LAB 5

| Question | Task | TIME ALLOCATION | REMARKs |
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| 1 | Class operation & access control | 45 minutes |  |
| 2 | Call function and looping structures in C++ | 45 minutes |  |
| 3 | Classes, object and access control | 30 minutes |  |

**Question 1**

Write a complete code based on the following information.

1. Create a class called **Manisan**.
2. Data member (set to private): **KacangHijau(float), JagungDurian(float), Pulut Hitam(float), SantanMango(float), Pudding(float)**, **Fruits(float), price(float);**
3. Member functions.

(a) void **Bubur\_Manisan(……)**

To set all the data members (except for price) to the appropriate variables. Make function call to **ManisanOrder();**

(b) void **ManisanOrder()**

Display the order details and get the total **bowls**. Example:

**Here Your Bubur/Manisan Order List**

**-------------------------------------**

**Bubur Kacang Hijau :0 bowl(s)**

**Bubur Jagung + Durian :2 bowl(s)**

**Bubur Pulut Hitam :2 bowl(s)**

**Pulut, Santan & Mango :1 bowl(s)**

**Creamy Marble Pudding :0 bowl(s)**

**Fresh Mix Local Fruits :1 bowl(s)**

**>> Total bowls :6**

(c) void **calcPrice()**

Calculate the total Price to be made and ***display the price***

information [Hint: Refer Sample Output] based on the following

details:

* 1 bowl of Bubur Kacang Hijau costs RM2.50
* 1 bowl of Bubur Jagung + Durian costs RM4.50
* 1 bowl of Bubur Pulut Hitam costs RM2.50
* 1 bowl of Pulut, Santan & Mango costs RM4.50
* 1 bowl of Creamy Marble Pudding costs RM2.00
* 1 bowl of Fresh Mix Local Fruits costs RM2.00

1. In **main()** function, create an object of class **Manisan** called **BM**.
2. In **main()** function get input from the user on the quantity of bowl he wants from the manisan selection table and pass the data to method **Bubur\_Manisan (….)** so that the values can be set to the appropriate variables.
3. In **main()** call function **calcPrice()** to calculate the total price of a bowl of “Bubur & Manisan” has been ordered.
4. Use a while loop in your main to ensure that the program keep asking the user if he still interested to make an order until the user enters ‘N’ to quit.

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| **Sample Output Screen** |
| **---------------------------------------**  **++ Bubur & Manisan Stall ++**  **---------------------------------------**  **Looking for a yummy Bubur/Manisan? [Y/N]**  ***Y***  **........Yummy Bubur & Manisan Selection.........**  **[1] Bubur Kacang Hijau (bowl) : 0**  **[2] Bubur Jagung + Durian (bowl) : *2***  **[3] Bubur Pulut Hitam (bowl) : *2***  **[4] Pulut, Santan & Mango (bowl) : *1***  **[5] Creamy Marble Pudding (bowl) : *0***  **[6] Fresh Mix Local Fruits (bowl) : *1***  **Please be seated. Your order will be served shortly...**  **Here Your Bubur/Manisan Order List**  **-------------------------------------**  **Bubur Kacang Hijau :0 bowl(s)**  **Bubur Jagung + Durian :2 bowl(s)**  **Bubur Pulut Hitam :2 bowl(s)**  **Pulut, Santan & Mango :1 bowl(s)**  **Creamy Marble Pudding :0 bowl(s)**  **Fresh Mix Local Fruits :1 bowl(s)**  **>> Total bowls :6**  **>> Thank you. Your order price is RM 20.50**  **Would you like to make another order? [Y/N]**  ***Y***  **........Yummy Bubur & Manisan Selection.........**  **[1] Bubur Kacang Hijau (bowl) : 2**  **[2] Bubur Jagung + Durian (bowl) : *1***  **[3] Bubur Pulut Hitam (bowl) : *1***  **[4] Pulut, Santan & Mango (bowl) : *2***  **[5] Creamy Marble Pudding (bowl) : *1***  **[6] Fresh Mix Local Fruits (bowl) : *0***  **Please be seated. Your order will be served shortly...**  **Here Your Bubur/Manisan Order List**  **-------------------------------------**  **Bubur Kacang Hijau :2 bowl(s)**  **Bubur Jagung + Durian :1 bowl(s)**  **Bubur Pulut Hitam :1 bowl(s)**  **Pulut, Santan & Mango :2 bowl(s)**  **Creamy Marble Pudding :1 bowl(s)**  **Fresh Mix Local Fruits :0 bowl(s)**  **>> Total bowls :7**  **>> Thank you. Your order price is RM 23.00**  **Would you like to make another order? [Y/N]**  ***N***  **Press any key to continue** |

**Question 2**

Sekolah Kebangsaan Cyberjaya has asked you as one of the PIBG members to assist them in preparing a simple program that able to convert the UPSR trial exam results to the ‘STAR’-graph based on the District Education Office scale. The program will showing the achievement of all standard 6 classes (Total class: 4 classes).

Given below is the scale received from the District Education Office.

|  |  |  |
| --- | --- | --- |
| No. | Class Achievement | Star Result |
| 1 | The passing grade is between 85 and 100 | \* \* \* \* \* |
| 2 | The passing grade is between 70 and 84.9 | \* \* \* \* |
| 3 | The passing grade is between 60 and 69.9 | \* \* \* |
| 4 | The passing grade is between 50 and 59.9 | \* \* |
| 5 | Less than 50 | Poor Achievement |

\*\****Hint:*** Place the score as stated in the table above in a member function called **display\_scale().**

In getting the requested output (Refer to the sample output), you must:

* create a class called **Achievement**,
* declare two data members: **class name(string)** and **score(int)**
* define twomember functions:
  + void **set\_data(……)**

To set all the data members to the appropriate variables.

* + void **display\_scale()**

To display the achievement. Example:

**====================================**

**6Q1**

**The Class Passing Grade Achievement: 86%**

**\* \* \* \* \***

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| **Sample Output Screen** |
| --------------------------------------------------------------  Enter Class Achievement  --------------------------------------------------------------  Enter the class name : ***6Q1***  The class achievement (%) : ***86***  Enter the class name : ***6Q2***  The class achievement (%) : ***56***  Enter the class name : ***6Q3***  The class achievement (%) : ***75***  Enter the class name : ***6Q4***  The class achievement (%) : ***49***  THE SUMMARY OF UPSR TRIAL EXAM RESULT  ====================================  6Q1  The Class Passing Grade Achievement: 86%  \* \* \* \* \*  ====================================  *6Q2*  The Class Passing Grade Achievement: 56%  \* \*  ====================================  *6Q3*  The Class Passing Grade Achievement: 75%  \* \* \* \*  ====================================  *6Q4*  The Class Passing Grade Achievement: 49%  Poor Achievement  ==================================== |

**Question 3**

As a programmer, you are requested by Happy Bookstore sdn. bhd. to develop a simple program to be used by their potential buyers in making pre-order. You’re required to do based on these following information:

1. Create a class called **PreOrder**.
   1. Data member (set to private): **title(string), price(double);**
   2. Member Functions:
      * void **BookSelection()** : this function displays the following details

[1] Mum’s Favourite Recipes Book Price: RM14.00

[2] Weight Watchers Everyday Favourite Recipes Book Price: RM12.00

[3] The Skinny 5:2 Diet Family Recipes Book Price: RM10.90

[4] Favourite Teatime Recipes Book Price: RM10.00

[5] Favourite Traditional and Retro Recipes Price: RM13.00

* + - void **BookPreOrder()**: this function accepts users selection based on the book listing. User can only select one book. Price and title of the book will be display accordingly (use if-else statements here). If user enters number 6 or any number other than 1, 2, 3, 4, or 5; the price should be set to 0.00 and title=”No title”.
    - double **getPrice()** : returns price
    - string **getTitle()** : returns title;

1. Create a class called **Buyer**.
   1. Data member (set to private): **Booktitle(string), name(string), payment(double).** Declare an **object** of **class PreOrder** here.
   2. Member Functions:
      * void **set\_data()**: this function sets the name with user input, and calls the function **getBook()**
      * void **getBook():** this function calls the PreOrder’s member functions(void **BookSelection()** , void **BookPreOrder()**). This function is also sets the payment with the call function from class PreOrder named: **getPrice()** and initialized the title with the function called **getTitle();**
      * void **showDetails()**: this function displays the buyer’s details(name, Booktitle, payment)
2. In the main function:
   * + Create an object of Buyer
     + Use the Buyer object, to invoke the function **set\_data()** and

**showDetails();**

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| **Sample Output Screen** |
| **====================================**  **FAVOURITE RECIPE BOOK OF THE MONTH**  **====================================**  **Type your name :*Saffiyya***  **[1] Mum’s Favourite Recipes Book Price: RM14.00**  **[2] Weight Watchers Everyday Favourite Recipes Book Price: RM12.00**  **[3] The Skinny 5:2 Diet Family Recipes Book Price: RM10.90**  **[4] Favourite Teatime Recipes Book Price: RM10.00**  **[5] Favourite Traditional and Retro Recipes Price: RM13.00**  **Enter your choice, put your selection number:**  ***5***  **....................................**  **Saffiyya, Your order details**  **....................................**  **Book title : Favourite Traditional and Retro Recipes**  **Price : RM13.00** |