# Lab 3

**Memory and Miller’s Magic 7**

**Exercise – Memory and Miller’s Magic Number 7**

Open a MS Word file. Name it **‘*Lab3-studentNumber.docx’****.*

Record your answers to this exercise in this file.

**Save your lab work periodically to a USB, or to your own account.**

# Memory Experiment

Do the memory experiment exercises on this page with a partner <http://hci.ilikecake.ie/design/memory.htm>

The experiments are

* Digit Span
* Recall
* Stroop

What conclusions can you make about human memory and good interface design?

1. **Investigating Miller's Magic Number (7 plus or minus 2)**

The two main characteristics of short-term memory are (1) its limited capacity to hold information and (2), that it can only hold information for a short time. The number of items remembered at any one time is about seven. This phenomenon was established in experiments by Miller in 1956 and is known as ‘the magic number 7 ± 2’.

In this exercise you will investigate Miller’s proposal that short-term memory capacity is close to seven plus or minus two.

Do this lab exercise with a partner.

(Exercise based on Smith 1997, pp.74-75 Q2.3)

**NB:** Both you and your partner must do this Lab exercise in turn.

***Materials***

Download the file named***‘Lab3-Names.pdf’***from WebCourses. The pdf displays a set of randomly scattered names.

***Procedure***

Show the list of names to your partner for 20 seconds. Close the pdf after 20 seconds. Ask your partner to write down as many names as he or she can remember. Count the number of names and record the total.

Now ask four other students in the class for the number of names they managed to recall. Record these totals. Add the number of names recalled by you and your partner and the four others together, and calculate the average.

***Result***

Is the average score more or less than 7? By how much is it more or less than 7? If the score is more than 9 (the upper bound of 7 plus or minus 2), why do you think this is so? How might long-term memory be affecting the results?

# References

Miller, George, A. (1956), ‘The magic number seven, plus or minus two: some limits on our capacity for processing information’, Psychological Review,  
63, 81-97.

Smith Andy, (1997), *Human Computer Factors,* London: McGraw-Hill.

**Please ensure that you show your completed lab work to the Lecturer or Lab Supervisor before you leave the Lab today.**