1811ICT/2807ICT/7001ICT Programming Principles Workshop 3

School of Information and Communication Technology

Griffith University

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| *Goals* | In this workshop we create interactive scripts. |
| *When* | Week 4 |

# Before your workshop class:

* Read this whole document.
* Review the lecture notes sections 1 to 11.

# Workshop activities

At any stage, when you are stuck, *ask your instructor*!

## Problem 1

*Problem:* The grades at a university are awarded based on the marks awarded for the course out of 100. Marks of 85 or above receive the grade of 7. Marks less than 85 but that are 75 or above receive the grade of 6. Marks less than 75 but that are 65 or above receive the grade of 5. Marks less than 65 but that are 50 or above receive the grade of 4. Anything less than 50 gets the grade of F. Write a program that asks the user to input the marks and prints the grade awarded.

Example:

How many marks? 85

Grade awarded: 7

*Testing:* Test your program by checking the output for the following two scenarios:

* How many marks? 79.5
* How many marks? 65

## Problem 2

*Problem:* A shipping company charges its customer based on the weight of goods and the distance of shipping. A discount is given based on the distance of shipping as follows:

distance < 250km, no discount

250km ≤ distance < 500km, 10% discount

500km ≤ distance < 1000km, 15% discount

1000km ≤ distance < 2000km, 20% discount

2000km ≤ distance < 3000km, 35% discount

3000km ≤ distance, 50% discount

The shipping cost is calculated based on the following equation:

cost = basePrice \* weight \* distance \* (1 - discount).

Write a program that takes as inputs the base price, weight, and distance, and prints the shipping cost to be charged to the customer.

Example:

How much is the base price? 0.01

What is the weight? 200

What is the distance? 1000

The shipping cost is 1600.0

*Testing:* Test your program by checking the output for the following two scenarios:

* Base price: 0.1; Weight: 540; Distance: 2300
* Base price: 0.35; Weight: 350.5; Distance: 734.5

## Problem 3

*Problem:* Write a program that takes as input 3 integers and outputs them in descending order.

Examples:

Integer 1? 3

Integer 2? 10

Integer 3? 2

Sorted: 10 3 2

*Testing:* Test your program by checking the output for the following two scenarios:

* Integer 1: 35; Integer 2: 21: Integer 3: 28
* Integer 1: 25; Integer 2: 33: Integer 3: 43

## Problem 4

*Problem:* A car dealer earns a base wage of $36.25 per hour up to their normal work week of 37 hours. Only whole hours are counted. If he works more hours than that (overtime) he gets paid at 1.5 times his normal rate for the overtime. If he sells more than 5 cars in a week, he gets a bonus of $200 per car from the 6th car sold. Write a program that takes as input the number of hours worked and the total number of cars sold for the week, and outputs the car dealer’s total salary for the week.

Examples:

How many hours were worked? 41

Total number of cars sold for the week? 10

The salary is 2558.75

How many hours were worked? 36

Total number of cars sold for the week? 3

The salary is 1305.0

*Testing:* Test your program by checking the output for the following two scenarios:

* Hours worked: 25; Number of cars sold: 10
* Hours worked: 40; Number of cars sold: 5



**Have you checked whether valid values are provided?**