Midterm Question 1

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MATH 208 - Midterm

Question 1

```r
Toy_Story<- list(
  Movie=c("Toy Story","Toy Story 2","Toy Story 3","Toy Story 4"),
  Year_of_Release=c(1995,2000,2010,2019),
  World_Wide_Gross=c(363,487,1066,1073)
)
Fun_Movies <- list(
  TS = tibble(Movie=c("Toy Story","Toy Story 4","Toy Story 3","Toy Story 2"),
    Year_of_Release=c(1995,2019,2010,2000),
    World_Wide_Gross=c(363,1073,1066,487)),
  FR = tibble(Movie=c("Frozen","Frozen 2"),
    Year_of_Release=c(2013,2019),
    World_Wide_Gross=c(1280,1450)),
  IJ = tibble(Movie=c("Raiders of the Lost Ark", "Kingdom of the Crystal Skull",
    "Last Crusade","Temple of Doom"),
    Year_of_Release = c(1981,2008,1989,1984),
    World_Wide_Gross=c(390,790,474,333))
)
```

```r
# Question 1 (a)
# (i) - 487
Toy_Story[[3]][[2]]
```

```
## [1] 487
```

```r
# (ii) - 2010
Toy_Story[[2]][3]
```

```
## [1] 2010
```

```r
# (iii) - "character"
class(Toy_Story[[1]])
```

```
## [1] "character"
```

```r
# Question 1 (b)
# (i)
# The result that returns "Frozen 2" from the selection is
# A and D - `Fun_Movies$FR$Movie[2]` & `Fun_Movies[2][[1]]$Movie[2]`
Fun_Movies$FR$Movie[2]
```

```
## [1] "Frozen 2"
```

```r
Fun_Movies[["FR"]][1,1]
```

```
## # A tibble: 1 x 1
##   Movie
##   <chr>
## 1 Frozen
```

```r
Fun_Movies[[c(2,1)]]
```

```
## [1] "Frozen"    "Frozen 2"
```

```r
Fun_Movies[2][[1]]$Movie[2]
```

```
## [1] "Frozen 2"
```

```r
# (ii) - # The class returned is (B & C) tibble and list
class(Fun_Movies[[3]][1])
```

```
## [1] "tbl_df"     "tbl"        "data.frame"
```

```r
# (iii) - # The class returned is (A) atomic character vector
class(Fun_Movies[[3]][[1]])
```

```
## [1] "character"
```

```r
# Question 1 (c)

# (i)
IJ_only<-tibble(
  World_Wide_Gross=c(390,333,474,790),
  Year_of_Release=c(1981,1984,1989,2008),
  Movie=(c("Raiders","Temple of Doom","Last Crusade","Kingdom of the Crustal Skull"))) %>%
    mutate(Movie=factor(Movie,levels=Movie))
ggplot(IJ_only,aes(x=Year_of_Release,y=World_Wide_Gross)) +
  geom_line() +
  geom_point(aes(col=Movie),size=4)
```
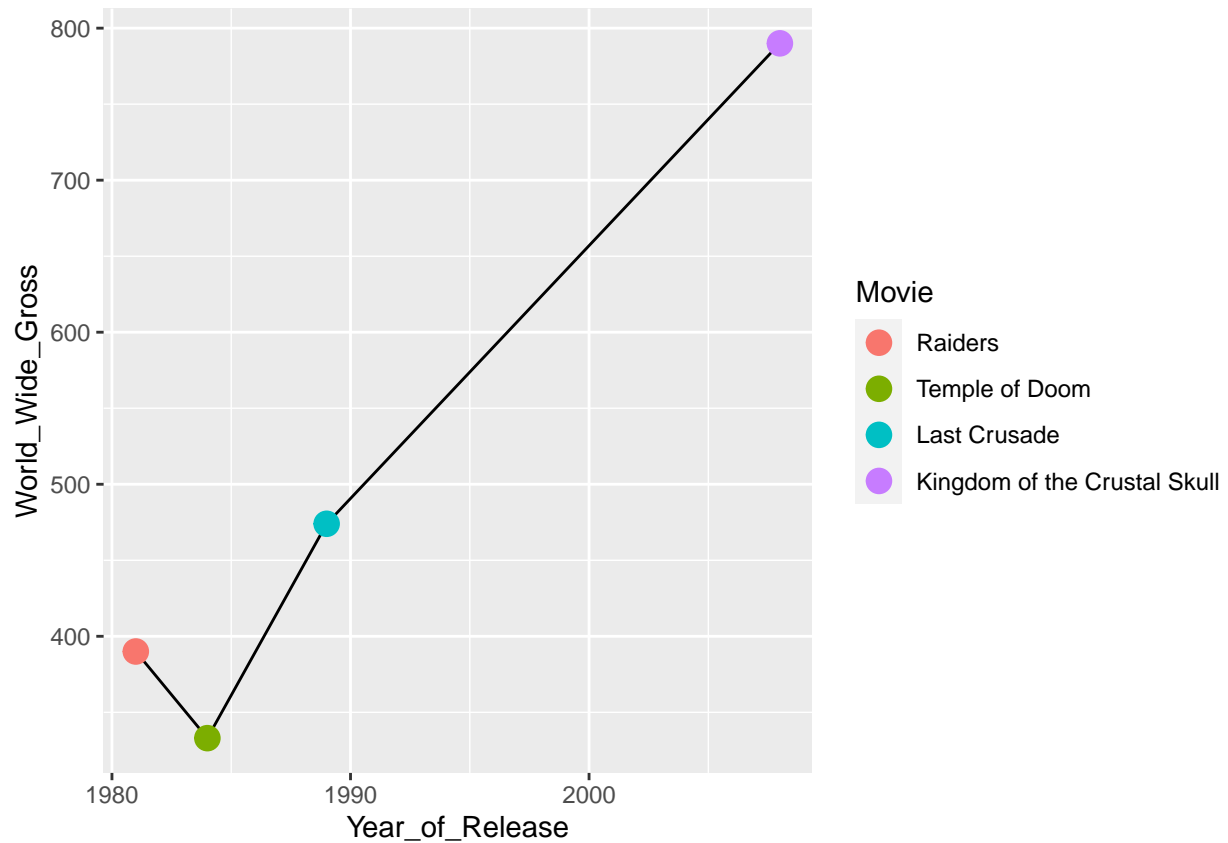
```r
# (ii)
Fun_Movies$FR %>% summarize(
  name = c(
  "Number_of_films",
  "Total_World_Wide_Gross",
  "Average_World_Wide_Gross"
    ), value = c(
      2,
      sum(World_Wide_Gross),
      mean(World_Wide_Gross)
    )
  )
```

```
## # A tibble: 3 x 2
##   name                     value
##   <chr>                    <dbl>
## 1 Number_of_films              2
## 2 Total_World_Wide_Gross    2730
## 3 Average_World_Wide_Gross  1365
```

```r
# # (iii)
Fun_Movies$TS
```

```
## # A tibble: 4 x 3
##   Movie        Year_of_Release World_Wide_Gross
```

```
##    <chr>                <dbl>              <dbl>
## 1 Toy Story              1995                363
## 2 Toy Story 4            2019               1073
## 3 Toy Story 3            2010               1066
## 4 Toy Story 2            2000                487
```

```r
Fun_Movies$TS %>% arrange(Year_of_Release)
```

```
## # A tibble: 4 x 3
##    Movie       Year_of_Release World_Wide_Gross
##    <chr>                <dbl>              <dbl>
## 1 Toy Story              1995                363
## 2 Toy Story 2            2000                487
## 3 Toy Story 3            2010               1066
## 4 Toy Story 4            2019               1073
```

```r
Fun_Movies$TS %>% arrange(desc(Movie))
```

```
## # A tibble: 4 x 3
##    Movie       Year_of_Release World_Wide_Gross
##    <chr>                <dbl>              <dbl>
## 1 Toy Story 4            2019               1073
## 2 Toy Story 3            2010               1066
## 3 Toy Story 2            2000                487
## 4 Toy Story              1995                363
```

```r
# According to the results above
# The only correct answer is (B) Fun_Movies$TS %>% arrange(Year_of_Release)
```