

Foundations of Coding Lab 5

We live in a world where blackbaud no longer exists. our job is to write a student records program that can print out the transcript, grade level, and email of our students. You are to implement this using functions, dictionaries, and lists.

In your program, you are to implement:

- A dictionary containing the records of every student
 - Each student themselves is a dictionary, containing the keys
 - Grades – which is a dictionary itself containing the keys and values
 - English : <grade>
 - Math : <grade>
 - History : <grade>
 - Religion : <grade>
 - Grade Level – an integer specifying a grade level
 - Email – a String specifying the student’s email

This implies the student directory is a **Dictionary of Dictionaries** where the **key** is the **student’s name** and the **value** is a **dictionary of records**.

And 10 helper functions:

- getStudent
- getStudentGrades
- getStudentGradeLevel
- addStudent
- removeStudent
- changeGrades
- CalculateGPA
- checkHonorRoll
- getStudentsByGradeLevel
- printMenu

A template for each function, indicating the parameters and return types and a description of their functionality is provided.

An example of the output is shown below. In our example run, we have created a senior named “paul George” who has a English grade of 59, a math grade of 78, a history grade of 85, and a religion grade of 95.

Print Menu

```
PS C:\Users\eSports> & C:/Users/eSports/AppData/Local/Programs/Python/Python312/python.exe "c:/Users/eSports/lab_5 complete.py"
1. Welcome to Calvert Hall's Student Directory!
2. Add Student
3. Remove Student
4. Get Student
5. Update Grades
6. Calculate GPA
7. Get Students by Grade Level
8. Exit
select your option: 1
```

Add Student

```
PS C:\Users\eSports> & C:/Users/eSports/AppData/Local/Programs/Python/Python312/python.exe "c:/Users/eSports/lab_5 complete.py"
What is the student's name? Jack Basmaci
Update grade for English class: 90
Update grade for Math class: 87
Update grade for History class: 85
Update grade for Religion class: 95
Enter grade level for Jack Basmaci: 12
Enter email for Jack Basmaci: Basmacij19@chcstudent.com
```

Get Students Grades

```
PS C:\Users\eSports> & C:/Users/eSports/AppData/Local/Programs/Python/Python312/python.exe "c:/Users/eSports/lab_5 complete.py"
{'English': 59, 'Math': 78, 'History': 97, 'Religion': 89}
```

Change Grades

```
PS C:\Users\eSports> & C:/Users/eSports/AppData/Local/Programs/Python/Python312/python.exe "c:/Users/eSports/lab_5 complete.py"
opening gradebook for paul george
Enter value for class English: 85
Enter value for class Math: 85
Enter value for class History: 85
Enter value for class Religion: 85
```

Calculate GPA

```
PS C:\Users\eSports> & C:/Users/eSports/AppData/Local/Programs/Python/Python312/python.exe "c:/Users/eSports/lab_5 complete.py"
80.75
```

Check Honor Roll

```
PS C:\Users\eSports> & C:/Users/eSports/AppData/Local/Programs/Python/Python312/python.exe "c:/Users/eSports/lab_5 complete.py"
80.75
```

Get Students By Grade Level

```
PS C:\Users\eSports> & C:/Users/eSports/AppData/Local/Programs/Python/Python312/python.exe "c:/Users/eSports/lab_5 complete.py"
Students in Grade 12
paul george
```

Example Run With “Nice” Looking Text

```
Welcome to Calvert Hall's Student Directory!
1. Add Student
2. Remove Student
3. Get Student
4. Update Grades
5. Calculate GPA
6. Get Students by Grade Level
7. Exit
select your option: 5
type in student's name to calculate GPA: paul george
paul george's GPA is: 80.75
paul george did not make the honor roll.
```