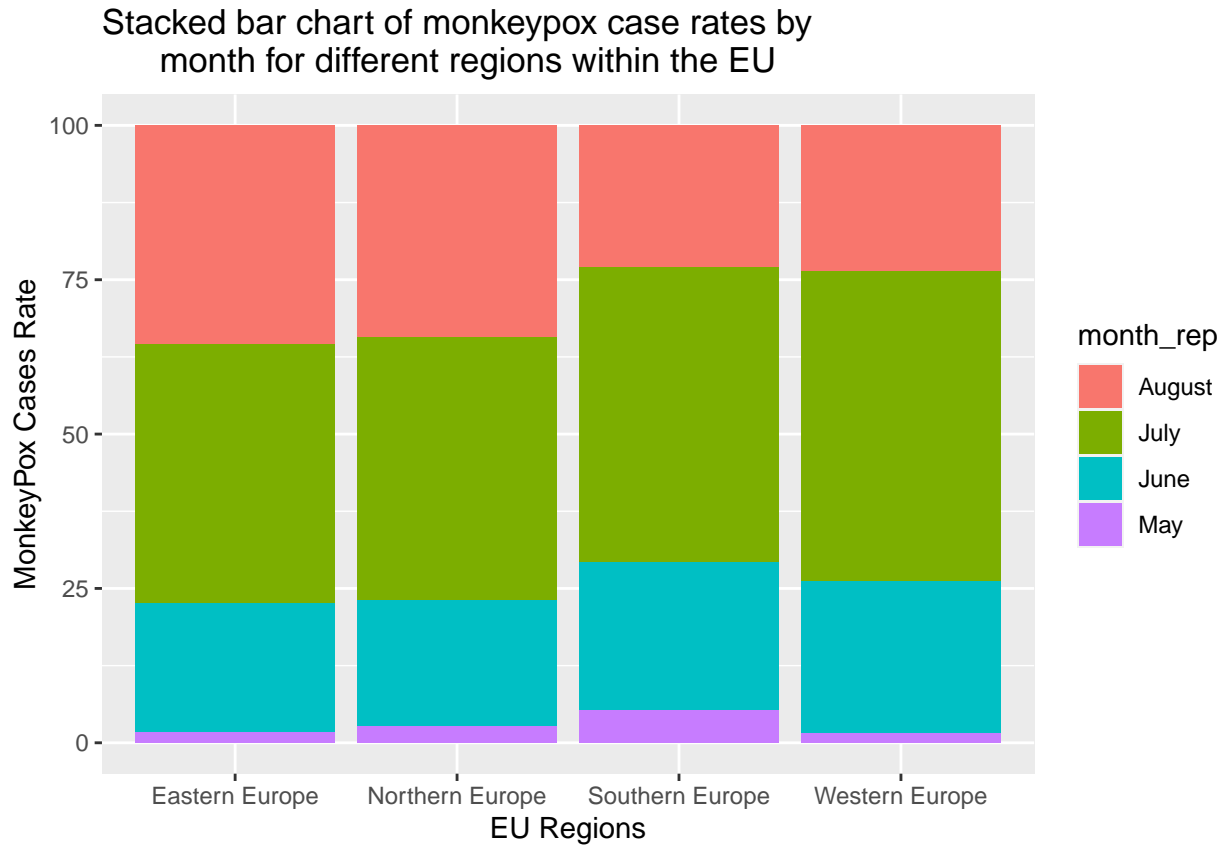
```
scatter_plot <- ggplot(data = total_dataset, aes(x = sex_female,
                                                   y = total_mpx_case)) +
  geom_point(na.rm=TRUE) + theme_minimal(base_size = 15)+
  labs(x = " Total Number of females",
       y = "Total number of MonkeyPox cases",
     title ="Relationship between MonkeyPox cases and
     Numbers of females within EU")
scatter_plot
```


Relationship between MonkeyPox cases and Numbers of females within EU
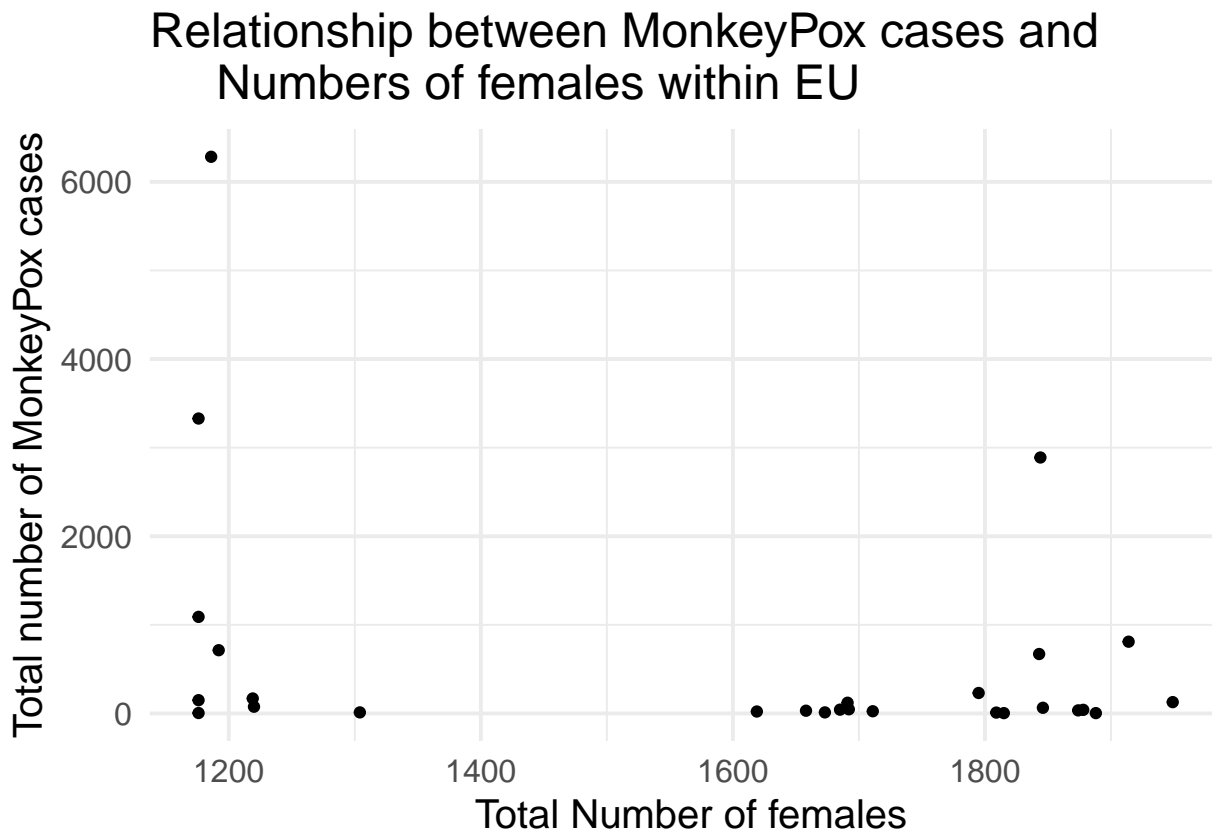
```
scatter_plot <- ggplot(data = total_dataset, aes(x = sex_male,
                                                   y = total_mpx_case)) +
  geom_point(na.rm=TRUE) + theme_minimal(base_size = 15)+
  labs(x = " Total Number of males",
       y = "Total number of MonkeyPox cases",
     title ="Relationship between MonkeyPox cases and
     Numbers of males within EU")
scatter_plot
```

Relationship between MonkeyPox cases and Numbers of males within EU