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| **Programming II**  Diploma in IT / DS / CSF  Year 1 (2021/22) Semester 2 | Week **3** |
| **2 hours** |
| **Practical 3 : Writing Your Own Classes** | |

**Objectives**

At the end of this practical, the students should be able to:

* write their own classes
* use their own classes

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| **IMPORTANT**   * Create a folder, **week03.** * Create a new Console App (.NET Core) project, **Snnnnnnnn\_CashCardApp**, in the **Week03** folder created above *(note:* ***Snnnnnnnn*** *is your Student Number)*. * At the end of the session, copy the folder **Week03** folder (which contains all your work) to PRG2 network folder: **\\ictspace.ict.np.edu.sg\PRG2**. |

**CashCardApp Application**

1. The class element diagram for **CashCard** class is given below. Implement the **CashCard** class in the CashCardApp.

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| **CashCard** |
| -id:string  -balance:double |
| +CashCard()  +CashCard(string,double)  +TopUp(double)  +Deduct(double):bool  +ToString():string |

Note:

**TopUp(double)** tops up a given amount to the cash card. No value is returned.

**Deduct(double)** deducts a given amount from the cash card if there is sufficient amount. The method returns true if deduction is successful, false otherwise.

1. Add the following to the Program class
2. Create a **List<CashCard>** named **cardList** for storing **CashCard** objects in the **Main()** method.
3. Write a method **InitCardList()** to create 5 **CashCard** objects with the information given below and add them to **cardList**.

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| --- | --- | --- | --- | --- | --- |
| **id**  **balance** | 001  25 | 002  25 | 003  30 | 004  30 | 005  50 |

Hint: The method signature should be

static void InitCardList(List<CashCard> cardList)

1. Call the **InitCardList()** in the **Main()** method.
2. Display the id and balance of all the **CashCard** objects.
3. Write a method **Search()** with the method signature given below to search and return the cash card in the list that has the given id. The method returns null if the given id is not found in the list.

static CashCard Search(List<CashCard> cardList, string id)

1. Perform the following in the Main() method:
   * Prompt user for an id that he wishes to search.
   * Call the **Search()** method to search for the cash card.
   * If the card is found,
     + display the balance of the card
     + prompt user for the amount that he wishes to deduct
     + display the status of deduction as well as the card balance
   * If the card is not found,
     + display a message to indicate that

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**If a student is found to have submitted work not done by him/her, he/she will not be awarded any marks for this practical. Disciplinary action may also be taken.**

**Similar action will be taken for student who allows other student(s) to copy his/her work.**