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| **Student** |
| **- studentID: String**  **- name: String**  **- programme: Programme**  **- yearOfStudy: int**  **- regYear: int** |
| **+ Student(studentID: String, name: String, programme: Programme, yearOfStudy: int, regYear: int)**  **+ getStudentID(): String**  **+ getName(): String**  **+ setName(name: String): void**  **+ getProgramme(): Programme**  **+ setProgramme(programme: Programme): void**  **+ getYearOfStudy(): int**  **+ setYearOfStudy(yearOfStudy: int): void**  **+ getRegYear(): int**  **+ setRegYear(regYear: int): void**  **+ getStudentCSV(): String** |

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| **courseModule** |
| * **moduleCode: String** * **moduleName: String** * **moduleCredits: int** |
| **+ courseModule()**  **+ courseModule(moduleCode: String, moduleName: String, moduleCredits: int)**  **+ getModuleCode(): String**  **+ getModuleName (): String**  **+ getModuleCredits (): int**  **+ setModuleCode(moduleCode: String): void**  **+ setModuleName(moduleName: String): void**  **+ setModuleCredits(moduleCredits: int): void**  **+ getCourseModuleCSV(): String**  **+ getCourseModuleText(): String** |

**UML Class Diagrams: Student Records System**

**By 22363564, 22367748, 22342842, 22370374**

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| **Faculty** |
| **- name: String**  **- department: String**  **- moduleCodes: ArrayList<String>** |
| **+ Faculty(name: String, department: String)**  **+ getName(): String**  **+ getDepartment(): String**  **+ addModules(moduleCode: String): void**  **+ getModules(): ArrayList<String>**  **+getCSVString(): String** |

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| **Admin** |
| * **username: String** * **password: String** * **newModule: courseModule** * **studentsFilepath: String** * **facultyFilePath: String** * **students: ArrayList<Student>** * **programes: ArrayList<Programme>** * **faculties: ArrayList<Faculty>** * **newStudent: Student** * **output: String** * **programmeYears: ArrayList<programmeYear>** |
| **+ Admin()**  **+ login(username: String, password: String): boolean**  **+ createFaculty(name: String, department: String): void**  **+ addFaculty(newFac: Faculty): void**  **+ getFaculty(): ArrayList<Faculty>**  **+ addModule(progCode: String, progYear: int, semester: int, module: courseModule): void**  **+ createProgramme(porgCode: String, progName: String, numberOfYears: int): void**  **+ getProgramme(progCode: String): Programme**  **+ createStudent(studentID: String, name: String, program: String, department: String, yearOfStudy: int): void**  **+ viewFaculties(): void**  **+ viewStudents(): void**  **+ getModules(): List<courseModule>**  **+ viewProgramme(): void**  **+ getStudentById(studentId: String): Student**  **+ assignModuleToFaculty(facultyName: String, module: courseModule): void**  **+ getFacultyByName(facultyName: String): Faculty** |

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| **gradedCourseModule** |
| * **grade: String** |
| **+ gradedCourseModule()**  **+ gradedCourseModule(moduleCode: String, moduleName:String, moduleCredits: int, grade: String)**  **+ gradedCourseModule(moduleCode: String, moduleName: String, moduleCredits: int)**  **+ gradedCourseModule(module: courseModule)**  **+ getGrade(): String**  **+ setGrade(grade: String):void**  **+ getCourseModuleCSV(): String**  **+ getCourseModuleText(): String** |

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| **Programme** |
| * **progName: String** * **progCode: String** * **numberOfYears: int** * **programmeYears: ArrayList<programmeYear>** |
| **+ Programme(progCode: String, progName: String, numberOfYears: int)**  **+ getProgrammeCSV(): String**  **+ addModule(progYear: int, semester: int, newModule: courseModule): void**  **+ checkModuleInProgression(moduleCode: String): boolean**  **+ getProgCode(): String**  **+ getName(): String**  **+ getNumberOfYears(): int**  **+ getProgYears(): ArrayList<programmeYear>**  **+ getModule(): List<courseModules>**  **+ setModuleGrade(courseYear: int, semester: int, moduleCode: String, grade: String): void** |

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| **programmeYear** |
| **+ sem1: ArrayList<gradedCourseModule>**  **+ sem2: ArrayList<gradedCourseModule>** |
| **+ programmeYear()** |

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| **CommandLineInterface** |
| **+ admin: Admin** |
| * **handleAdminOperactions(scanner: Scanner): void** * **handleFacultyOperations(scanner: Scanner): void** * **handleStudentOperations(scanner: Scanner): void**   **+ facultySaveCSV(allFac: ArrayList<Faculty>):void**  **+ facultyFindInCSV(name: String): Faculty**  **+ facultyLoadFromCSV(): Faculty**  **+ readCSVline(x: BufferedReader): List<String>**  **+ programmeSaveCSV(programme: Programme): void**  **+ programmeReadCSV(progCode: String): Programme**  **+ studentSaveCSV(student: Student): void**  **+ studentReadCSV(studentID: String): Student**  **+ moduleLoadFromCSV(moduleCode: String): courseModule**  **+ getTranscript(student: Student): String**  **+ QCAcalculation(factor: int, set: ArrayList<gradedCourseModules>): double** |