INFO20003 Tutorial – Week 12

(Tutorial: NoSQL and Revision)

Objectives:

This tutorial will cover:

I.	Understand the concepts of NoSQL databases – 15 mins
II.	Choosing appropriate NoSQL database types for scenarios – 10 mins
III.	CAP theorem with respect to NoSQL databases – 15 mins
IV.	Revision

Key Concepts:

- What are NoSQL databases?
- Types of NoSQL database
    - Graph databases
    - Key-value stores
    - Column-family stores
    - Document stores

Exercise:

Choosing a NoSQL database

Libraries store information about their collections in their catalogue.

Match each of the following statements to the type of NoSQL database that would be best for storing that library's data. Select from the four types of NoSQL database discussed previously.

a. In one library, items are catalogued by author, title and publisher, as well as any number of other fields chosen by the cataloguer, such as physical description, subject codes and notes.
b. In another library, each catalogue record is stored in the MARC format (Figure 1), a coded text format that contains all the catalogue information for a particular item.
c. A public library wishes to store cover photos of all its items, which might be in JPEG, PNG or PDF format, or stored as a URL.
d. A university library wishes to keep track of which published academic papers reference each other in order to help researchers measure their metrics.

```
LEADER 00000nam  22000001  4500
008    730220s1955    ilu      b     00000 eng
019    55007351
050 0  QA276.5|b.R3
082    311.22
110 20 Rand Corporation.
245 12 A million random digits|bwith 100,000 normal deviates.
260 0  Glencoe, Ill.,|bFree Press|c[1955]
300    xxv, 400, 200 p.|c28 cm.
504    Bibliography: p. xxiv-xxv.
650  0 Numbers, Random.
984    |cMS T 519 R152
```

Figure 1: An example of a MARC record. MARC is a very old format that predates NoSQL, JSON and even XML by several decades, yet it remains the industry standard in library data systems.

Key Concepts:
- Advantages of NoSQL
- The CAP theorem

Revision:

Your tutor will offer some revision activities.