Lab 3

2019/03/25

上機 (1)

- New E3 課程網頁內

上機 (1)


國立交通大學 數位教學平台
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Quiz1
Quiz1_Q1_sample.c
Quiz1_Q2_sample.c
Quiz1.pdf
下載資料夾
編修
點擊下載
下載完記得先
解壓縮，再開
始編寫程式

考試規則

1. 可以翻閱你覺得有幫助的書、講義 (教室會斷網!!)
2. 不得作弊，違者依校規論處
3. 若有格式錯誤的情形，會將該題分數 ×0.8 計算
4. **本次練習都只需繳交 Header file**

   不得更該 main_Q1.c 中任何內容

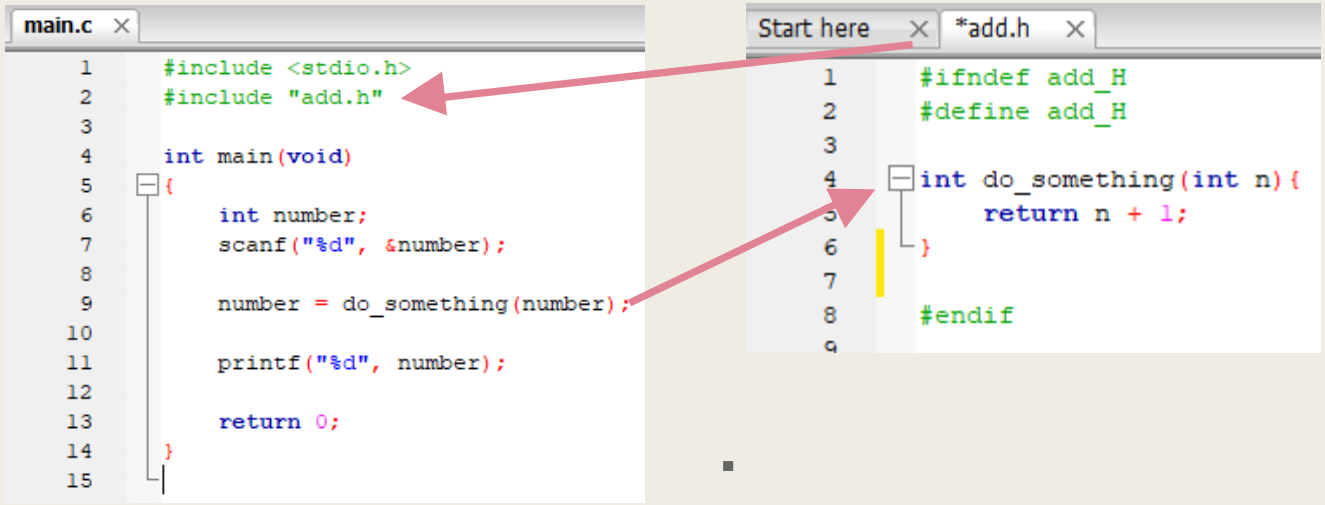
   繳交時請自行將 Header file 檔名改為 學號 – 題號

   如：0756704-1.h

   註：不需變更 ifndef, define, include 的檔名
5. 總共只有一次繳交機會，請務必確認格式正確後，再舉手找助教繳交。
6. 行動電子產品 (手機、平板電腦等等)請收在包包內，不要放在桌面上或使用它。

Header file

- Header file contains function declarations and macro definitions to be shared between several source files.
- For example



main.c

```c
#include <stdio.h>
#include "add.h"

int main(void)
{
    int number;
    scanf("%d", &number);

    number = do_something(number);

    printf("%d", number);

    return 0;
}
```

Start here | *add.h

```c
#ifndef add_H
#define add_H

int do_something(int n){
    return n + 1;
}

#endif
```

- In Header file (*.h) **, you can add any function or declaration except main function**

Q1 - eWallet

Description

Create a SavingsAccount class. Use a static data member *annualInterestRate* to store the annual interest rate (年利率) and set the default annual interest rate with 0.12 for saver. Each member of the SavingsAccount class contains a private data member *savingsBalance* (餘額) indicating the amount the saver currently has on deposit. Provide member function *calculateMonthlyInterest* that calculates the monthly interest (每月利息) by multiplying the savingsBalance by annualInterestRate divided by 12 and added to savingsBalance.
Provide a static member function *modifyInterestRate* that sets the static annualInterestRate to a new value.
Provide a member function *deposit* that add value to savingsBalance.
Provide a member function *withdraw* that reduce value of savingsBalance.
Provide a const member function *GetBalance* that show the current savingsBalance.
Also, create a User class that set the ID and gender of the owner of the saver.

Q1 - eWallet

Description

After the SavingAccount class have initialized, we can input instruction code to the program to manipulate the saver's account with the following code:

	Input_code	Input_content
Deposit	1	Deposit value
Withdraw	2	Withdraw value
Calculate Monthly Interest	3	0
Modify Interest Rate	4	Annual Interest Rate
End Program and show balance	0	0

The program will terminate when user prompt "0 0" and return the savingsBalance of the saver.

Example

- Sample Input 1

```
1 5000
2 2000
0 0
```

- Sample Output 1

```
3000.00000
```

- Sample Input 2

```
1 1000
3 0
4 0.36
2 10
3 0
0 0
```

- Sample Output 2

```
1030.00000
```

Q2 - IntegerSet

Description

Create class **IntegerSet** for which each object can hold integers in the range 0 through 99. Represent the set internally as a array of bool values. Element a[i] is true if integer i is in the set. Element a[j] is false if integer j is not in the set. The default constructor initializes a set to the so-called "empty set," i.e., a set for which all elements contain false.

Provide member functions for the common set operations. For example, provide a **Union_of_Set** member function that creates a third set that is the set-theoretic union of two existing sets(i.e., an element of the result is set to true if that element is true in either or both of the existing sets, and an element of the result is set to false if that element is false in each of the existing sets).

Q2 - IntegerSet

Description

Provide an **Intersection_of_Set** member function which creates a third set which is the set-theoretic intersection of two existing sets(i.e., an element of the result is set to false if that element is false in either or both of the existing sets, and an element of the result is set to true if that element is true in each of the existing sets).

Provide an **InsertElement** member function that places a new integer k into a set by setting a[k] to true.

Provide a **DeleteElement** member function that deletes integer m by setting a[m] to false.

Provide a **printSet** member function that prints a set as a list of numbers separated by spaces. Print only those elements that are present in the set.

Provide an **isEqualTo** member function that determines whether two sets are equal.

Example

```
Please choose six numbers to insert for testset1
1 2 3 4 5 6
--------------------------------
Set result for testset1
1_2_3_4_5_6_
--------------------------------
Set result for testset2
3_5_6_8_9_44_
--------------------------------
Set result for unionset
1_2_3_4_5_6_8_9_44_
--------------------------------
Set result for intersectionset
3_5_6_
--------------------------------
0

--------------------------------
Process exited after 10.27 seconds with return value 0
請按任意鍵繼續 . . .
```

```
Please choose six numbers to insert for testset1
3 5 6 8 9 44
--------------------------------
Set result for testset1
3_5_6_8_9_44_
--------------------------------
Set result for testset2
3_5_6_8_9_44_
--------------------------------
Set result for unionset
3_5_6_8_9_44_
--------------------------------
Set result for intersectionset
3_5_6_8_9_44_
--------------------------------
1

--------------------------------
Process exited after 15.35 seconds with return value 0
請按任意鍵繼續 . . .
```

Q&A