Assignment 4

Problem 1

Create a list named movie_info to store the following information about a movie: Title: "Inception" Release year: 2010 Box office revenue (in millions): 829.9 Rotten Tomatoes scores: Tomatometer = 87, Audience = 91 Cast: "Leonardo DiCaprio", "Joseph Gordon-Levitt", "Ellen Page", "Tom Hardy"

```r
movie_info <- list(
  Title = "Inception",
  Release_Year = 2010,
  Box_Office_Revenue = 829.9,
  Rotten_Tomatoes_Scores = list(Tomatometer = 87, Audience = 91),
  Cast = c("Leonardo DiCaprio", "Joseph Gordon-Levitt", "Ellen Page", "Tom Hardy")
)
```

a. Use str() to inspect the structure of the list.

```r
str(movie_info)
```

```
## List of 5
##  $ Title             : chr "Inception"
##  $ Release_Year      : num 2010
##  $ Box_Office_Revenue : num 830
##  $ Rotten_Tomatoes_Scores:List of 2
##   ..$ Tomatometer: num 87
##   ..$ Audience   : num 91
##  $ Cast              : chr [1:4] "Leonardo DiCaprio" "Joseph Gordon-Levitt" "Ellen Page" "Tom Ha
```

b. Add a new element to the list: the director's name ("Christopher Nolan").

```r
movie_info$Director <- "Christopher Nolan"
movie_info
```

```
## $Title
## [1] "Inception"
##
## $Release_Year
## [1] 2010
##
## $Box_Office_Revenue
## [1] 829.9
##
## $Rotten_Tomatoes_Scores
## $Rotten_Tomatoes_Scores$Tomatometer
```

```
## [1] 87
##
## $Rotten_Tomatoes_Scores$Audience
## [1] 91
##
##
## $Cast
## [1] "Leonardo DiCaprio"    "Joseph Gordon-Levitt" "Ellen Page"
## [4] "Tom Hardy"
##
## $Director
## [1] "Christopher Nolan"
```

c. Access only the Tomatometer score using both $ and [[indexing.

```r
# Need to index twice since Tomatometer itself is a list as well
movie_info$Rotten_Tomatoes_Scores$Tomatometer
```

```
## [1] 87
```

```r
movie_info[["Rotten_Tomatoes_Scores"]][["Tomatometer"]]
```

```
## [1] 87
```

```r
movie_info
```

```
## $Title
## [1] "Inception"
##
## $Release_Year
## [1] 2010
##
## $Box_Office_Revenue
## [1] 829.9
##
## $Rotten_Tomatoes_Scores
## $Rotten_Tomatoes_Scores$Tomatometer
## [1] 87
##
## $Rotten_Tomatoes_Scores$Audience
## [1] 91
##
##
## $Cast
## [1] "Leonardo DiCaprio"    "Joseph Gordon-Levitt" "Ellen Page"
## [4] "Tom Hardy"
##
## $Director
## [1] "Christopher Nolan"
```

d. Create another list for another movie of your choice and combine the two lists into a single list of movies named movie_collection.

```r
movie_info2 <- list(
  Title = "The Conjuring",
  Release_Year = 2013,
  Box_Office_Revenue = 319.5,
  Rotten_Tomatoes_Scores = list(Tomatometer = 86, Audience = 83),
  Cast = c("Vera Farmiga", "Patrick Wilson", "Lili Taylor", "Ron Livingston"),
  Director = "James Wan"
)
movie_info2
```

```
## $Title
## [1] "The Conjuring"
##
## $Release_Year
## [1] 2013
##
## $Box_Office_Revenue
## [1] 319.5
##
## $Rotten_Tomatoes_Scores
## $Rotten_Tomatoes_Scores$Tomatometer
## [1] 86
##
## $Rotten_Tomatoes_Scores$Audience
## [1] 83
##
##
## $Cast
## [1] "Vera Farmiga"   "Patrick Wilson" "Lili Taylor"    "Ron Livingston"
##
## $Director
## [1] "James Wan"
```

```r
# Create a nested list
movie_collection <- list(Inception = movie_info, Conjuring = movie_info2)
movie_collection
```

```
## $Inception
## $Inception$Title
## [1] "Inception"
##
## $Inception$Release_Year
## [1] 2010
##
## $Inception$Box_Office_Revenue
## [1] 829.9
##
## $Inception$Rotten_Tomatoes_Scores
## $Inception$Rotten_Tomatoes_Scores$Tomatometer
## [1] 87
##
## $Inception$Rotten_Tomatoes_Scores$Audience
## [1] 91
```

```
## 
## 
## $Inception$Cast
## [1] "Leonardo DiCaprio"    "Joseph Gordon-Levitt" "Ellen Page"
## [4] "Tom Hardy"
## 
## $Inception$Director
## [1] "Christopher Nolan"
## 
## 
## $Conjuring
## $Conjuring$Title
## [1] "The Conjuring"
## 
## $Conjuring$Release_Year
## [1] 2013
## 
## $Conjuring$Box_Office_Revenue
## [1] 319.5
## 
## $Conjuring$Rotten_Tomatoes_Scores
## $Conjuring$Rotten_Tomatoes_Scores$Tomatometer
## [1] 86
## 
## $Conjuring$Rotten_Tomatoes_Scores$Audience
## [1] 83
## 
## 
## $Conjuring$Cast
## [1] "Vera Farmiga"    "Patrick Wilson" "Lili Taylor"     "Ron Livingston"
## 
## $Conjuring$Director
## [1] "James Wan"
```

e. Use sapply() to extract the titles of all movies in movie_collection.

```
movie_titles <- as.character(sapply(movie_collection, function(x) x$Title))
# without as.character, movie_titles will be a list
movie_titles
```

```
## [1] "Inception"     "The Conjuring"
```