

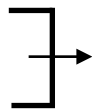
# COMPUTER SCIENCE FINAL PROJECT

## STUDENT MANAGEMENT APP:

### COLLECTS:

- Student Name
- Email
- Date of Birth
- Classes (taken for the current semester)
- Major (Careers of Interests)
- Obligations (dates and duration part-time Jobs, clubs etc)
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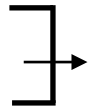
- Assignments for the semester
- Exams for the semester
- Projects for the semester



+ Due Date

Creates a whole semester's schedule telling and suggesting the best dates to get things done in order to be on track with school, while not overworking the student, works with the student's external obligations to ensure the schedule is optimal

- Grades
- Grading Weights
- Pass mark



Per a Class

Gives students an average idea of where they are standing academically and suggests what they can do to improve and which assignments they should target to pass if they want to do well in that particular class

- Can connect with Handshake (the career services platform for Clark) in order to show job listings (Using Major and Career Interests (Might use a drop down menu for student to choose careers of interest in order to limit and optimize the outputted results))

- **Constraints** satisfaction programs/problems : Not miss deadlines; turns things in 2 days before, can't do two assignments at the same time, consider when the assignments are issued (assignments can only be started after it has been released)
- Optimization problems
- **Objective** Function : what to minimize and what to maximize
- **Algorithm:** Scheduling Algorithms - (first come first serve, assignment issued first is the one dealt with, or assignment with the earliest due date is the one dealt first)
- **Algorithm:** Shortest Job Next - At any point in time you take the assignment that takes the shortest time to complete and do it first

**Preemptive:** when you do A and B comes in and can be done in a shorter time you stop and do b and then return A.

**Nonpreemptive:** when you start A you do until you finish

Shortest preemptive time

**Algorithm:** Round Robin Algorithm - when you have two things, A and B to do you do A for 10 minutes then B for ten minutes then A for ten minutes until you finish the two assignments A and B.

**Algorithm:** GPA Calculator...Grades Calculator Algorithm : for the grade part of the assignment

**Format:** WebPage, App, GUI

**Automated Emails:** reminding students of their assignments and due dates approaching

## HOW THE PROGRAM WORKS:

### OBJECTS

- Class: Student

ATTRIBUTES

1. Name
2. Email
3. Date of Birth (attributes)

- Class: Course

ATTRIBUTES

1. Class per Semester

- Class: Assignment: Assignment, Project, Exams, Tests

ATTRIBUTES

1. Assignment Type
  1. Course Name
  2. Due Date
  3. Duration needed to complete work
- SubClass: Project, Exams, Tests

- Class: Obligations: Jobs, Clubs

ATTRIBUTES

1. Hours on unavailability

## FEATURES OF PROGRAM:

- Scheduling Assignments in order to avoid overworking: ----> 3
  - \* Reminders/ notification on due dates
- Grade Calculation/ Academic Standing?? ----> 1
- Job Matching ----> 2

## GRADE CALCULATION/ ACADEMIC STANDING:

### Flow / Steps:

1. Show Welcome Message
  - Brief explanation on what the calculator does
2. Ask for a course to be inputted
  - Computer Science 120 , Physics 120 , Math 124 , English 020
3. Ask for different Assignment types for semester to be inputted for the course
  - Person will enter all assignment types at a go: to be separated using a comma
  - Use [ `split()` ] function
  - Example: [Problem Set] , [Exams], [Final Project]
4. Quantity of assignment per assignment type for each course
  - Print Statement: "Please input the number of assignments you have per the assignment type, list in the order in which you inputted the assignment type. Input integers only and separate with a comma"
  - Problem sets: 15, Exams: 3, Final Project: 1
  - Code will assume and assign numbers in the order of the assignment types inputted, therefore only numbers will be inputted in this step.
5. Weighting (percentage) of assignment types in terms of overall course grade (100%) for each course
  - Print statement: "Do not add percentage symbol, separate with commas"
  - Problem sets : 25%, Exams, 35%, Final Project : 40%
  - Code will assume and assign numbers in the order of the assignment types inputted, therefore only numbers will be inputted in this step.

6. Grade received per assignment:  
- "for each of the assignment types, {loop}  
enter the grades received (in fractions: score/total separated by  
commas)"

[Save 1-6 in arrays]

7. Calculate current grade for each course:  
for each course {loop over course array}  
for each assignment type  
sum grades up  
apply weight to summation  
add weighted summation together to get final grade  
print final grade for that particular course

Note: final grade calculated will only include assignments done as the sole contributors to the 100%.

## JOB MATCHING

CAREER FEILDS			
Architecture and Engineering	Arts, Culture, and Entertainment	Business Management and Administration	Communications
<u>Role:</u> Hologic Engineering Intern <u>Company:</u> Hologic <u>Link:</u> <a href="#">link</a> <u>Location:</u> Marlborough, MA	<u>Role:</u> Design, Fashion, Art <u>Company:</u> Converse <u>Link:</u> <a href="#">link</a> <u>Location:</u> Boston, MA	<u>Role:</u> Business Dev Intern <u>Company:</u> iAdvise <u>Link:</u> <a href="#">link</a> <u>Location:</u> Cambridge, MA	<u>Role:</u> Communications Intern <u>Company:</u> CDM Smith <u>Link:</u> <a href="#">link</a> <u>Location:</u> Boston, MA
<u>Role:</u> Stanley, Black and Decker Intern <u>Company:</u> Stanley, Black and Decker <u>Link:</u> <a href="#">link</a> <u>Location:</u> East Longmeadow, MA	<u>Role:</u> Design, Art Intern <u>Company:</u> Red Hat <u>Link:</u> <a href="#">link</a> <u>Location:</u> Boston, MA	<u>Role:</u> Business Dev Intern <u>Company:</u> Puma <u>Link:</u> <a href="#">link</a> <u>Location:</u> Westford, MA	<u>Role:</u> Communications Intern <u>Company:</u> Axis Comm. <u>Link:</u> <a href="#">link</a> <u>Location:</u> Chelmsford, MA
<u>Role:</u> Architecture Intern <u>Company:</u> Turner Construction <u>Link:</u> <a href="#">link</a> <u>Location:</u> Boston, MA	<u>Role:</u> Design, Art Intern <u>Company:</u> Signify <u>Link:</u> <a href="#">link</a> <u>Location:</u> Burlington, MA	<u>Role:</u> Business Dev Intern <u>Company:</u> Puma <u>Link:</u> <a href="#">link</a> <u>Location:</u> Westford, MA	<u>Role:</u> Communications Intern <u>Company:</u> PTC <u>Link:</u> <a href="#">link</a> <u>Location:</u> Boston, MA
<u>Role:</u> Structural Engineering Intern <u>Company:</u> BuroHappold Engineering <u>Link:</u> <a href="#">link</a> <u>Location:</u> Boston, MA	<u>Role:</u> Industrial Design Intern <u>Company:</u> Clio Company <u>Link:</u> <a href="#">link</a> <u>Location:</u> Newton, MA	<u>Role:</u> Business Dev Intern <u>Company:</u> Pega <u>Link:</u> <a href="#">link</a> <u>Location:</u> Cambridge, MA	<u>Role:</u> Communications Intern <u>Company:</u> VocaliD <u>Link:</u> <a href="#">link</a> <u>Location:</u> Belmont, MA
<u>Role:</u> Architecture Intern <u>Company:</u> HGA <u>Link:</u> <a href="#">link</a> <u>Location:</u> Boston, MA	<u>Role:</u> Graphic Design Intern <u>Company:</u> TwinFlame Company <u>Link:</u> <a href="#">link</a> <u>Location:</u> Boston, MA	<u>Role:</u> Marketing Intern <u>Company:</u> Alpha Net Solutions <u>Link:</u> <a href="#">link</a> <u>Location:</u> Millbury, MA	<u>Role:</u> Communications Intern <u>Company:</u> Nexstar Broadcasting <u>Link:</u> <a href="#">link</a> <u>Location:</u> Chicopee, MA

CAREER FEILDS		
Community and Social services	Education	Science and Technology
<u>Role:</u> Community Management Intern <u>Company:</u> Warner Bros, Entertainment <u>Link:</u> <a href="#">link</a> <u>Location:</u> Needham, MA	<u>Role:</u> Education Marketing Intern <u>Company:</u> MathWorks <u>Link:</u> <a href="#">link</a> <u>Location:</u> Natick, MA	<u>Role:</u> Science Intern <u>Company:</u> Ocean Spray <u>Link:</u> <a href="#">link</a> <u>Location:</u> Lakeville, MA
<u>Role:</u> Developer Community Intern <u>Company:</u> CyberArk <u>Link:</u> <a href="#">link</a> <u>Location:</u> Newton, MA	<u>Role:</u> Internship Coordinator, College Communication <u>Company:</u> Boston University <u>Link:</u> <a href="#">link</a> <u>Location:</u> Boston, MA	<u>Role:</u> Science Intern <u>Company:</u> Takeda Pharmaceuticals <u>Link:</u> <a href="#">link</a> <u>Location:</u> Cambridge, MA
<u>Role:</u> Outreach Intern <u>Company:</u> AAARP <u>Link:</u> <a href="#">link</a> <u>Location:</u> Boston, MA	<u>Role:</u> Peer Mentor Intern <u>Company:</u> Incompass Human Services <u>Link:</u> <a href="#">link</a> <u>Location:</u> Chelmsford, MA	<u>Role:</u> Science Research Intern <u>Company:</u> MIT Lincoln Laboratory <u>Link:</u> <a href="#">link</a> <u>Location:</u> Lexington, MA
<u>Role:</u> Developer Community Intern <u>Company:</u> Big Brother Big Sister <u>Link:</u> <a href="#">link</a> <u>Location:</u> Boston, MA	<u>Role:</u> Peer Mentor Intern <u>Company:</u> Mini-Miracles <u>Link:</u> <a href="#">link</a> <u>Location:</u> Natick, MA	<u>Role:</u> Science Research Intern <u>Company:</u> Vertex Pharmaceuticals <u>Link:</u> <a href="#">link</a> <u>Location:</u> Boston, MA
<u>Role:</u> Social Transformation Intern <u>Company:</u> Heluna Health <u>Link:</u> <a href="#">link</a> <u>Location:</u> Boston, MA	<u>Role:</u> Educational Counselor Intern <u>Company:</u> Hopeful Journeys Educational Centre <u>Link:</u> <a href="#">link</a> <u>Location:</u> Berverly, MA	<u>Role:</u> Science Research Intern <u>Company:</u> The Brattle Group Inc. <u>Link:</u> <a href="#">link</a> <u>Location:</u> Cambridge, MA

CAREER FEILDS		
Government	Environment, Fishing and Forestry	Health and Medicine
<u>Role:</u> Legal Government Relations intern <u>Company:</u> Motional. <u>Link:</u> <a href="#">link</a> <u>Location:</u> Boston, MA	<u>Role:</u> Environmental Sustainability intern <u>Company:</u> Seaside Sustainability Inc <u>Link:</u> <a href="#">link</a> <u>Location:</u> Gloucester, MA	<u>Role:</u> Health Intern <u>Company:</u> Behavioral Health Network, Inc <u>Link:</u> <a href="#">link</a> <u>Location:</u> Springfeild, MA
<u>Role:</u> Legal Government Relations intern <u>Company:</u> Hologic. <u>Link:</u> <a href="#">link</a> <u>Location:</u> Marlborough, MA	<u>Role:</u> Environmental Sustainability intern <u>Company:</u> Arup <u>Link:</u> <a href="#">link</a> <u>Location:</u> Boston, MA	<u>Role:</u> Health Intern <u>Company:</u> IBM <u>Link:</u> <a href="#">link</a> <u>Location:</u> Cambridge, MA
<u>Role:</u> Legal Government Relations intern <u>Company:</u> Liberty Mutual Insurance. <u>Link:</u> <a href="#">link</a> <u>Location:</u> Boston, MA	<u>Role:</u> Fisheries Management intern <u>Company:</u> Student Conservation Association <u>Link:</u> <a href="#">link</a> <u>Location:</u> Sunderland, MA	<u>Role:</u> Health Intern <u>Company:</u> Ariadne Labs <u>Link:</u> <a href="#">link</a> <u>Location:</u> Boston, MA
<u>Role:</u> Legal Government Relations intern <u>Company:</u> Guidehouse <u>Link:</u> <a href="#">link</a> <u>Location:</u> Boston, MA	<u>Role:</u> Arborist Trainee internship <u>Company:</u> Davey Tree <u>Link:</u> <a href="#">link</a> <u>Location:</u> Needham, MA	<u>Role:</u> Health Intern <u>Company:</u> Partners In Health <u>Link:</u> <a href="#">link</a> <u>Location:</u> Boston, MA
<u>Role:</u> Legal Government Relations intern <u>Company:</u> Meketa Investment Group <u>Link:</u> <a href="#">link</a> <u>Location:</u> Westwood, MA	<u>Role:</u> Trainee internship <u>Company:</u> PMA Consultants <u>Link:</u> <a href="#">link</a> <u>Location:</u> Braintree, MA	<u>Role:</u> Health Intern <u>Company:</u> Arbour Counseling Services <u>Link:</u> <a href="#">link</a> <u>Location:</u> Norwell, MA