**COMP 1917 Computing 1 Session 2, 2014**

**Tutorial - Week 4**

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**Tutorial Presentation**

Describe the ASCII coding system. (What does ASCII stand for?) Draw a schematic "map" of the ASCII Table on the board, showing (in both decimal and hexadecimal notation) where the following sets of characters lie:

* non-printable characters
* digits '0' to '9'
* uppercase letters 'A' to 'Z'
* lowercase letters 'a' to 'z'
* punctuation

1. Write your own versions of these character functions (from the library ctype.h):

int isdigit( int ch )

int islower( int ch )

int toupper( int ch )

(Note: you should be able to write these functions without knowing any actual ASCII codes.)

1. Convert from Binary to Decimal:

10010101

1. Convert from Decimal to Binary:

186

1. Convert from Hexadecimal to Binary:

B7A316

1. Convert from Binary to Hexadecimal:

1100111101010010

1. Write a C program which scans a binary number one character at a time, computes the value of that number and prints the result in decimal format.
2. Now modify your program so that it prompts the user to enter a base (between 2 and 10) followed by a number expressed in that base, computes the value of that number and prints the result in decimal format, e.g.

Enter base: 7

Enter number: 5342

Value = 1892

How would you modify your program to handle bases larger than 10?

1. Any questions about Assignment 1.
2. (if time permits) Write a C program which reads an integer in decimal format, from standard input, and then prints the number in binary format, one character at a time, to standard output.

**Presentation Topic for Week 5**

Explain Type Conversion in C. In what situations does type conversion occur? Referring to the Course Notes, Chapter 7, slide 31, briefly explain what output is produced by this code, and why.