SHETH L.U.J.AND SIR M.V. COLLEGE
PRACTICAL NO.11
Data Analysis with SAS / SPSS /R

AIM:- Reshaping data using pivot_longer() and pivot_wider() (R).

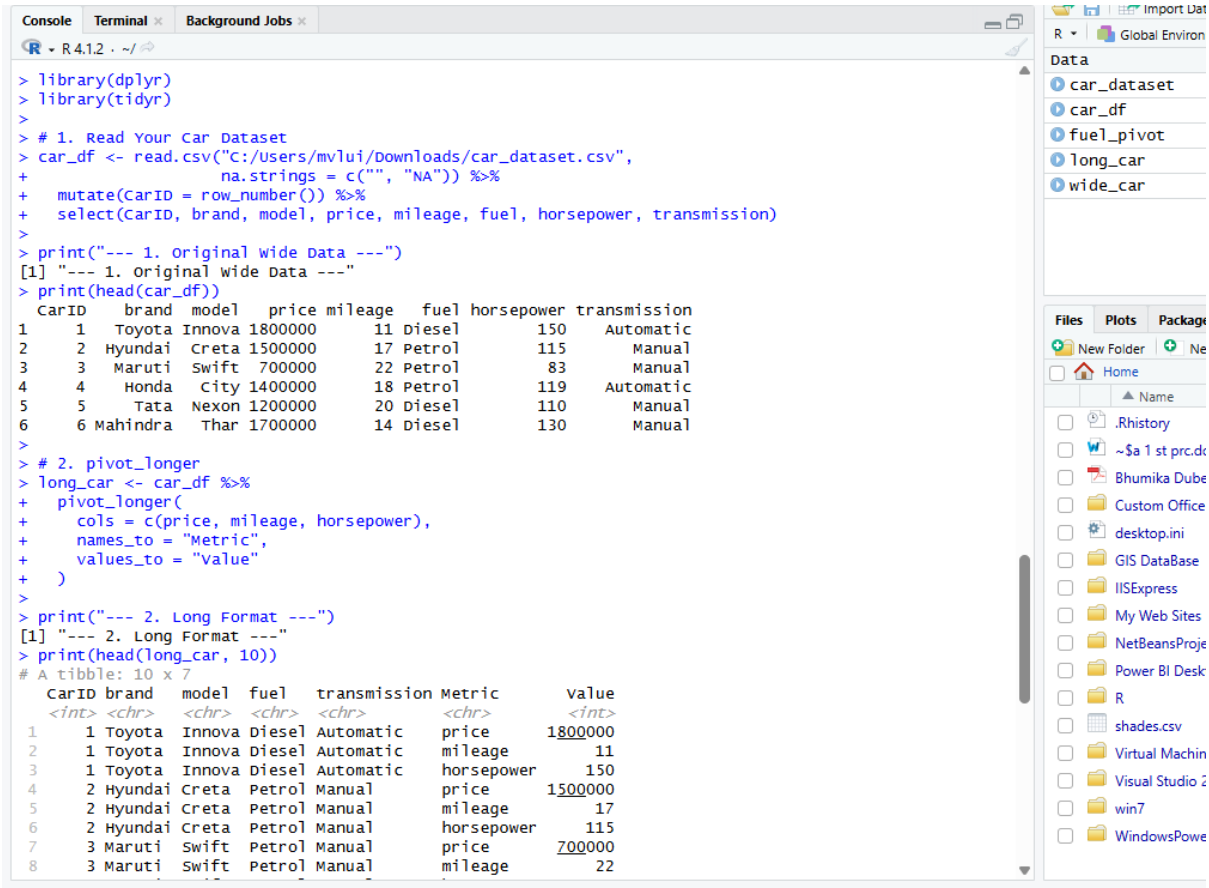
INPUT:-

```
library(dplyr)
library(tidyr)

# 1. Read Your Car Dataset
car_df <- read.csv("C:/Users/mvlui/Downloads/car_dataset.csv",
                   na.strings = c("", "NA")) %>%
  mutate(CarID = row_number()) %>%
  select(CarID, brand, model, price, mileage, fuel, horsepower, transmission)

print("--- 1. Original Wide Data ---")
print(head(car_df))

# 2. pivot_longer
long_car <- car_df %>%
  pivot_longer(
    cols = c(price, mileage, horsepower),
    names_to = "Metric",
    values_to = "Value"
  )

print("--- 2. Long Format ---")
print(head(long_car, 10))
```

```
# 3. pivot_wider
wide_car <- long_car %>%
  pivot_wider(
    names_from = Metric,
    values_from = Value
  )

print("--- 3. Wide Format ---")
print(head(wide_car))

# 4. Fuel-wise Price Pivot
fuel_pivot <- car_df %>%
  select(CarID, fuel, price) %>%
  pivot_wider(
    names_from = fuel,
    values_from = price
  )

print("--- 4. Fuel Pivot ---")
print(head(fuel_pivot))
```

SHETH L.U.J.AND SIR M.V. COLLEGE
PRACTICAL NO.11
Data Analysis with SAS / SPSS /R

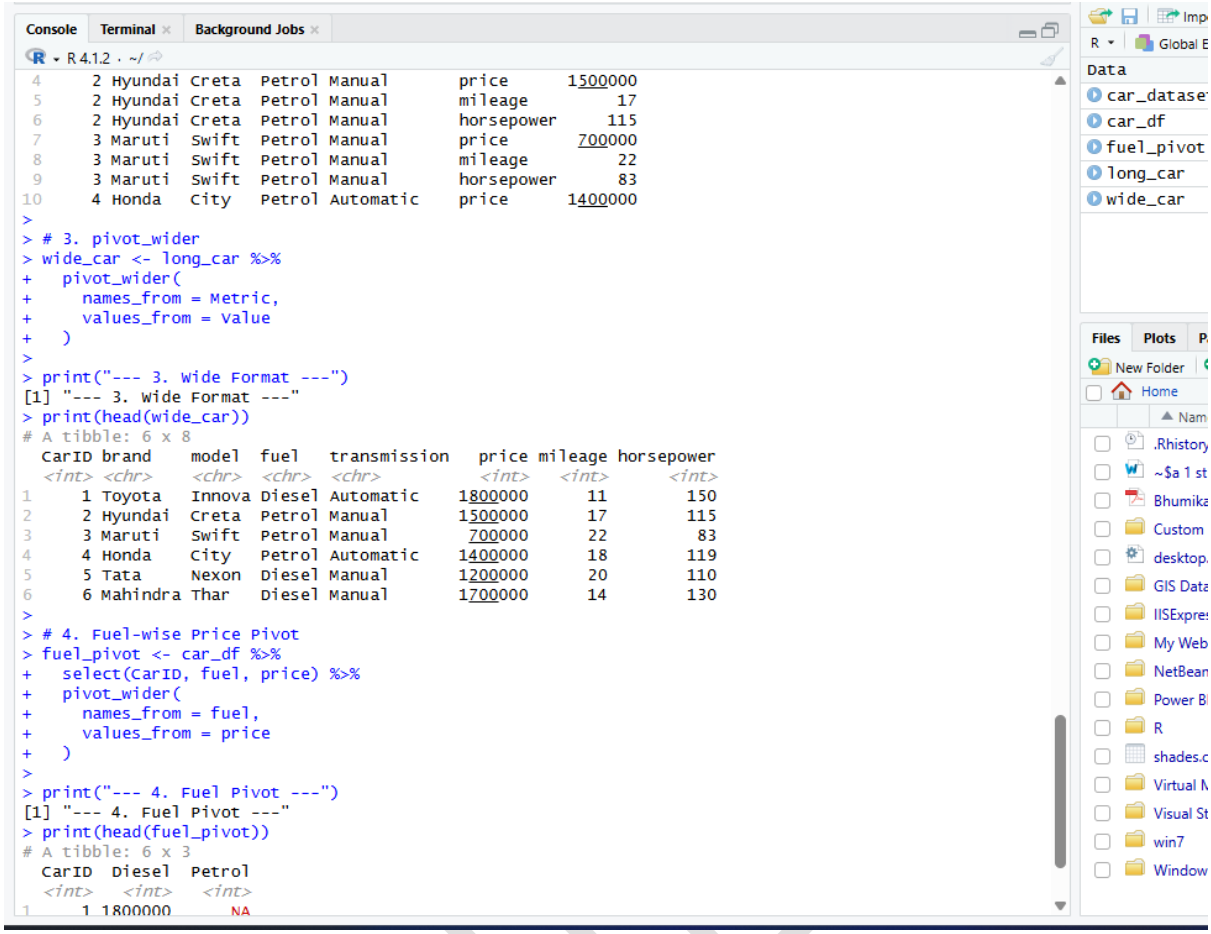
OUTPUT:-



```
> library(dplyr)
> library(tidyr)
>
> # 1. Read Your Car Dataset
> car_df <- read.csv("C:/Users/mvlui/Downloads/car_dataset.csv",
+                    na.strings = c("", "NA")) %>%
+   mutate(CarID = row_number()) %>%
+   select(CarID, brand, model, price, mileage, fuel, horsepower, transmission)
>
> print("--- 1. Original Wide Data ---")
[1] "--- 1. Original Wide Data ---"
> print(head(car_df))
  CarID    brand  model   price mileage   fuel horsepower transmission
1     1   Toyota Innova 1800000      11 Diesel        150    Automatic
2     2  Hyundai  Creta 1500000      17 Petrol        115       Manual
3     3   Maruti  Swift  700000      22 Petrol         83       Manual
4     4    Honda   City 1400000      18 Petrol        119    Automatic
5     5     Tata  Nexon 1200000      20 Diesel        110       Manual
6     6 Mahindra   Thar 1700000      14 Diesel        130       Manual
>
> # 2. pivot_longer
> long_car <- car_df %>%
+   pivot_longer(
+     cols = c(price, mileage, horsepower),
+     names_to = "Metric",
+     values_to = "Value"
+   )
>
> print("--- 2. Long Format ---")
[1] "--- 2. Long Format ---"
> print(head(long_car, 10))
# A tibble: 10 x 7
   CarID brand   model  fuel   transmission Metric       Value
   <int> <chr>   <chr>  <chr>  <chr>        <chr>        <int>
 1     1 Toyota  Innova Diesel Automatic    price      1800000
 2     1 Toyota  Innova Diesel Automatic    mileage         11
 3     1 Toyota  Innova Diesel Automatic    horsepower     150
 4     2 Hyundai Creta  Petrol Manual       price      1500000
 5     2 Hyundai Creta  Petrol Manual       mileage         17
 6     2 Hyundai Creta  Petrol Manual       horsepower     115
 7     3 Maruti  Swift  Petrol Manual       price       700000
 8     3 Maruti  Swift  Petrol Manual       mileage         22
```


VIBHUTI GAWADE
S079

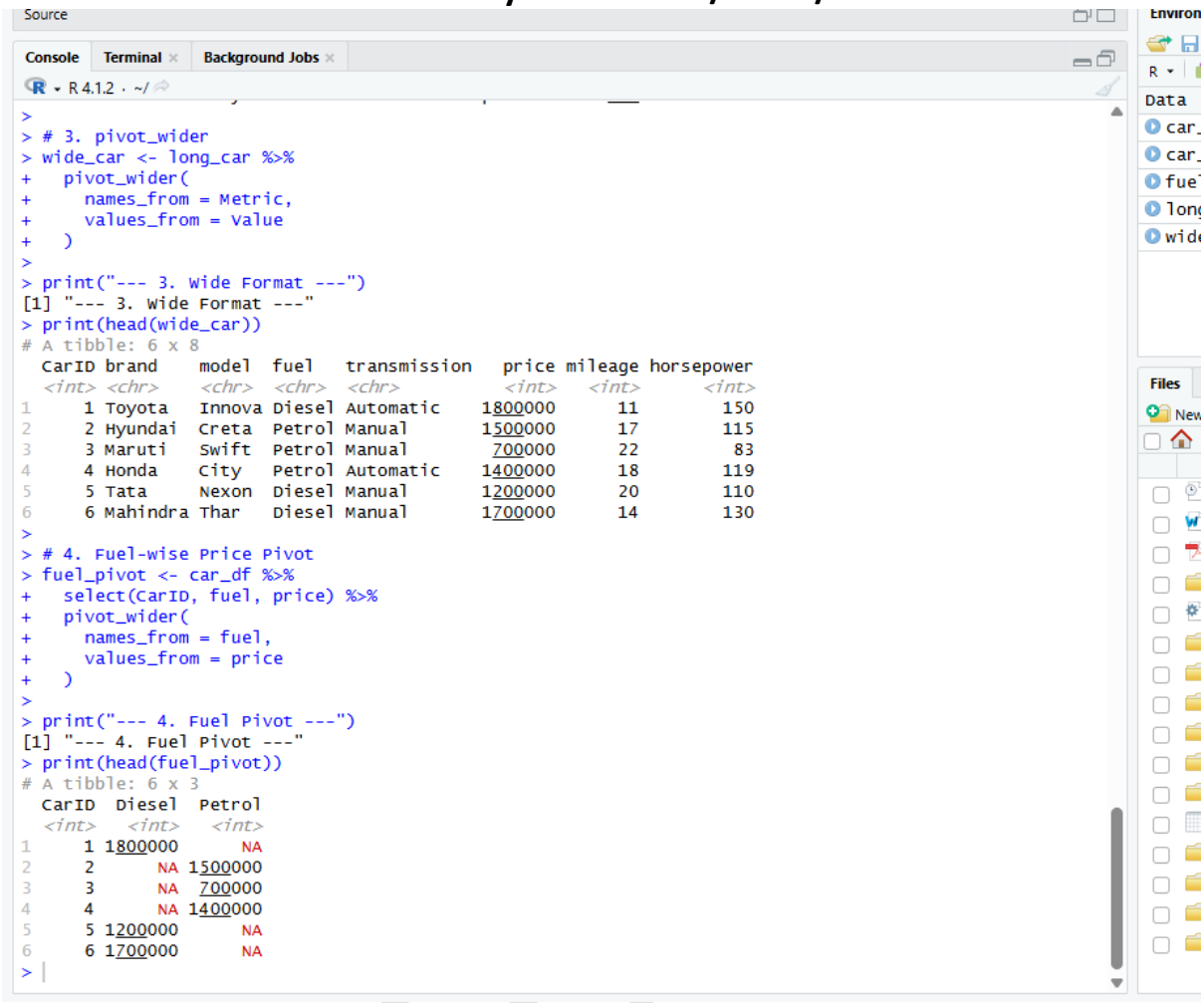
SHETH L.U.J.AND SIR M.V. COLLEGE
PRACTICAL NO.11
Data Analysis with SAS / SPSS /R



```
Console  Terminal  Background Jobs
R 4.1.2 · ~/
 4      2 Hyundai Creta  Petrol Manual       price      1500000
 5      2 Hyundai Creta  Petrol Manual       mileage         17
 6      2 Hyundai Creta  Petrol Manual       horsepower     115
 7      3 Maruti  Swift  Petrol Manual       price       700000
 8      3 Maruti  Swift  Petrol Manual       mileage         22
 9      3 Maruti  Swift  Petrol Manual       horsepower      83
10      4 Honda   City   Petrol Automatic    price      1400000
>
> # 3. pivot_wider
> wide_car <- long_car %>%
+   pivot_wider(
+     names_from = Metric,
+     values_from = Value
+   )
>
> print("--- 3. Wide Format ---")
[1] "--- 3. Wide Format ---"
> print(head(wide_car))
# A tibble: 6 x 8
  CarID brand    model  fuel   transmission   price mileage horsepower
  <int> <chr>    <chr>  <chr>  <chr>          <int>   <int>      <int>
1     1 Toyota   Innova Diesel Automatic    1800000      11        150
2     2 Hyundai  Creta  Petrol Manual       1500000      17        115
3     3 Maruti   Swift  Petrol Manual        700000      22         83
4     4 Honda    City   Petrol Automatic    1400000      18        119
5     5 Tata     Nexon  Diesel Manual       1200000      20        110
6     6 Mahindra Thar   Diesel Manual       1700000      14        130
>
> # 4. Fuel-wise Price Pivot
> fuel_pivot <- car_df %>%
+   select(CarID, fuel, price) %>%
+   pivot_wider(
+     names_from = fuel,
+     values_from = price
+   )
>
> print("--- 4. Fuel Pivot ---")
[1] "--- 4. Fuel Pivot ---"
> print(head(fuel_pivot))
# A tibble: 6 x 3
  CarID  Diesel  Petrol
  <int>   <int>   <int>
1     1 1800000      NA
```


VIBHUTI GAWADE
S079

SHETH L.U.J.AND SIR M.V. COLLEGE
PRACTICAL NO.11
Data Analysis with SAS / SPSS /R



```
> 
> # 3. pivot_wider
> wide_car <- long_car %>%
+   pivot_wider(
+     names_from = Metric,
+     values_from = Value
+   )
> 
> print("--- 3. Wide Format ---")
[1] "--- 3. Wide Format ---"
> print(head(wide_car))
# A tibble: 6 x 8
  CarID brand    model  fuel   transmission   price mileage horsepower
  <int> <chr>    <chr>  <chr>  <chr>          <int>   <int>      <int>
1     1 Toyota   Innova Diesel Automatic    1800000      11        150
2     2 Hyundai  Creta  Petrol Manual       1500000      17        115
3     3 Maruti   Swift  Petrol Manual        700000      22         83
4     4 Honda    City   Petrol Automatic    1400000      18        119
5     5 Tata     Nexon  Diesel Manual       1200000      20        110
6     6 Mahindra Thar   Diesel Manual       1700000      14        130
> 
> # 4. Fuel-wise Price Pivot
> fuel_pivot <- car_df %>%
+   select(CarID, fuel, price) %>%
+   pivot_wider(
+     names_from = fuel,
+     values_from = price
+   )
> 
> print("--- 4. Fuel Pivot ---")
[1] "--- 4. Fuel Pivot ---"
> print(head(fuel_pivot))
# A tibble: 6 x 3
  CarID  Diesel  Petrol
  <int>   <int>   <int>
1     1 1800000      NA
2     2      NA 1500000
3     3      NA  700000
4     4      NA 1400000
5     5 1200000      NA
6     6 1700000      NA
> 
```

VIBHUTI GAWADE
S079