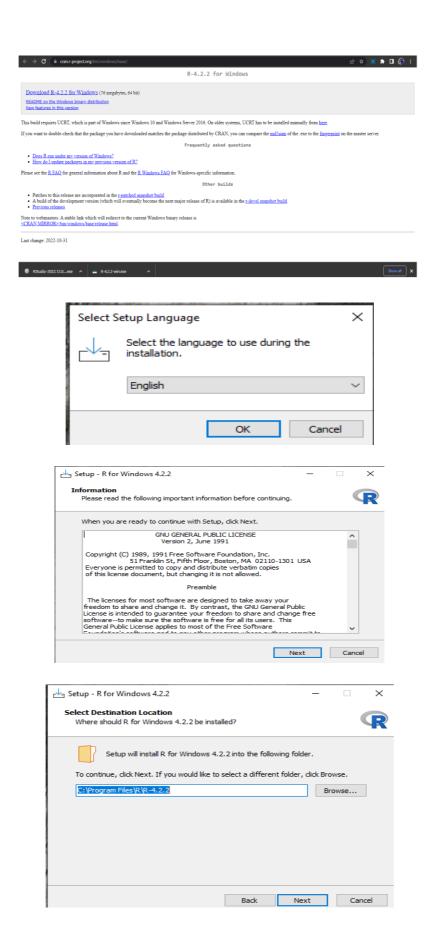
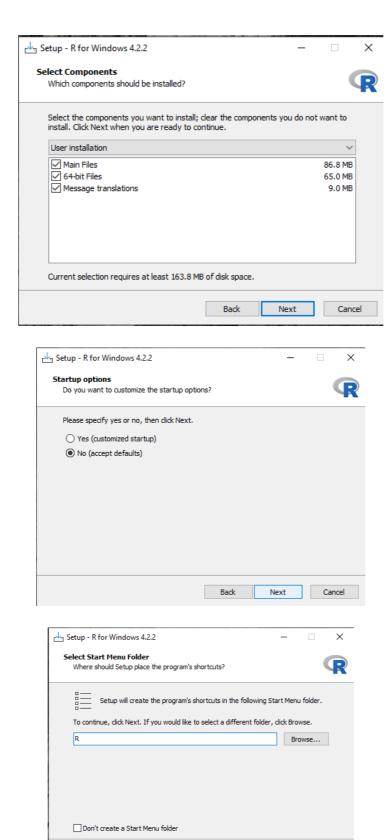
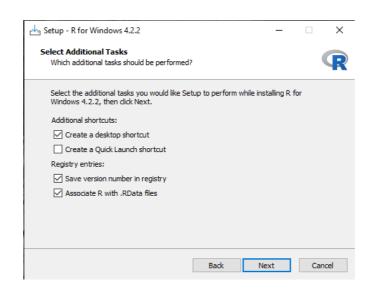
ASSIGNMENT 1(a)

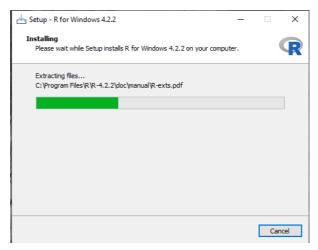
R Installation steps:

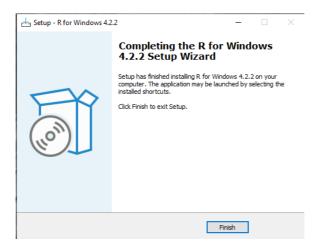




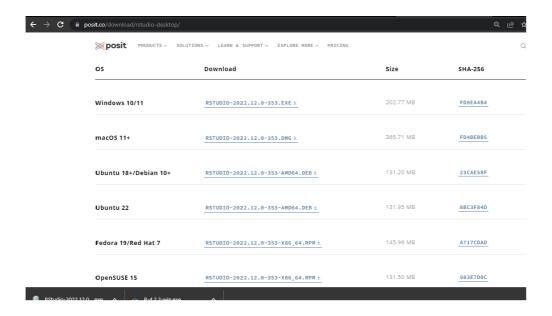
Back Next Cancel

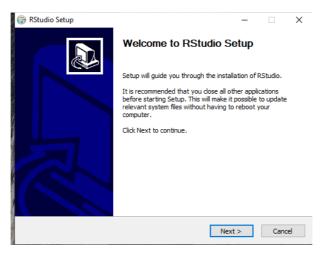


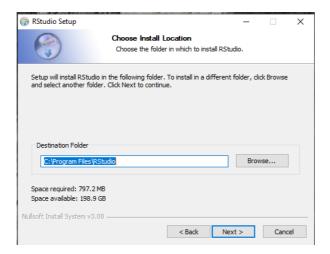


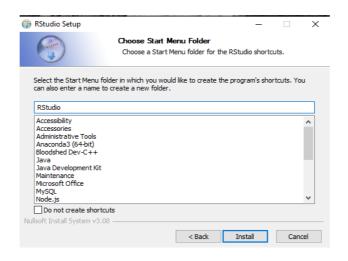


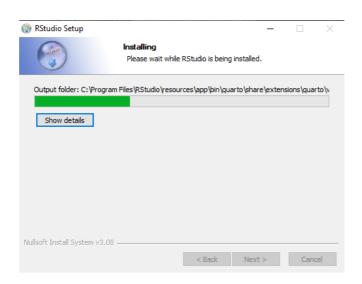
Installing R Studio Desktop

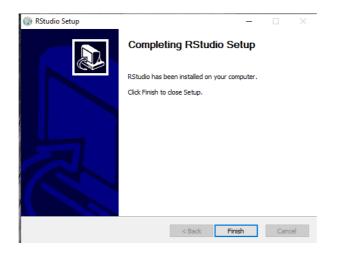












ASSIGNMENT NO.1(b):

Program:

```
name = readline(prompt="Input your name: ")
age = readline(prompt="Input your age: ")
print(paste("My name is",name, "and I am",age ,"years old."))
print(R.version.string)
```

Output:

Input your name: Riya

Input your age: 20

[1] "My name is Riya and I am 20 years old."

[1] "R version 4.1.2 (2021-11-01)"

ASSIGNMENT NO.2:

Program:

```
Fibonacci <- numeric(10)

Fibonacci[1] <- Fibonacci[2] <- 1

for (i in 3:10) Fibonacci[i] <- Fibonacci[i - 2] + Fibonacci[i - 1] print("First 10 Fibonacci numbers:")

print(Fibonacci)
```

- [1] "First 10 Fibonacci numbers:"
- [1] 1 1 2 3 5 8 13 21 34 55

ASSIGNMENT NO.3:

Program:

```
print("First 10 letters in lower case:")
t = head(letters, 10)
print(t)
print("Last 10 letters in upper case:")
t = tail(LETTERS, 10)
print(t)
print("Letters between 22nd to 24th letters in upper case:") e = tail(LETTERS[22:24])
print(e)
```

- [1] "First 10 letters in lower case:"
- [1] "a" "b" "c" "d" "e" "f" "g" "h" "i" "j"
- [1] "Last 10 letters in upper case:"
- $[1] \ "Q" \ "R" \ "S" \ "T" \ "U" \ "V" \ "W" \ "X" \ "Y" \ "Z"$
- [1] "Letters between 22nd to 24th letters in upper case:"
- [1] "V" "W" "X"

ASSIGNMENT NO.4:

Program:

```
n = floor(rnorm(1000, 50, 100))
print('List of random numbers in normal
distribution:') print(n)
t = table(n)
print("Count occurrences of each value:")
print(t)
```

Output:

[1] "List of random numbers in normal distribution:"

[1] 70 -5 88 -110 174 -66 10 8 106 35 -48 -54 12 102 [15] 67 -34 83 -75 71 35 24 109 -3 9 221 231 105 105 [29] -58 43 -39 65 40 78 181 57 60 103 262 232 -77 31 [43] 47 -50 174 67 41 92 243 -88 11 197 -117 126 -99 82 [57] -76 245 27 -35 -79 -14 -278 -6 -3 79 229 -15 -11 52 [71] 127 -14 150 42 184 -45 -37 87 11 146 124 158 113 166 [85] -11 47 -23 -99 63 -7 0 -2 30 -146 141 29 73 114 [99] -16 -14 116 -80 -29 22 352 -60 126 12 287 23 -7 149

[113] 11 40 65 239 94 119 76 47 159 -75 103 91 88 51 [127] 115 51 -170 224 144 133 272 -229 125 -32 39 8 62 105 [141] 21 -70 51 31 223 31 -71 105 -73 -48 -50 117 208 229 [155] 97 134 113 76 -137 -17 -160 -8 -30 53 161 -90 155 -9 [169] 118 -83 101 91 201 146 18 -4 77 -76 142 141 43 95 [183] -56 55 -43 -151 68 51 180 142 53 -27 59 99 39 49 [197] 4 14 201 55 159 -141 161 -113 -46 108 139 143 104 7 [211] -34 21 290 -53 117 245 -44 75 -89 -45 -19 -75 64 205 [225] 27 22 18 99 -13 -25 33 16 281 -169 224 207 124 167 [239] 113 81 42 74 59 -40 155 -40 112 -27 3 60 2 82

[253] 158 78 117 -55 172 6 149 209 -52 -88 62 158 71 34 [267] 146 179 22 92 187 178 -3 119 -25 165 -27 10 58 -25 [281] -37 155 -47 27 -44 -57 57 8 -89 142 52 -19 -116 -80 [295] -55 71 239 187 -55 53 -115 -132 95 21 -48 34 72 -8 [309] 71 70 93 -190 192 189 -72 -19 37 164 -91 30 -109 -79 [323] 11 164 277 -89 156 279 -25 11 78 27 2 16 -34 51 [337] 21 -124 51 -107 51 19 331 77 2 144 103 -13 77 -52 [351] -9 33 54 56 108 204 -24 -5 109 -20 35 -25 61 -20 [365] -33 172 -98 39 131 -72 2 47 168 46 -8 215 -126 154 [379] 167 17 128 185 95 12 -14 -49 -78 246 11 15 -214 -160 [393] 265 -134 61 -54 -38 -26 156 25 41 108 114 72 -45 -29 [407] 178 55 65 88 44 1 -141 136 152 50 74 229 132 -3 [421] 70 -7 115 101 -53 -42 75 -159 8 118 -48 115 38 -17 [435] 121 -170 189 126 53 -10 119 -50 98 -20 161 -48 24 -54 [449] -47 -101 121 33 179 319 26 80 -61 -77 19 186 129 185 [463] 338 -46 102 -303 98 230 109 -74 -37 78 -58 212 82 57 [477] 186 154 76 6 -111 -119 -23 24 25 148 -39 -49 -36 175 [491] 139 46 138 5 -113 86 -89 301 118 -66 102 207 57 165 [505] 18 63 105 67 87 -90 -77 -81 197 286 -169 22 28 60 [519] 58 27 47 49 162 87 -88 189 -63 57 126 -30 70 83 [533] -79 -160 -110 3 -17 141 164 60 -54 24 -96 120 242 -17 [547] 181 -64 147 47 3 62 -195 -148 246 145 98 -50 -42 -24 [561] 94 159 10 211 -129 115 -111 127 -9 -80 -83 108 121 13 [575] 13 -120 20 46 -91 41 -54 36 -39 245 -6 7 264 67 [589] -18 13 0 -76 195 125 102 -43 23 97 -107 89 49 56 [603] 65 -98 94 111 241 -29 262 17 80 50 -32 100 182 201 [617] 115 259 52 181 121 93 192 126 96 -126 263 130 -194 14 [631] 16 173 87 -39 172 126 160 91 185 192 99 152 3 -107 [645] 46 -88 98 -80 98 209 -129 58 16 206 76 119 116 329 [659] 162 -14 195 -13 238 199 208 -82 99 62 74 165 187 111 [673] 3 60 60 -19 -35 176 -94 4 244 47 130 -2 34 175 [687] 53 14 14 29 171 136 -21 217 87 117 80 -4 -23 197 [701] 113 267 4 -76 12 7 42 242 63 61 41 -29 77 243 [715] 124 -78 -43 58 67 73 3

287 288 290 301 314 319 329 331 338 352

1 1 1 1 1 1 1 1 1 1

ASSIGNMENT NO.5:

Program:

```
m1 = matrix(1:20, nrow=5, ncol=4)
print("5 × 4 matrix:")
print(m1)
cells = c(1,3,5,7,8,9,11,12,14)
rnames = c("Row1", "Row2", "Row3")
cnames = c("Col1", "Col2", "Col3")
m2 = matrix(cells, nrow=3, ncol=3, byrow=TRUE,
dimnames=list(rnames, cnames))
print("3 × 3 matrix with labels, filled by rows: ")
print(m2)
print("3 × 3 matrix with labels, filled by columns: ")
m3 = matrix(cells, nrow=3, ncol=3, byrow=FALSE,
dimnames=list(rnames, cnames))
print(m3)
```

```
[1] "5 × 4 matrix:"
[,1] [,2] [,3] [,4]
[1,] 1 6 11 16
[2,] 2 7 12 17
[3,] 3 8 13 18
[4,] 4 9 14 19
[5,] 5 10 15 20
[1] "3 × 3 matrix with labels, filled by rows: "
```

Col1 Col2 Col3

Row1 1 3 5

Row2 7 8 9

Row3 11 12 14

[1] "3 \times 3 matrix with labels, filled by columns: "

Col1 Col2 Col3

Row1 1 7 11

Row2 3 8 12

Row3 5 9 14

ASSIGNMENT NO.6:

Program:

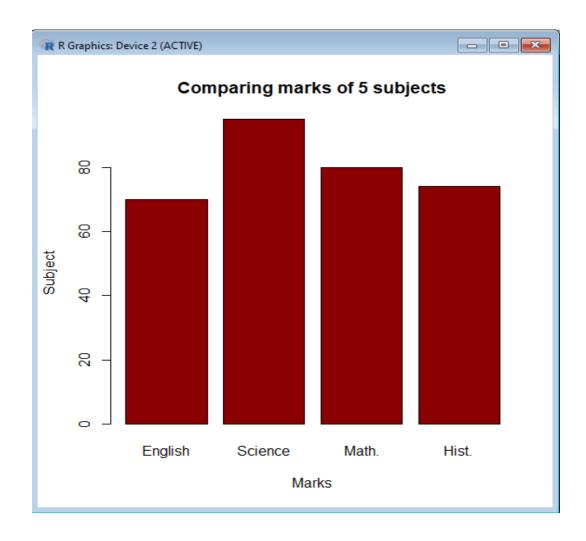
```
nums = c(10, 20, 30, 40, 50, 60)
print('Original vector:')
print(nums)
print(paste("Maximum value of the said vector:",max(nums)))
print(paste("Minimum value of the said vector:",min(nums)))
```

- [1] "Original vector:"
- [1] 10 20 30 40 50 60
- [1] "Maximum value of the said vector: 60"
- [1] "Minimum value of the said vector: 10"

ASSIGNMENT NO.7:

Program:

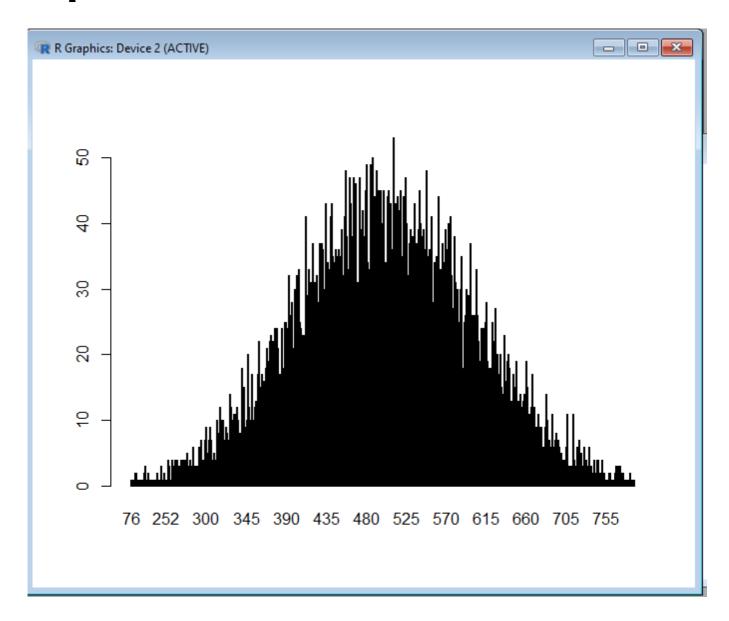
```
marks = c(70, 95, 80, 74)
barplot(marks,
main = "Comparing marks of 5 subjects",
xlab = "Marks",
ylab = "Subject",
names.arg = c("English", "Science", "Math.", "Hist."),
col = "darkred",
horiz = FALSE)
```



ASSIGNMENT NO.8:

Program

```
n = floor(rnorm(10000, 500, 100))
t = table(n)
barplot(t)
```



ASSIGNMENT NO.9:

Program:

```
nums = c(10, 20, 30)
print('Original vector:')
print(nums)
print(paste("Sum of vector elements:",sum(nums)))
print(paste("Mean of vector elements:",mean(nums)))
print(paste("Product of vector
elements:",prod(nums)))
```

- [1] "Original vector:"
- [1] 10 20 30
- [1] "Sum of vector elements: 60"
- [1] "Mean of vector elements: 20"
- [1] "Product of vector elements: 6000"

ASSIGNMENT NO.10:

Program:

```
my_list = list(Chr="Python", nums = 1:15, flag=TRUE)
print(my_list)
```

```
$Chr
[1] "Python"

$nums
[1] 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

$flag
[1] TRUE
```

ASSIGNMENT NO.11:

Program:

```
movie_data = read.csv(file="movies.csv", header=TRUE,
    sep=",") print("Content of the .csv file:")
    print(movie_data)
    Employees = data.frame(Name=c("Anastasia S","Dima
    R", "Katherine S", "JAMES A", "LAURA MARTIN"),
     Gender=c("M","M","F","F","M"),
     Age=c(23,22,25,26,32),
    Designation=c("Clerk", "Manager", "Exective", "CEO", "ASSISTANT")
    , SSN=c("123-34-2346","123-44-779","556-24-433","123-98-
    987","679-77-576")
    print("Summary of the data:")
    print(summary(Employees))
Output:
 [1] "Content of the .csv file:"
 adult
 1 False
 2 False
 3 False
 4 False
 5 False
 6 False
 7 False
 8 False
 9 False
 belongs to collection
 1 {'id': 10194, 'name': 'Toy Story Collection', 'poster_path':
 '/7G9915LfUQ2lVfwMEEhDsn3kT4B.jpg', 'backdrop_path':
 '/9FBwqcd9IRruEDUrTdcaafOMKUq.jpg'}
```

3 {'id': 119050, 'name': 'Grumpy Old Men Collection', 'poster path':

'/nLvUdqgPgm3F85NMCii9gVFUcet.jpg', 'backdrop_path':

'/hypTnLot2z8wpFS7qwsQHW1uV8u.jpg'}

```
5 {'id': 96871, 'name': 'Father of the Bride Collection', 'poster_path':
'/nts4iOmNnq7GNicycMJ9pSAn204.jpg', 'backdrop_path':
'/7qwE57OVZmMJChBpLEbJEmzUydk.jpg'}
7
8
9
budget
1 30000000
2 65000000
3 0
4 16000000
5.0
6 60000000
7 58000000
80
9 35000000
genres 1 [{'id': 16, 'name': 'Animation'}, {'id': 35, 'name': 'Comedy'}, {'id': 10751,
'name': 'Family'}]
2 [{id': 12, 'name': 'Adventure'}, {id': 14, 'name': 'Fantasy'}, {id': 10751, 'name':
'Family'}]
3 [{'id': 10749, 'name': 'Romance'}, {'id': 35, 'name': 'Comedy'}]
4 [{'id': 35, 'name': 'Comedy'}, {'id': 18, 'name': 'Drama'}, {'id': 10749, 'name': 'Romance'}]
5 [{'id': 35, 'name': 'Comedy'}]
6 [{'id': 28, 'name': 'Action'}, {'id': 80, 'name': 'Crime'}, {'id': 18, 'name': 'Drama'}, {'id':
53, 'name': 'Thriller'}]
7 [{'id': 35, 'name': 'Comedy'}, {'id': 10749, 'name': 'Romance'}]
8 [{'id': 28, 'name': 'Action'}, {'id': 12, 'name': 'Adventure'}, {'id': 18, 'name': 'Drama'}, {'id':
10751, 'name': 'Family'}]
9 [{'id': 28, 'name': 'Action'}, {'id': 12, 'name': 'Adventure'}, {'id': 53, 'name': 'Thriller'}]
homepage id imdb id original language
1 http://toystory.disney.com/toy-story 862 tt0114709 en 2 8844
tt0113497 en
3 15602 tt0113228 en
4 31357 tt0114885 en
5 11862 tt0113041 en
6 949 tt0113277 en
7 11860 tt0114319 en
8 45325 tt0112302 en
9 9091 tt0114576 en
original_title
1 Toy Story
2 Jumanji
3 Grumpier Old Men
4 Waiting to Exhale
5 Father of the Bride Part II
6 Heat
7 Sabrina
8 Tom and Huck
9 Sudden Death
overview
1
Led by Woody, Andy's toys live happily in his room until Andy's birthday brings Buzz
```

Lightyear onto the scene. Afraid of losing his place in Andy's heart, Woody plots against Buzz. But when circumstances separate Buzz and Woody from their owner, the duo eventually learns to put aside their differences.

2 When siblings Judy and Peter discover an enchanted board game that opens the door to a magical world, they unwittingly invite Alan -- an adult who's been trapped inside the game for 26 years -- into their living room. Alan's only hope for freedom is to finish the game, which proves risky as all three find themselves running from giant rhinoceroses, evil monkeys and other terrifying creatures.

3 A family wedding reignites the ancient feud between next-door neighbors and fishing buddies John and Max. Meanwhile, a sultry Italian divorcée opens a restaurant at the local bait shop, alarming the locals who worry she'll scare the fish away. But she's less interested in seafood than she is in cooking up a hot time with Max. 4 Cheated on, mistreated and stepped on, the women are holding their breath, waiting for the elusive "good man" to break a string of less-than-stellar lovers. Friends and confidants Vannah, Bernie, Glo and Robin talk it all out, determined to find a better way to breathe.

5

Just when George Banks has recovered from his daughter's wedding, he receives the news that she's pregnant ... and that George's wife, Nina, is expecting too. He was planning on selling their home, but that's a plan that -- like George -- will have to change with the arrival of both a grandchild and a kid of his own.

6 Obsessive master thief, Neil McCauley leads a top-notch crew on various insane heists throughout Los Angeles while a mentally unstable detective, Vincent Hanna pursues him without rest. Each man recognizes and respects the ability and the dedication of the other even though they are aware their cat-and-mouse game may end in violence. 7

An ugly duckling having undergone a remarkable change, still harbors feelings for her crush: a carefree playboy, but not before his business-focused brother has something to say about it.

8 A mischievous young boy, Tom Sawyer, witnesses a murder by the deadly Injun Joe. Tom becomes friends with Huckleberry Finn, a boy with no future and no family. Tom has to choose between honoring a friendship or honoring an oath because the town alcoholic is accused of the murder. Tom and Huck go through several adventures trying to retrieve evidence. 9 International action superstar Jean Claude Van Damme teams with Powers Boothe in a Tension-packed, suspense thriller, set against the backdrop of a Stanley Cup game. Van Damme portrays a father whose daughter is suddenly taken during a championship hockey game. With the captors demanding a billion dollars by game's end, Van Damme frantically sets a plan in motion to rescue his daughter and abort an impending explosion before the final buzzer...

popularity poster_path

8

```
1 21.946943 /rhIRbceoE9lR4veEXuwCC2wARtG.jpg
2 17.015539 /vzmL6fP7aPKNKPRTFnZmiUfciyV.jpg
3 11.712900 /6ksm1sjKMFLbO7UY2i6G1ju9SML.jpg
4 3.859495 /16XOMpEaLWkrcPqSQqhTmeJuqQl.jpg
5 8.387519 /e64sOI48hQXyru7naBFyssKFxVd.jpg
6 17.924927 /zMyfPUelumio3tiDKPffaUpsQTD.jpg
7 6.677277 /jQh15y5YB7bWz1NtffNZmRw0s9D.jpg
8 2.561161 /sGO5Qa55p7wTu7FJcX4H4xIVKvS.jpg
9 5.231580 /eoWvKD60lT95Ss1MYNgVExpo5iU.jpg
```

```
production_companies

[{name': 'Pixar Animation Studios', 'id': 3}]

[{name': 'TriStar Pictures', 'id': 559}, {'name': 'Teitler Film', 'id': 2550}, {'name': 'Interscope Communications', 'id': 10201}]

[{name': 'Warner Bros.', 'id': 6194}, {'name': 'Lancaster Gate', 'id': 19464}] 4

[{name': 'Twentieth Century Fox Film Corporation', 'id': 306}]

[{name': 'Sandollar Productions', 'id': 5842}, {name': 'Touchstone Pictures', 'id': 9195}] 6

[{name': 'Regency Enterprises', 'id': 508}, {'name': 'Forward Pass', 'id': 675}, {name': 'Warner Bros.', 'id': 6194}]

7 [{name': 'Paramount Pictures', 'id': 4}, {'name': 'Scott Rudin Productions', 'id': 258}, {name': 'Mirage Enterprises', 'id': 932}, {'name': 'Sandollar Productions', 'id': 5842}, {name': 'Constellation Entertainment', 'id': 14941}, {'name': 'Worldwide', 'id': 55873}, {name': 'Mont Blanc Entertainment GmbH', 'id': 58079}]
```

```
[{'name': 'Walt Disney Pictures', 'id': 2}]
[{name': 'Universal Pictures', 'id': 33}, {name': 'Imperial Entertainment', 'id': 21437},
{'name': 'Signature Entertainment', 'id': 23770}]
production_countries 1 [{'iso_3166_1': 'US', 'name': 'United States of America'}] 2
[{'iso_3166_1': 'US', 'name': 'United States of America'}] 3 [{'iso_3166_1': 'US', 'name':
'United States of America'}] 4 [{'iso_3166_1': 'US', 'name': 'United States of America'}]
5 [{'iso_3166_1': 'US', 'name': 'United States of America'}] 6 [{'iso_3166_1': 'US',
'name': 'United States of America'}] 7 [{'iso_3166_1': 'DE', 'name': 'Germany'},
{'iso_3166_1': 'US', 'name': 'United States of America'}]
8 [{'iso_3166_1': 'US', 'name': 'United States of America'}] 9 [{'iso_3166_1': 'US',
'name': 'United States of America'} release_date revenue runtime
1 1995-10-30 373554033 81
2 1995-12-15 262797249 104
3 1995-12-22 0 101
4 1995-12-22 81452156 127
5 1995-02-10 76578911 106
6 1995-12-15 187436818 170
7 1995-12-15 0 127
8 1995-12-22 0 97
9 1995-12-22 64350171 106
spoken languages
1 [{'iso_639_1': 'en', 'name': 'English'}]
2 [{'iso_639_1': 'en', 'name': 'English'}, {'iso_639_1': 'fr', 'name':
'Français'}] 3 [{'iso_639_1': 'en', 'name': 'English'}]
4 [{'iso_639_1': 'en', 'name': 'English'}]
5 [{'iso_639_1': 'en', 'name': 'English'}]
6 [{iso 639 1': 'en', 'name': 'English'}, {iso 639 1': 'es', 'name': 'Español'}]
7 [{'iso_639_1': 'fr', 'name': 'Français'}, {'iso_639_1': 'en', 'name': 'English'}]
8 [{'iso_639_1': 'en', 'name': 'English'}, {'iso_639_1': 'de', 'name': 'Deutsch'}]
9 [{'iso_639_1': 'en', 'name': 'English'}]
status
1 Released
2 Released
3 Released
4 Released
5 Released
6 Released
7 Released
8 Released
9 Released
tagline
2 Roll the dice and unleash the excitement!
3 Still Yelling. Still Fighting. Still Ready for Love.
4 Friends are the people who let you be yourself... and never let you forget it. 5
Just When His World Is Back To Normal... He's In For The Surprise Of His Life!
6 A Los Angeles Crime Saga
7 You are cordially invited to the most surprising merger of the year. 8 The
Original Bad Boys.
9 Terror goes into overtime.
title video vote average vote count
1 Toy Story False 7.7 5415
2 Jumanji False 6.9 2413
3 Grumpier Old Men False 6.5 92
4 Waiting to Exhale False 6.1 34
5 Father of the Bride Part II False 5.7 173
6 Heat False 7.7 1886
7 Sabrina False 6.2 141
8 Tom and Huck False 5.4 45
9 Sudden Death False 5.5 174
```

[1] "Summary of the data:"

> print(summary(Employees))

Name Gender Age Designation

Length:5 Length:5 Min. :22.0 Length:5

Class :character Class :character 1st Qu.:23.0 Class :character Mode :character Median :25.0 Mode :character

Mean :25.6

3rd Qu.:26.0

Max. :32.0

SSN

Length:5

Class :character

Mode :character