

國立臺南大學

資訊工程學系

網路程式設計

成績管理系統

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## 一、問題描述與系統目標

### 1. 問題描述

以上課講述之 Java 常用資料結構，開發一簡易之成績管理系統，模擬全校學生成績管理。

### 2. 系統目標

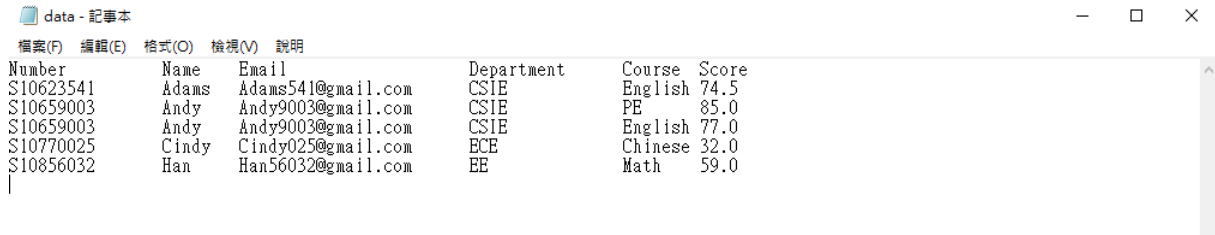
此系統至少包含 2 個 LinkedLists: Lib，並滿足以下所有要求：

1. `LinkedList<Grade> grade = new LinkedList<Grade>`。此 `LinkedList` 需能儲存學號和所有修課成績(課程數不定)，另外，它還需提供新增、查詢、刪除、修改等功能。另外，還提供印出(dump)所有修課成績之功能，以便除錯之用。
2. `LinkedList<Student> student = new LinkedList<Student>`，此 `LinkedList` 儲存學號、姓名、系別、EMAIL 等資訊。它還需提供新增、查詢、刪除、修改等功能。另外，還提供印出(dump)所有學生名單之功能。
3. 上述兩個 CLASS，必須自訂 Constructor、member functions。
4. 有關查詢部分，系統應至少提供下列指令：
  - i. 給予學號或姓名，可查出其所有修課成績。
  - ii. 給予一個總平均分數範圍區間[a,b]，可查出所有同學姓名、學號和修課成績。
  - iii. 給予一個課程名稱，可查出不及格名單。
5. 本系統以 command mode 執行，no GUI。

## 二、系統設計與功能報告

### 1. 輸入檔案位址，以利學生資料匯入

#### (1) data.txt



Number	Name	Email	Department	Course	Score
S10623541	Adams	Adams541@gmail.com	CSIE	English	74.5
S10659003	Andy	Andy9003@gmail.com	CSIE	PE	85.0
S10659003	Andy	Andy9003@gmail.com	CSIE	English	77.0
S10770025	Cindy	Cindy025@gmail.com	BCE	Chinese	32.0
S10856032	Han	Han56032@gmail.com	EE	Math	59.0

#### (2) cmd

```
Please enter the address of data.txt (ex.C:\example\data.txt)
Address : C:\Users\cat06\eclipse-workspace\NetWorkProgram HW2\data.txt
```

### 2. 系統功能選項，共有十二種功能

```
(1)Add Course Scores (2)Search Someone's Scores (3)Add Student information (4)Print Student information
(5)List of designated average of the course (6)Make a designated fail list (7)Delete Someone's information
(8)Delete Someone's designated grade (9)Revise someone's information (10)Revise someone's grade
(11)Print all student record that score already have record (12)Exit
Please choose which action that you want to take :
```

#### 3. 選項(1)，新增課堂成績

```
Please choose which action that you want to take : 1
Please enter the number of the student :S10659003
Success!
Please enter the course name and score that you want to record :
Type Course Name : Math
Type Score : 60
```

#### 4. 選項(2)，查詢某學生成績紀錄

```
(1)Add Course Scores (2)Search Someone's Scores (3)Add Student information (4)Print Student information
(5)List of designated average of the course (6)Make a designated fail list (7)Delete Someone's information
(8)Delete Someone's designated grade (9)Revise someone's information (10)Revise someone's grade
(11)Print all student record that score already have record (12)Exit
Please choose which action that you want to take : 2
Please enter the number of the student :S10659003
Number      Name      Email      Department
S10659003    Andy      Andy9003@gmail.com    CSIE

Course      Score
PE          85.0
English     77.0
Math        60.0
```

## 5. 選項(3)，新增學生資料

```
(1)Add Course Scores (2)Search Someone's Scores (3)Add Student information (4)Print Student information
(5)List of designated average of the course (6)Make a designated fail list (7)Delete Someone's information
(8)Delete Someone's designated grade (9)Revise someone's information (10)Revise someone's grade
(11)Print all student record that score already have record (12)Exit
Please choose which action that you want to take : 3
Please enter the student name and informations that you want to record :
Type Number : S10659001
Type Name : YILIN
Type Email : YILIN001@gmail.com
Type Department : CSIE
```

## 6. 選項(4)，顯示所有學生基本資料

```
(1)Add Course Scores (2)Search Someone's Scores (3)Add Student information (4)Print Student information
(5)List of designated average of the course (6)Make a designated fail list (7)Delete Someone's information
(8)Delete Someone's designated grade (9)Revise someone's information (10)Revise someone's grade
(11)Print all student record that score already have record (12)Exit
Please choose which action that you want to take : 4
```

Number	Name	Email	Department
S10623541	Adams	Adams541@gmail.com	CSIE
S10659003	Andy	Andy9003@gmail.com	CSIE
S10770025	Cindy	Cindy025@gmail.com	ECE
S10856032	Han	Han56032@gmail.com	EE
S10659001	YILIN	YILIN001@gmail.com	CSIE

## 7. 選項(5)，給予總平均分數區間，查出所有同學姓名、學號和修課成績

```
(1)Add Course Scores (2)Search Someone's Scores (3)Add Student information (4)Print Student information
(5)List of designated average of the course (6)Make a designated fail list (7)Delete Someone's information
(8)Delete Someone's designated grade (9)Revise someone's information (10)Revise someone's grade
(11)Print all student record that score already have record (12)Exit
Please choose which action that you want to take : 5
Please enter the boundary of high and low bound of score that you want to search :
Low Bound : 50
High Bound : 80
```

Number	Name	Average
S10623541	Adams	74.5

Course	Score
English	74.5

Number	Name	Average
S10659003	Andy	74.0

Course	Score
PE	85.0
English	77.0
Math	60.0

Number	Name	Average
S10856032	Han	59.0

Course	Score
Math	59.0

## 8. 選項(6)，給予一個課程名稱，可查出不及格名單

```
(1)Add Course Scores (2)Search Someone's Scores (3)Add Student information (4)Print Student information
(5)List of designated average of the course (6)Make a designated fail list (7)Delete Someone's information
(8)Delete Someone's designated grade (9)Revise someone's information (10)Revise someone's grade
(11)Print all student record that score already have record (12)Exit
Please choose which action that you want to take : 6
Please enter course name : Math
Number      Name      Score
S10856032   Han       59.0
```

## 9. 選項(7)，刪除某個學生的資料

```
(1)Add Course Scores (2)Search Someone's Scores (3)Add Student information (4)Print Student information
(5)List of designated average of the course (6)Make a designated fail list (7)Delete Someone's information
(8)Delete Someone's designated grade (9)Revise someone's information (10)Revise someone's grade
(11)Print all student record that score already have record (12)Exit
Please choose which action that you want to take : 7
Please enter the number of the student :S10856032
Number      Name      Email                      Department
S10856032   Han       Han56032@gmail.com        EE
```

## 10. 選項(8)，刪除某個學生的某科成績資料

```
(1)Add Course Scores (2)Search Someone's Scores (3)Add Student information (4)Print Student information
(5)List of designated average of the course (6)Make a designated fail list (7)Delete Someone's information
(8)Delete Someone's designated grade (9)Revise someone's information (10)Revise someone's grade
(11)Print all student record that score already have record (12)Exit
Please choose which action that you want to take : 8
Please enter the number of the student :S10659003
Number      Name      Email                      Department
S10659003   Andy     Andy9003@gmail.com        CSIE

Course      Score
PE          85.0
English     77.0
Math        60.0
-----
Please enter the course name that you want to delete(include grade) : PE
```

## 11. 選項(9)，修改某學生的基本資料

```
(1)Add Course Scores (2)Search Someone's Scores (3)Add Student information (4)Print Student information
(5)List of designated average of the course (6)Make a designated fail list (7)Delete Someone's information
(8)Delete Someone's designated grade (9)Revise someone's information (10)Revise someone's grade
(11)Print all student record that score already have record (12)Exit
Please choose which action that you want to take : 9
Please enter the number of the student :S10623541
Number      Name      Email                      Department
S10623541   Adams    Adams541@gmail.com        CSIE

Please enter the student name and informations that you want to revise :
Type Number : S10623541
Type Name : Adams
Type Email : Adams541@gmail.com
Type Department : EE
```

## 12. 選項(10)，修改某學生的某科目分數

```
(1)Add Course Scores (2)Search Someone's Scores (3)Add Student information (4)Print Student information
(5)List of designated average of the course (6)Make a designated fail list (7)Delete Someone's information
(8)Delete Someone's designated grade (9)Revise someone's information (10)Revise someone's grade
(11)Print all student record that score already have record (12)Exit
Please choose which action that you want to take : 10
Please enter the number of the student :S10659003
Number      Name      Email      Department
S10659003   Andy     Andy9003@gmail.com   CSIE

Course      Score
English     77.0
Math        60.0
-----
Please enter the course name that you want to revise(include grade) : Math
Please enter the course name : Discrete
Please enter the score : 66
```

## 13. 選項(11)，顯示出所有有修課的學生資料和修課成績紀錄


```
(1)Add Course Scores (2)Search Someone's Scores (3)Add Student information (4)Print Student information
(5)List of designated average of the course (6)Make a designated fail list (7)Delete Someone's information
(8)Delete Someone's designated grade (9)Revise someone's information (10)Revise someone's grade
(11)Print all student record that score already have record (12)Exit
Please choose which action that you want to take : 11
Number      Name      Email      Department      Course Score
S10623541   Adams    Adams541@gmail.com   EE              English 74.5
S10659003   Andy     Andy9003@gmail.com   CSIE            English 77.0
S10659003   Andy     Andy9003@gmail.com   CSIE            Discrete66.0
S10770025   Cindy    Cindy025@gmail.com   ECE             Chinese 32.0
```

## 14. 選項(12)，離開系統並且將變動過後的資料匯出成 Report.txt

### (1)Exit

```
(1)Add Course Scores (2)Search Someone's Scores (3)Add Student information (4)Print Student information
(5)List of designated average of the course (6)Make a designated fail list (7)Delete Someone's information
(8)Delete Someone's designated grade (9)Revise someone's information (10)Revise someone's grade
(11)Print all student record that score already have record (12)Exit
Please choose which action that you want to take : 12
```

### (2)Export，Report.txt

 Report - 記事本

檔案(F)	編輯(E)	格式(O)	檢視(V)	說明
Number	Name	Email	Department	Course Score
S10623541	Adams	Adams541@gmail.com	EE	English 74.5
S10659003	Andy	Andy9003@gmail.com	CSIE	English 77.0
S10659003	Andy	Andy9003@gmail.com	CSIE	Discrete66.0
S10770025	Cindy	Cindy025@gmail.com	ECE	Chinese 32.0