國立陽明交通大學109學年度第2學期

博士班資格考筆試考試試題

土木工程學系 資訊組 科目：計算機程式與工程應用選考學生數：1 考試時間: 180 min

All of the problems are on-line programming test. Please use Python or C family (C, C++, C＃) languages to code the programs. ***You can refer to codes in web, but do not copy codes directly from web***. Please save your codes in USB storage and turn-in.

1. Code a program to generate a valid password satisfying the following conditions:
2. Enter a password and check whether it is a valid password.
3. Primary conditions for password validation:

Contain 6 to 8 characters.

The alphabets must be between [a-z]

At least one alphabet should be of Upper Case [A-Z]

At least one digit between [0-9] but cannot be the first digit.

At least one character from [ \_ or @ or $ ].

1. Code a program to split all of words in a given text (txt) file. Please omit the punctuations, specified symbols, and blanks. Count the number of each word appears in the text and select 5 keywords of this text.
2. Two all-ones matrices ***A*** and ***B*** are 20\*30 and 30\*40 dimensions, respectively. Write a **multi-threaded** program to perform ***C*** = ***A*** × ***B***, where ***C*** is a 20\*40 matrix and × means cross multiplication of two matrices

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