題號： 88
國立臺灣大學 103 學年度碩士班招生考試試題
科目：計算機概論與程式設計
節次： 1
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1. (10%) Please list and explain the steps (or phases) of System Development Life Cycle (SDLC).

2. (5%) Please briefly explain the components of machine cycle.

3. (15%) Please briefly answer the following questions about databases and information system
   (1) What is the advantage of a relational database system over a file management program?
   (2) Explain the difference between a knowledge management system and an expert system.

4. (20%) Please describe the logical steps and plot the flow chart to solve the following question: the input valuable is an integer n, the outputs is all integers between 1 and n satisfying the conditions: (a) n^2 is divisible by 3 **AND** (b) n is not divisible by 5.

5. (15%) Explain the characteristics of process- and object-oriented programming. Describe the advantages and disadvantages of them.

6. (15%) Sorting is the widely-used concept as data analysis. Please give 3 sorting methods and explain the logics and characteristics of them.

7. (10%) What is the database system? Which components should be included in a database system? Please describe the functionality of them as well.

8. (10%) Below is a paragraph of C code

```
Int Fib (int n)
{
If (n ==0) return (1);
If (n ==1) return (1);
If (n > 1) return (Fib(n-1) + Fib(n-2);)
}
```

Please answer what is the value of Fib(5)? In this process, how many times that function Fib() will be called?

試題隨卷繳回