

Week 1 Tasks - Data Science Programming

Pham Minh Hieu

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Week 1 Tasks

This R Markdown document contains solutions to all Week 1 tasks using the `student_scores.csv` dataset.

Task 1 – Hello World

Write a program that prints: “Welcome to Data Science Programming!”

```
# Task 1: Hello World
# Write your code here
"Welcome to Data Science Programming!"
```

```
## [1] "Welcome to Data Science Programming!"
```

Task 2 – Simple Math

Calculate and print the result of: $-15 + 23 - 120 / 6$
 $- 5^3$ (5 to the power of 3)

```
# Task 2: Simple Math
# Write your code here
15+23
```

```
## [1] 38
```

```
120/6
```

```
## [1] 20
```

```
5^3
```

```
## [1] 125
```

Task 3 – Variables and Vectors

Create a vector of 5 numbers: `c(10, 20, 30, 40, 50)`.

Print the vector and the sum of its elements.

```
# Task 3: Variables and Vectors  
# Write your code here  
a <- c(10, 20, 30, 40, 50)  
sum(a)
```

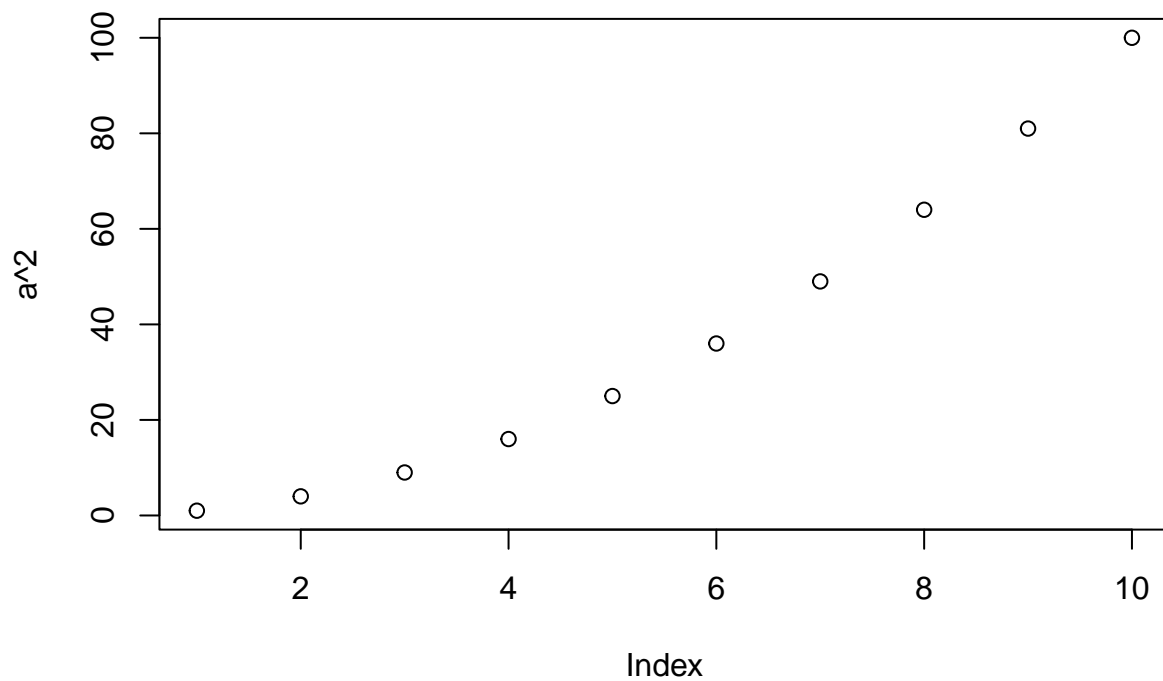
```
## [1] 150
```

Task 4 – Plot Squares

Create a vector of numbers from 1 to 10.

Plot the numbers against their squares using the `plot()` function.

```
# Task 4: Plot Squares  
# Write your code here  
a <- c(1:10)  
plot(a^2)
```



Task 5 – Load Dataset

Load `student_scores.csv` into your program.

Display the first 5 rows.

```
# Task 5: Load Dataset
# Write your code here
student_scores <- read.csv(file = "examples/student_scores.csv")
student_scores[c(1:5),c(1,2)]
```

```
##      Name Score
## 1   Alice    85
## 2    Bob    72
## 3 Charlie    90
## 4   David    65
## 5    Emma    78
```

Task 6 – Summary Statistics

Print the average (mean) of the `Score` column.

Print the minimum and maximum scores.

```
# Task 6: Summary Statistics
# Write your code here
mean(student_scores$Score)
```

```
## [1] 78
```

```
min(student_scores$Score)
```

```
## [1] 55
```

```
max(student_scores$Score)
```

```
## [1] 92
```

Task 7 – Filtering Data

Find and print the names of students who scored greater than 80.

```
# Task 7: Filtering Data
# Write your code here
library(dplyr)

excel_students <- student_scores |> filter(Score > 80)
excel_students
```

```
##      Name Score
## 1   Alice    85
## 2 Charlie    90
## 3   Grace    92
## 4 Hannah    81
## 5   Julia    88
```

Task 8 – Sorting Data

Sort the dataset by Score in descending order.

Display the top 3 students.

```
# Task 8: Sorting Data
# Write your code here
sorted_score <- student_scores |> arrange(desc(Score))
sorted_score[c(0:3),]
```

```
##      Name Score
## 1   Grace    92
## 2 Charlie    90
## 3   Julia    88
```

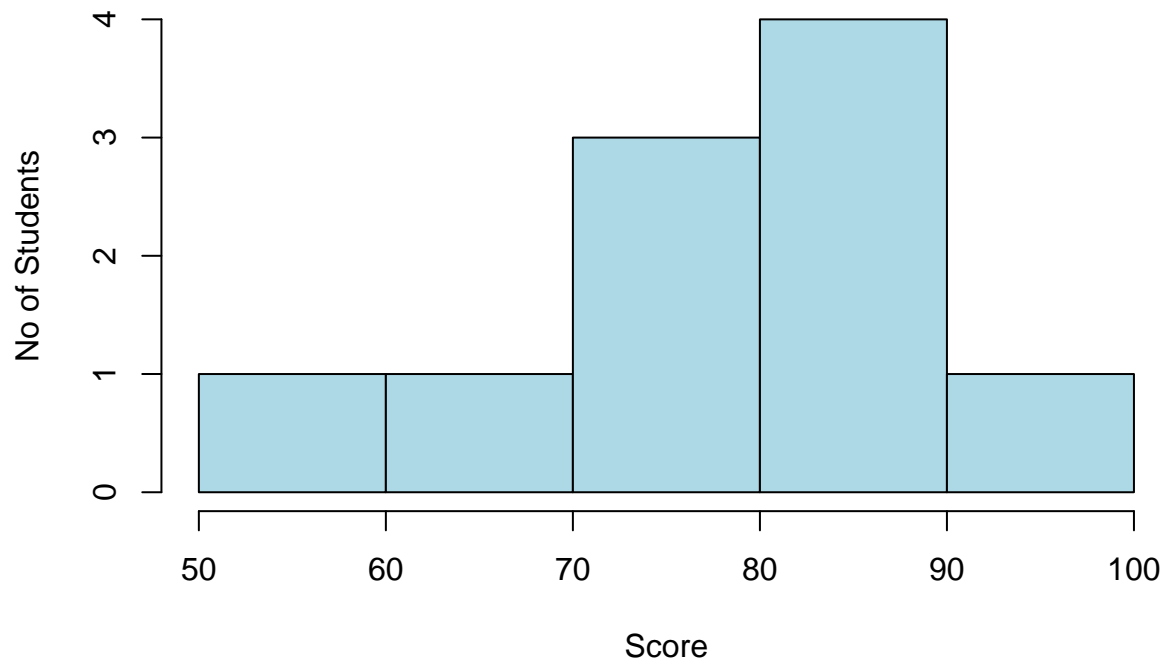
Task 9 – Visualization

Create a histogram of scores.

Add appropriate title and axis labels.

```
# Task 9: Visualization
# Write your code here
hist(
  student_scores$Score,
  main = "All Student Scores",
  xlab = "Score",
  ylab = "No of Students",
  col = "lightblue",
  border = "black"
)
```

All Student Scores



Submission Notes

- Ensure all code chunks run without errors
 - Include appropriate comments in your code
 - Make sure plots are properly displayed
 - Knit this document to HTML/PDF before submission
 - Save and submit this file as `Week1_Tasks.Rmd`
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End of Week 1 Tasks