Program Design First Mid-Test - 2018

string

Pos

Closing: Finish the sentence.

(30%)

- a) Lists and tables of values can be stored in orrest or
- b) The elements of an array are related by the fact that they have the same a some and symbol.

c) The number used to refer to a particular element of an

- d) A(n) wandshould be used to declare the size of an
- array, because it makes the program more scalable.

 e) The process of placing the elements of an array in
- The process of placing the elements of an array in order is called <u>ferture</u> the array.
- The process of determining if an array contains a particular key value is called searchin the array.
- g) An array that uses two subscripts is referred to as a(n)
- h) A pointer is a variable that contains as its value the
- j) The only integer that can be assigned directly to a pointer is ______.
- k) A function that calls itself either directly or indirectly (i.e., through another function) is a(n) narrive function.
- A recursive function typically provides a means for the recursion to terminate by testing for a(n) bac case.
- m) It's possible to have various functions with the same name that operate on different types or numbers of arguments. This is called function over lengths.
- n) The _____enables access to a global variable with the same name as a variable in the current scope.
- o) The qualifier <u>conct</u> is used to declare read-only variables.
- p) A function templatenables a single function to be defined to perform a task on many different data types.
- q) The operator can be used to determine the size of an array in bytes.
- r) An ____ algorithm will put the elements of an array in an specified order.
- s) A house is to a blueprint as a(n) offert is to a class.
- t) Every class definition contains the keyword olass followed immediately by the class's name.
- When each object of a class maintains its own copy of an attribute, the variable that represents the attribute is also known as a(n) ______.
- v) The keyword public is a(n) access. specifier
- w) Return type __void indicates that a function will perform a task but will not return any information when it completes its task.
- x) Function in the from the string library reads characters until a newline character is encountered, then copies those characters into the specified string.
- y) When a member function is defined outside the class definition, the function header must include the class name and the ______, followed by the function name.
- z) The source-code file and any other files that use a class can include the class's header file via an ____ () preprocessor directive.
- II. Define a class Date with proper specifier and three attributes: year, month, and day and two member functions setdate and printdate. (just put the class definition, no implementation needed) (10%)

- III. A function char* substr (char s[], char t[], size 1 pos, size 1 len) generate substring 1 from s) starting from pos and with length len (or until the end of the string s, whichever comes first).
 (20 %)
 - a) Please implement substr function using character array version.
 - Please revise your substr function by using just pointer notations, including the arguments and the statements.
- IV. In an arctic circle city, Rovaniemi, Finland, there is a Santa Claus village. In the village, there is a directory signs which shows the distances from the village to the major cities in the world. (a, b, c each 5%: d:10%)



0

Parts of the signs are:

Destination	Distance	
Taipei	7804	
Roma	2985	
New York	6204	

- a) Please declare a pointer array destinations to store the names of the cities and an integer array distances to store their distances. Please use at least two ways to initialize the destinations array.
- b) Please write a loop to print out the names of the cities and the distances to these cities from the village.
- c) Please define a function maxdist that finds the maximum distance from the village to the cities. Please print out the name of the city and the distance.
- d) Please use the pointer-based notation (using pointers in the declaration of array argument and the access of array elements) to redo the function maxdist in c).
- V. Write a recursive function power (base, exponent) that, when invoked, returns base exponent. For example, power (3, 4) = 3 * 3 * 3 * 3. Assume that exponent is an integer greater than or equal to 1. Hint: The recursion step would use the relationship

base exponent = base \cdot base exponent - 1

the base condition occurs when exponent is equal to 1, because $base^{i} = base$ $3 = \frac{3}{2} \cdot \frac{3}{2}$

base x = base ;

NOTE: The new exercise is 7.12, simulation of the tortoise and the hare. Due in 1/May/2018.

28	"親鸞的妻子,其知適信很問題收到 我的气。他們這裡屬然有電驗,所以 我可以發送軟件終我的親人。我與關 課理了人住手編,你和兩子們還好 吧?這個地方是非常漂亮,一切都很 好。但是,我一個人在這稅很沒 質。我沒的希望你也將來看看! 我嗣 才和經齡人員聯繫了一下,他們會安 排你明天過來!我但不及待地想見到 你! 發信的老公。	温完子上	有一個人對阿里山境時,住進騰福 後,更外地發表房間裡還有電腦可以 上機,於是他站地的妻子發達一對電 概。但是他不小心能入了錯誤的電子 虧有担此,結果他的軟件裝給了一位 期對於丈夫的身份上提回的實際。
批	空田。。 ~ 福田田縣	- 密縣亞	型于 海上上
83	産品の製造型と行いる	世色工芸	がは 世。 原 画
25	身,與人國是預許天守	記述を	丹井龍の子と
NO.	子也是其也,行人即的	要品書と	日本 日
ctia v.t.4	「門が手で吹客離れ他」	E ME ME OF	古田子の古典語
7	1. 推翻大學出。 在海线	国を開発	おさらさ場合
3.6	田田野谷本人也で出	がいれる	计四名形态
看完電影,兒子也倒下了	型名包括版由第1片	這位敦煌以為是授及用場的暗息,讀 完達計電朝,地質了過去、實別的報子街道房間,登別他母親在地板 子街道房間,登別他母親在地板 上,指點景幕上而寫著	節書〉是臨地
w	州省親南亮值东下及	温州部	国サーナで
学	明電人子・発音・待	田、田	田原物語學四
Z	是原。但「成如奇特	萨斯斯	衛衛和羅洛衛
	表了那些已以一定 第	远是声	他には一部線
1	単元語 中語 表記	35.	1 9 2 2 3 3
14	医医隐 超 机石	dii 20	とする