

CSE1301 Computer Programming **Exercise Sheet 1**

Exercise 1

- a. Why is writing an algorithm important?
- b. Write an algorithm to calculate your average speed travelling between home and university for a single trip.
- c. Expand the algorithm of part (b) to compare your average speed with that of another student.

Exercise 2

- a. What is the difference between a value and a variable? Give some examples.
- b. Define selection and repetition? Give some examples of each.

Exercise 3

- a. Write an algorithm, *daysInMonth*, that determines how many days there are in a given month this year.
- b. Write an algorithm that determines whether a given year is a leap year.
A year is a leap year if
 - It is a multiple of 4 but not a multiple of 100OR
 - It is a multiple of 400.So, for example, 1996 and 2000 are leap years, but 1900, 2002 and 2100 are not.
- c. Rewrite algorithm *daysInMonth* so that it works for any month in any year.

Exercise 4

Write an algorithm for organising a party.

Advanced Exercise

Write an algorithm to print out every possible unique game of lotto containing the numbers 7, 13 and 42. There are 6 numbers in a game drawn from a possible 42 numbers. (Note- Lotto numbers are not sequence dependent.)