ISLR-R21._1

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2023-08-23

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Preface

This is a Quarto book.

To learn more about Quarto books visit https://quarto.org/docs/books.

```
1 + 1
```

```
[1] 2
```

1 Introduction

This is a book created from markdown and executable code.

See Knuth (1984) for additional discussion of literate programming.

```
1 + 1
```

```
[1] 2
```

2 Summary

In summary, this book has no content whatsoever.

```
1 + 1
```

```
[1] 2
```

References

Knuth, Donald E. 1984. “Literate Programming.” *Comput. J.* 27 (2): 97–111. https://doi.org/10.1093/comjnl/27.2.97.

3 What Is Statistical Learning?

Question: How to improve sales of our product?

We have a data set:

```
advertising = read_csv("./data/Advertising.csv") %>% as_tibble %>% select(-1)
```

```
New names:
Rows: 200 Columns: 5
-- Column specification
-------------------------------------------------------- Delimiter: "," dbl
(5): ...1, TV, radio, newspaper, sales
i Use `spec()` to retrieve the full column specification for this data. i
Specify the column types or set `show_col_types = FALSE` to quiet this message.
* `` -> `...1`
```

```
advertising
```

```
# A tibble: 200 x 4
      TV radio newspaper sales
   <dbl> <dbl>     <dbl> <dbl>
 1 230.   37.8      69.2  22.1
 2  44.5  39.3      45.1  10.4
 3  17.2  45.9      69.3   9.3
 4 152.   41.3      58.5  18.5
 5 181.   10.8      58.4  12.9
 6   8.7  48.9      75     7.2
 7  57.5  32.8      23.5  11.8
 8 120.   19.6      11.6  13.2
 9   8.6   2.1       1     4.8
10 200.    2.6      21.2  10.6
# i 190 more rows
```

$n = 200$, independent variables (predictors) are `TV`, `radio`, and `newspaper` advertising spendings in thousands of dollars. We want to explore their relationship with `sales`; quantity of product sold for each advertising mixture.