Basic Control Flow Statements

“if” Statements

“if” statements are the most basic of control statements. They allow you to specify a statement that will evaluate to TRUE and therefore follow a block of code or ELSE if not TRUE follow optionally another block of code. Additional tests for true can be specified using ELIF for else if. The control works IF, ELIF and ELSE are always ended with a : (colon).

In python the integer 1 is a shorthand for TRUE and the integer 0 is shorthand for false. There we can do the following.

```
x = 1


If x:

        print “true”

else:

        print “false”
```

You use a double equals sign as the comparison operator.

```
if x == 1:

        print “x = 1”

elif x == 2:

        print “x = 2”


else:

        print “x is neither 1 or 2”
```

“for” Loops

For loops allow you to loop through an object that can be iterated over. Things includes items such as lists, tuples and dictionaries as well as strings. You can use the RANGE function to provide an iterable object containing numbers.

Create a number based range as such

```
numbers = range(1,2000,2)
```

A range from 1 to 2000 iterating by 2 on each pass.

Each loop will assign the next item in the sequence to the variable name defined immediately after “for” statement from the iterable object named after the “in”

```
a = ["Monday","Tuesday","Wednesday","Thursday","Friday"]

for day in a:

    print day
```

You can nest “if” statements and “for” statements to extend the functionality.

```
a = ["Monday","Tuesday","Wednesday","Thursday","Friday"]

for day in a:

    if day == “Monday”:

        print day + “, first day of the working week”

    elif day == “Friday”:

        print day + “, last day of the working week”

    else:

        print day
```

Homework

Create a dictionary with the names of the months of the years as keys and the number of days in the month as the value.

Loop through the dictionary printing the month name and how many days it contains. On months that contain 28 or 29 days append the phrase “short month” to the output. For months that contain 31 days append the phrase “long month” to the output.