COMI 1510 Java Programming Programming Assignment 1

# Specifications

Clarifications: Include in your submission everything you’ve clarified with the professor.

Assumptions: Include in your submission anything you assumed but didn’t clarify. Include a justification.

# Testing

## Test Case 1

### Purpose

Test the program on typical, realistic input values.

### Input

Weight: 45

Hours: 24

### Expected output

Your weight on Mercury is 16.989795918367346 kg, which is 37.755102040816325 percent of your weight on Earth.

Your weight on Venus is 40.86734693877551 kg, which is 90.81632653061224 percent of your weight on Earth.

Your weight on Mars is 16.989795918367346 kg, which is 37.755102040816325 percent of your weight on Earth.

In 24.0 hours, Mercury will travel 4095360.0 km.

In 24.0 hours, Venus will travel 3024000.0 km.

In 24.0 hours, Earth will travel 2574720.0 km.

In 24.0 hours, Mars will travel 2082240.0000000002 km.

### Your program running

Paste your program executing in the testing document here. Show a complete execution: both inputs and output.

Please enter your weight in kg on Earth: 45

Please enter the duration, in hours, of the trip: 24

Your weight on Mercury is 16.989795918367346 kg, which is

37.755102040816325 percent of your weight on Earth.

Your weight on Venus is 40.867346938775505 kg, which is

90.81632653061224 percent of your weight on Earth.

Your weight on Mars is 16.989795918367346 kg, which is

37.755102040816325 percent of your weight on Earth.

In 24.0 hours, Mercury will travel 4095360.0 km.

In 24.0 hours, Venus will travel 3024000.0 km.

In 24.0 hours, Earth will travel 2574720.0 km.

In 24.0 hours, Mars will travel 2082240.0000000005 km.

### Conclusions

Describe whether your program’s output matches expectations.

Everything matched exactly, except for the weight section for Venus. It is off by a very small amount.

I get a warning message that there is a resource leak.

Warning Message: Resource leak: ‘keyboard’ is never closed

I did some research and found that using the Scanner class’s close method would make the warning message go away. I uncommented the usage of this method in my program. Since this could close the file when I do not want to. Also, it is a method we have not learned in chapter 1 or 2.

## Test Case 2

### Purpose

Test the program on minimum input values.

### Input

Weight: 0

Hours: 0

### Expected output

Your weight on Mercury is 0.0 kg, which is 37.755102040816325 percent of your weight on Earth.

Your weight on Venus is 0.0 kg, which is 90.81632653061224 percent of your weight on Earth.

Your weight on Mars is 0.0 kg, which is 37.755102040816325 percent of your weight on Earth.

In 0.0 hours, Mercury will travel 0.0 km.

In 0.0 hours, Venus will travel 0.0 km.

In 0.0 hours, Earth will travel 0.0 km.

In 0.0 hours, Mars will travel 0.0 km.

### Your program running

Paste your program executing in the testing document here. Show a complete execution: both inputs and output.

Please enter your weight in kg on Earth: 0

Please enter the duration, in hours, of the trip: 0

Your weight on Mercury is 0.0 kg, which is

37.755102040816325 percent of your weight on Earth.

Your weight on Venus is 0.0 kg, which is

90.81632653061224 percent of your weight on Earth.

Your weight on Mars is 0.0 kg, which is

37.755102040816325 percent of your weight on Earth.

In 0.0 hours, Mercury will travel 0.0 km.

In 0.0 hours, Venus will travel 0.0 km.

In 0.0 hours, Earth will travel 0.0 km.

In 0.0 hours, Mars will travel 0.0 km.

### Conclusions

Describe whether your program’s output matches expectations.

The output matches the expected output.

I get a warning message that there is a resource leak.

Warning Message: Resource leak: ‘keyboard’ is never closed

I did some research and found that using the Scanner class’s close method would make the warning message go away. I uncommented the usage of this method in my program. Since this could close the file when I do not want to. Also, it is a method we have not learned in chapter 1 or 2.

## Test Case 3

### Purpose

Test the program on the value 1 for each input.

### Input

Weight: 1

Hours: 1

### Expected output

Your weight on Mercury is 0.37755102040816324 kg, which is 37.755102040816325 percent of your weight on Earth.

Your weight on Venus is 0.9081632653061225 kg, which is 90.81632653061224 percent of your weight on Earth.

Your weight on Mars is 0.37755102040816324 kg, which is 37.755102040816325 percent of your weight on Earth.

In 1.0 hours, Mercury will travel 170640.0 km.

In 1.0 hours, Venus will travel 126000.0 km.

In 1.0 hours, Earth will travel 107280.0 km.

In 1.0 hours, Mars will travel 86760.0 km.

### Your program running

Paste your program executing in the testing document here. Show a complete execution: both inputs and output.

Please enter your weight in kg on Earth: 1

Please enter the duration, in hours, of the trip: 1

Your weight on Mercury is 0.37755102040816324 kg, which is

37.755102040816325 percent of your weight on Earth.

Your weight on Venus is 0.9081632653061223 kg, which is

90.81632653061224 percent of your weight on Earth.

Your weight on Mars is 0.37755102040816324 kg, which is

37.755102040816325 percent of your weight on Earth.

In 1.0 hours, Mercury will travel 170640.0 km.

In 1.0 hours, Venus will travel 126000.0 km.

In 1.0 hours, Earth will travel 107280.0 km.

In 1.0 hours, Mars will travel 86760.0 km.

### Conclusions

Describe whether your program’s output matches expectations.

The output matches the expected output, except for the weight section for Venus by a very small amount.

I get a warning message that there is a resource leak.

Warning Message: Resource leak: ‘keyboard’ is never closed

I did some research and found that using the Scanner class’s close method would make the warning message go away. I uncommented the usage of this method in my program. Since this could close the file when I do not want to. Also, it is a method we have not learned in chapter 1 or 2.

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