CPS1011 - Lab 2

Once you finish this tutorial, remember to commit to Github any code you write and to add Github username nevillegrech to your github repo. Your performance in the tutorials will be a factor in your exam scoring.

Exercise 1

Write a program that accepts an integer as input and prints out the corresponding character from the system's current character set.

Exercise 2

```
int main() {
  float weight, value;
  printf("Enter your weight in pounds: \n");
  scanf("%f", &weight);
  // Platinum is $1770 / pound
  // 14.5 troy ounces in 1 pound
  value = 1770.0 * weight * 14.5;
  printf ("Your weight in platinum costs $%.2f. \n", value);
}
```

Compile, complete and execute this listing with a 165 pounds input.

1. Note down the result.
2. Change the type of value to double. How does the result change?
3. Modify the program to round-off the result to 4 decimal points.
4. Change the type of value to int. What is the result displayed for %f and %d? Explain the reason why.
5. What happens if the integer corresponds to an index for a non-printable character?
6. Modify the program further to display the corresponding index as octal and hex formatted integers.

Exercise 3

Write a program that asks for three words and outputs each in reverse order.

Exercise 4

Write a program that asks for:

1. Employee name, surname, age and (monthly) pay-cheque salary;
2. After each 5 (assumed successful) entries, the program displays the output in column format, making sure that:
    a. All columns are properly aligned;
    b. Truncating names and surnames longer than 10 characters;
    c. Adding an initial column to display an automatically generated counter starting at 1 – you may wish to try to keep your source code compact by displaying and incrementing the counter within the same expression;
    d. Adding a final column with the computed yearly total for a 13-month pay-cheque salary;
    e. Giving the user the choice for the precision for the salary columns.
3. The program terminates after 10 successful entries;
4. On termination, the average salary for all entries should be calculated and displayed.

Exercise 5

Write a program that converts a sequence of 10 user-supplied number of days into 'weeks & days'. Make use of symbolic constants to render your program readable.

Exercise 6

Write a program that repeatedly converts dollars to euros for a sequence of 10 inputs. Make use of symbolic constants to render your program readable.

Exercise 7

Write a program that computes n! (factorial), where n is supplied by the end user.

Exercise 8

Write a program that computes the Reimann zeta function, trying out different approximations of infinity:

$$\zeta(s) = \sum_{n=1}^{\infty} n^{-s} = \frac{1}{1^s} + \frac{1}{2^s} + \frac{1}{3^s} + \cdots$$

You may want to make use of functions declared in math.h