Assignment_6

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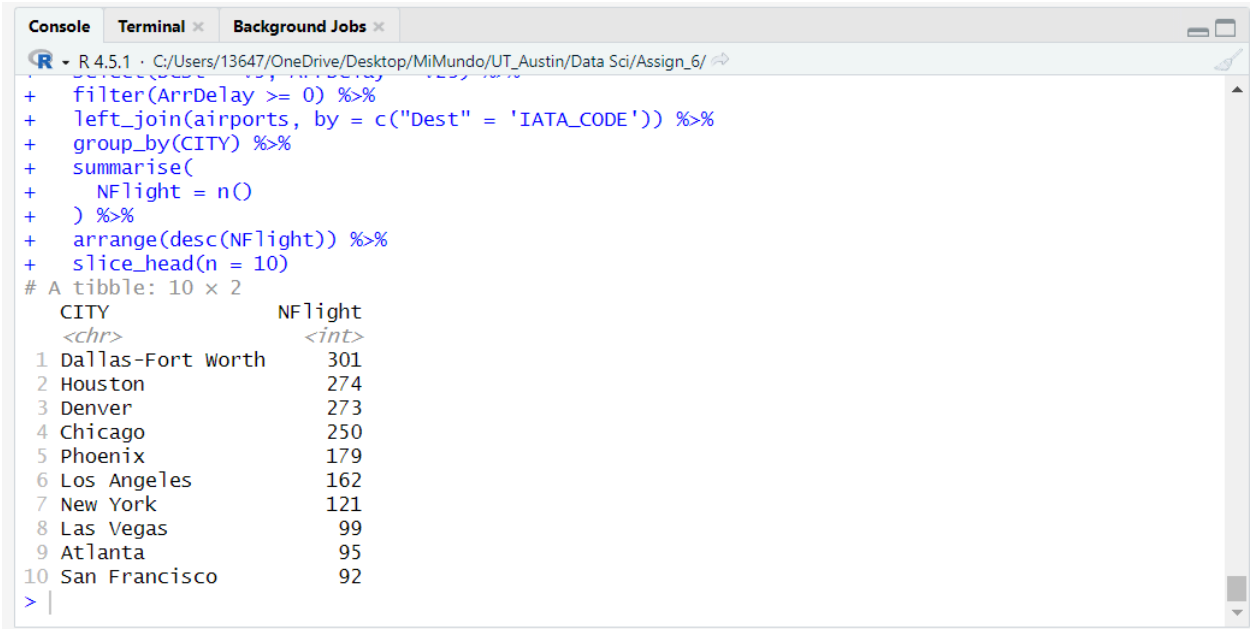
Annotation:

To keep the content concise and easy to read, I removed the part of the code screenshot, and left only the output console's screenshot. Since I submitted the code anyway…...

Task 1: How many flights are in this dataset from Houston to the city of "Los Angeles"? Print the number.

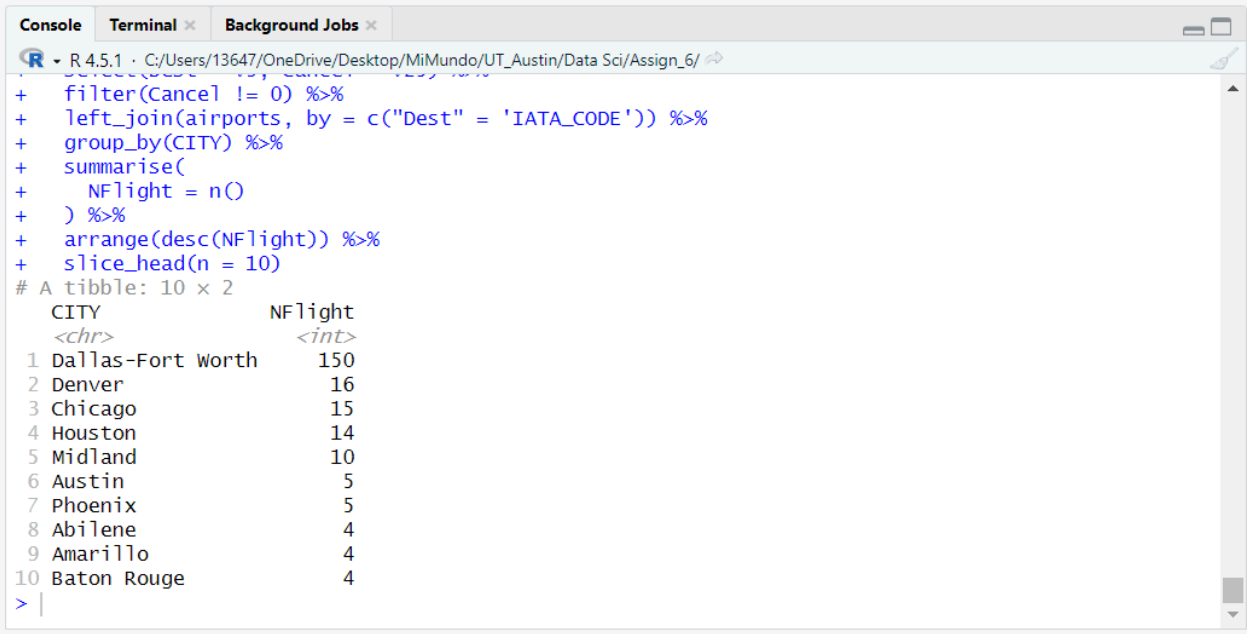
As you can see, the numbers of flights in the dataset from Houston to the city of Los Angeles are 13.

Task 2: Which top-10 destination cities have the highest arrival delay of flights?



The top-10 destination cities that have the highest arrival delay to flights are Dallas-Fort Worth, Houston, Denver, Chicago, Phoenix, Los Angeles, New York, Las Vegas, Atlanta, San Francisco.

Task 3: Which top 10 destination cities have the most cancellations of flights?



```
Console  Terminal  Background Jobs
R 4.5.1 · C:/Users/13647/OneDrive/Desktop/MiMundo/UT_Austin/Data Sci/Assign_6/
+   filter(Cancel != 0) %>%
+   left_join(airports, by = c("Dest" = 'IATA_CODE')) %>%
+   group_by(CITY) %>%
+   summarise(
+     NFlight = n()
+   ) %>%
+   arrange(desc(NFlight)) %>%
+   slice_head(n = 10)
# A tibble: 10 × 2
   CITY              NFlight
   <chr>               <int>
 1 Dallas-Fort Worth     150
 2 Denver                 16
 3 Chicago                15
 4 Houston                14
 5 Midland                10
 6 Austin                  5
 7 Phoenix                 5
 8 Abilene                 4
 9 Amarillo                4
10 Baton Rouge             4
>
```

The top 10 destination cities that have the most cancellations of flights are Dallas-Fort Worth, Denver, Chicago, Houston, Midland, Austin, Phoenix, Abilene, Amarillo, Baton Rouge.

Task 4: Are there any cities without a flight from Houston?

```
> print("The cities without a flight from Houston")
[1] "The cities without a flight from Houston"
> cities.without.hou
  [1] "West Palm Beach"              "Anchorage"
  [3] "Houston"                      "Portland"
  [5] "Windsor Locks"                "Hilo"
  [7] "Kailua/Kona"                  "Kahului"
  [9] "Myrtle Beach"                 "Lihue"
 [11] "Aguadilla"                    "Buffalo"
 [13] "Long Beach"                   "Trenton"
 [15] "Brainerd"                     "Rock Springs"
 [17] "Saginaw"                      "Meridian"
 [19] "Kotzebue"                     "Burbank"
 [21] "Sacramento"                   "Jamestown"
 [23] "Boise"                        "Deadhorse"
 [25] "White Plains"                 "Charlotte Amalie"
 [27] "Harrisburg"                   "Rhinelander"
 [29] "San Luis Obispo"              "Juneau"
 [31] "Ketchikan"                    "Akron"
 [33] "Sarasota"                     "Burlington"
 [35] "Dayton"                       "Pueblo"
 [37] "Spokane"                      "Worcester"
 [39] "Syracuse"                     "Greensboro"
```

```
 [41] "Lawton"                      "Atlantic City"
 [43] "Billings"                    "Eugene"
 [45] "Traverse City"               "Providence"
 [47] "Cedar City"                  "Yuma"
 [49] "Tallahassee"                 "Moline"
 [51] "Fort Wayne"                  "Madison"
 [53] "Bismarck"                    "Medford"
 [55] "Alpena"                      "Mammoth Lakes"
 [57] "Crescent City"               "Santa Barbara"
 [59] "Lansing"                     "Duluth"
 [61] "Fresno"                      "Wichita Falls"
 [63] "Springfield"                 "Cedar Rapids"
 [65] "Fort Smith"                  "Montgomery"
 [67] "Wilkes-Barre/Scranton"       "San Angelo"
 [69] "Roanoke"                     "Monterey"
 [71] "Augusta"                     "Rochester"
 [73] "Melbourne"                   "Peoria"
 [75] "Beaumont/Port Arthur"        "Waco"
 [77] "Key West"                    "Sioux Falls"
 [79] "Chattanooga"                 "Wrangell"
 [81] "Flint"                       "Dickinson"
 [83] "Manhattan"                   "Moab"
 [85] "Barrow"                      "Green Bay"
 [87] "Appleton"                    "Santa Fe"
 [89] "Muskegon"                    "Flagstaff"
 [91] "Kalispell"                   "Butte"
 [93] "Evansville"                  "Durango"
 [95] "Lincoln"                     "Dubuque"
 [97] "Fargo"                       "Nome"
 [99] "Missoula"                    "Texarkana"
[101] "Minot"                       "Rapid City"
[103] "Islip"                       "Longview"
[105] "South Bend"                  "Manchester"
[107] "Roswell"                     "Sitka"
[109] "Hancock"                     "Fayetteville"
[111] "Wilmington"                  "Champaign/Urbana"
[113] "Albany"                      "Abilene"
[115] "Great Falls"                 "Bloomington"
[117] "Gainesville"                 "Hailey"
[119] "Petersburg"                  "Asheville"
[121] "Toledo"                      "St George"
[123] "Gillette"                    "Helena"
[125] "Casper"                      "Pocatello"
[127] "Bethel"                      "Vernal"
[129] "Redmond"                     "Hays"
[131] "Pasco"                       "Cody"
[133] "International Falls"         "Fairbanks"
[135] "Elko"                        "Bemidji"
[137] "Idaho Falls"                 "Iron Mountain/Kingsford"
```

```
[139] "Hibbing"                    "Aberdeen"
[141] "St Cloud"                   "Arcata/Eureka"
[143] "Escanaba"                   "Sault Ste. Marie"
[145] "Newburgh"                   "Daytona Beach"
[147] "Bristol"                    "Kalamazoo"
[149] "Christiansted"              "Grand Island"
[151] "Charlottesville"            "Garden City"
[153] "Pellston"                   "La Crosse"
[155] "Santa Maria"                "Redding"
[157] "Newport News"               "Columbus-Starkville-West Point"
[159] "Laramie"                    "Erie"
[161] "Paducah"                    "Eau Claire"
[163] "Latrobe"                    "Bellingham"
[165] "Devils Lake"                "Mosinee"
[167] "Allentown"                  "Waterloo"
[169] "Dothan"                     "Twin Falls"
[171] "Adak"                       "Elmira"
[173] "Valdosta"                   "Hattiesburg-Laurel"
[175] "Sioux City"                 "Agana"
[177] "State College"              "St. Augustine"
[179] "Brunswick"                  "Joplin"
```

Task 5: What is the ratio of flights canceled for each city? Which city has the highest ratio?

```
> print(city.cal.ratio, n = 112)
# A tibble: 112 × 2
    CITY                       CalRatio
    <chr>                      <chr>
  1 Abilene                    100%
  2 Fort Smith                 100%
  3 Grand Island               100%
  4 Hobbs                      100%
  5 San Angelo                 100%
  6 Lawton                     75%
  7 Tyler                      75%
  8 Waco                       66.7%
  9 Wichita Falls              66.7%
 10 Midland                    62.5%
 11 College Station            60%
 12 Brownsville                50%
 13 Gillette                   50%
 14 Jamestown                  50%
 15 Laredo                     50%
 16 Longview                   50%
 17 Roswell                    50%
 18 Santa Fe                   50%
 19 Texarkana                  50%
 20 Amarillo                   40%
 21 Baton Rouge                33.3%
```

Manhattan	33.3%
Springfield	30%
Moline	28.6%
Fayetteville/Springdale/Rogers	27.3%
Casper	25%
Chattanooga	25%
Corpus Christi	25%
Durango	25%
Grand Junction	25%
Killeen	25%
Monroe	25%
Pasco	25%
Peoria	25%
Valparaiso	25%
Dallas-Fort Worth	24.2%
Lexington	22.2%
Alexandria	20%
Lafayette	20%
Missoula	20%
Montgomery	20%
Cedar Rapids	18.2%
Columbia	18.2%
Fargo	18.2%
Fort Wayne	16.7%
Tallahassee	16.7%
Wichita	16.7%
Madison	15.4%
McAllen	14.3%
Gulfport-Biloxi	12.5%
Harlingen	12.5%
Little Rock	12.5%
Mobile	12.5%
Pensacola	12.5%
Eagle	11.1%
Greensboro	11.1%
Huntsville	11.1%
Shreveport	11.1%
Tulsa	10.5%
Austin	7.7%
Jackson	7.4%
Knoxville	7.1%
Oklahoma City	7.1%
Savannah	6.7%
Covington	6.2%
Grand Rapids	5.9%
San Antonio	5.9%
St Louis	5.6%
Des Moines	5.6%
Birmingham	5.3%

```
Louisville                5.3%
Memphis                   4.3%
Charleston                4.2%
Omaha                     3.8%
Denver                    3.7%
Ontario                   3.6%
San Jose                  3.6%
Tucson                    3.2%
Houston                   3.2%
Santa Ana                 3.2%
Albuquerque               2.9%
Philadelphia              2.6%
Columbus                  2.5%
Chicago                   2.3%
Baltimore                 2.2%
Milwaukee                 2%
Cleveland                 1.9%
Miami                     1.8%
Detroit                   1.8%
Phoenix                   1.6%
New Orleans               1.6%
Tampa                     1.5%
Nashville                 1.4%
Ft. Myers                 1.4%
Portland                  1.3%
Boston                    1.3%
San Francisco             1.1%
Chantilly                 1%
Newark                    1%
Honolulu                  1%
Arlington                 0.8%
Los Angeles               0.8%
San Diego                 0.8%
New York                  0.8%
Ft. Lauderdale            0.6%
Seattle                   0.5%
Minneapolis               0.5%
Salt Lake City            0.5%
Charlotte                 0.5%
Las Vegas                 0.4%
Orlando                   0.4%
Atlanta                   0.3%
```

The cities with the highest ratio of flight cancellation are Abilene, Fort Smith, Grand Island, Hobbs, and San Angelo.