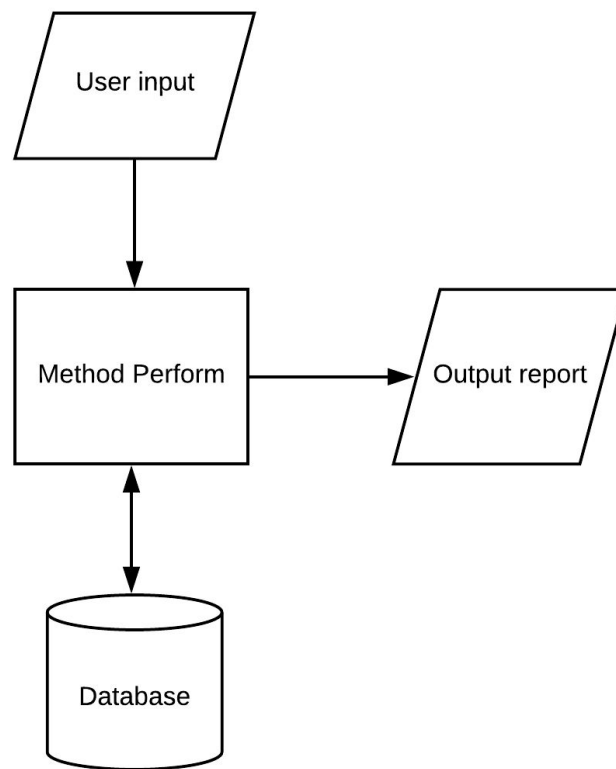


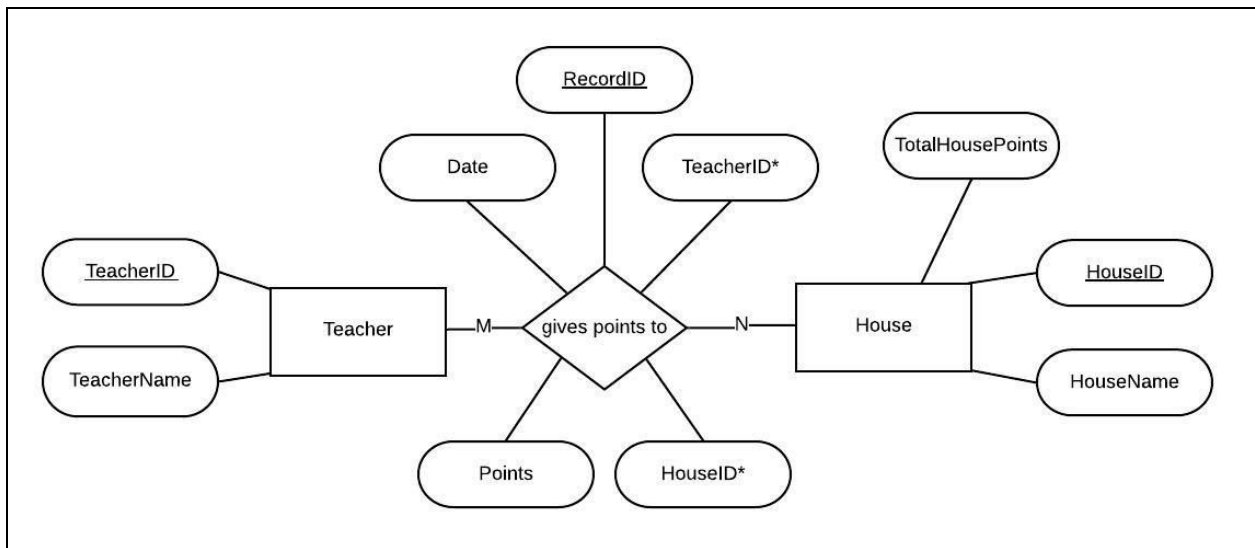
Criteria B

System Flowchart

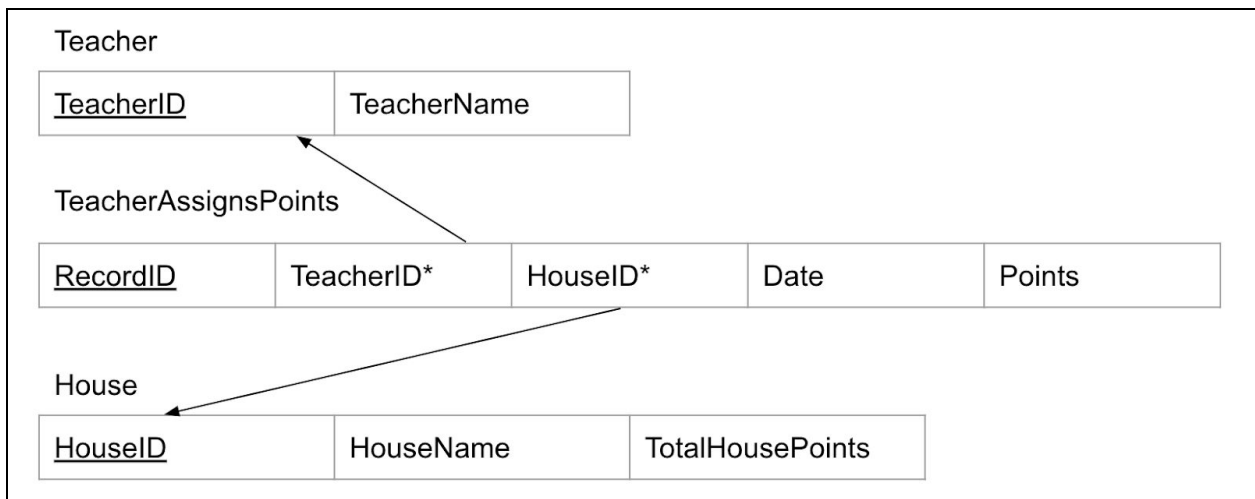


Data Design

Entity Relationship Diagram:

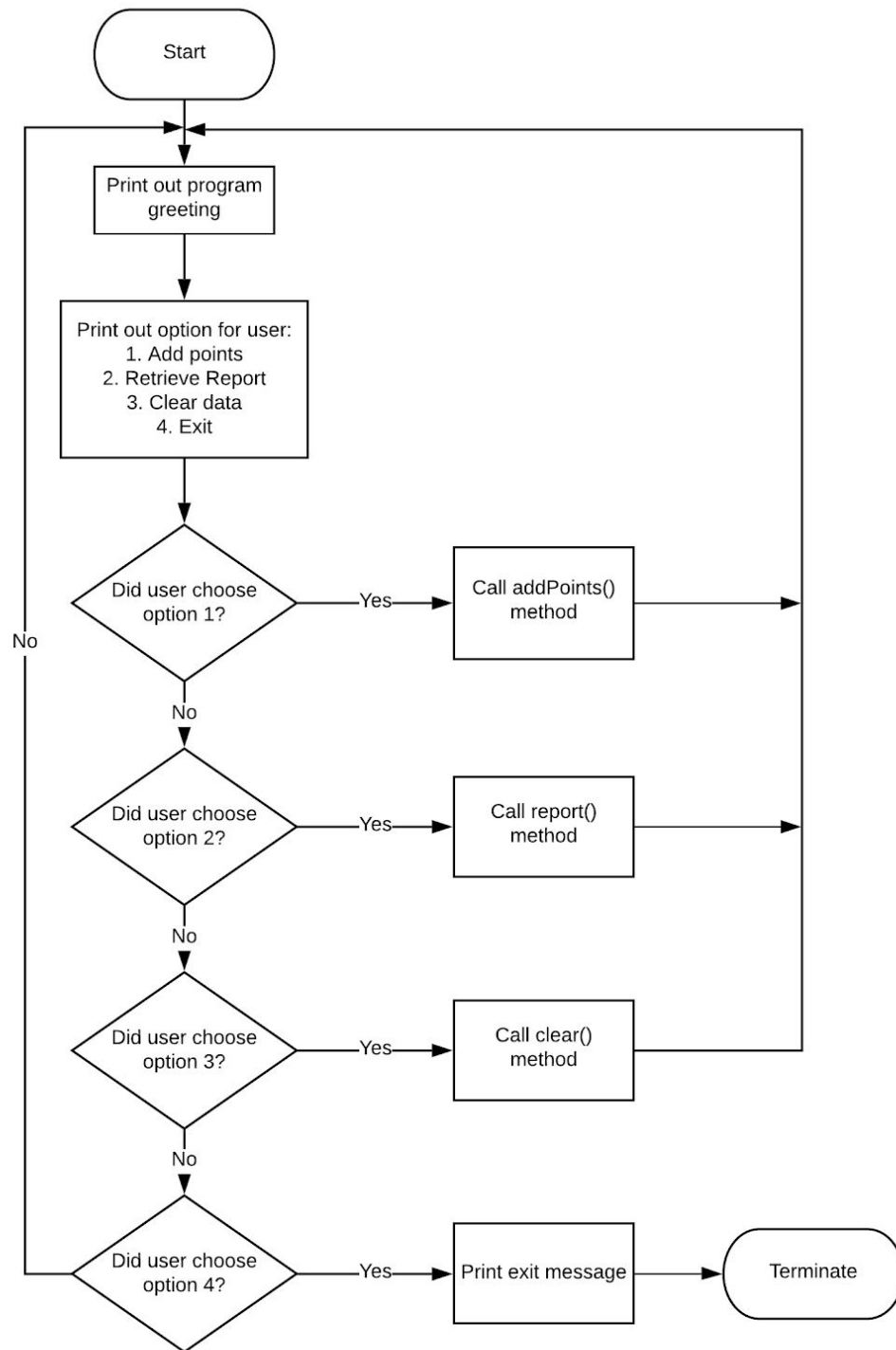


Relational Mapping:

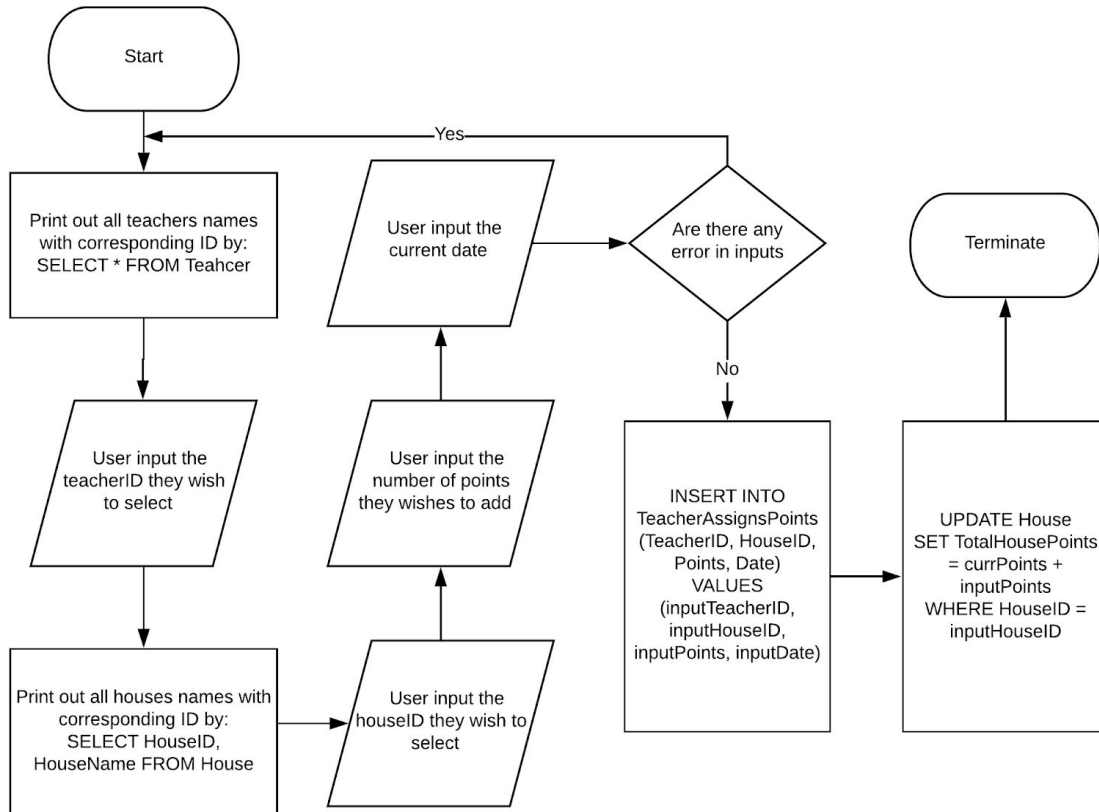


Algorithm Flowchart

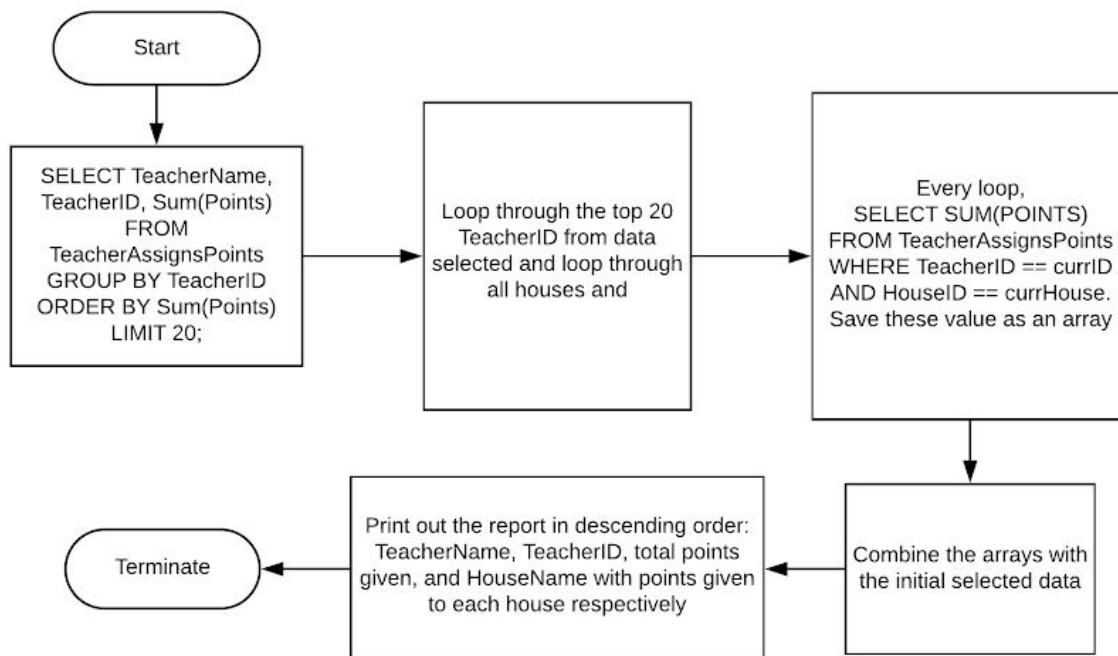
Overall Algorithm Flowchart:



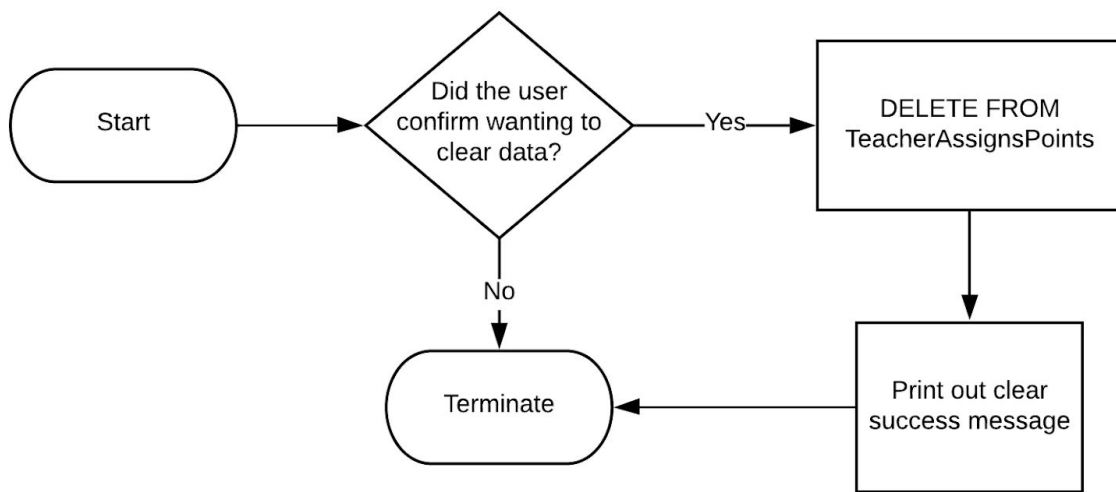
Method addPoints() Algorithm Flowchart:



Method report() Algorithm Flowchart:



Method clear() Algorithm Flowchart:



User Interface Design

Main menu:

Input option:

Console
<pre>-----=+=+=-----=+=+=----- Welcome to the House Points application Please choose one of the following action: 1. Add points 2. Retrieve report 3. Clear data 4. Exit Enter your action: _</pre>

Error message:

Console
<pre>-----=+=+=-----=+=+=----- There seems to be some error in your input. Please check and re-enter them.</pre>

Add point menu:

Input TeacherID:

Console
<pre>-----=+=+=-----=+=+=----- Please choose one of the following teachers by ID: TeacherName, TeacherID TeacherName, TeacherID TeacherName, TeacherID TeacherName, TeacherID Enter teacher ID: _</pre>

Input HouseID:

Console
<pre>-----=+=+=-----=+=+=----- Please choose one of the following houses by ID: HouseName, HouseID HouseName, HouseID HouseName, HouseID HouseName, HouseID Enter teacher ID: _</pre>

Input Date:

Console
<pre>-----=+=+=-----=+=+=----- Please enter today's date (DD/MM/YYYY): _</pre>

Success Message:

Console
<pre>-----=+=+=-----=+=+=----- Your have successfully add points to a house</pre>

Error message:

Console
<pre>-----=+=+=-----=+=+=----- There seems to be some error in your input. Please check and re-enter them.</pre>

Report menu:

Console				
=====+=+======+=+======				
Order	Teacher Name/ID	Points Given	House	Points
1	TeacherName/TeacherID	240	HouseName	100
			HouseName	90
			HouseName	30
			HouseName	20
2	TeacherName/TeacherID	220	HouseName	70
			HouseName	50
			HouseName	80
			HouseName	20
... ..				
10	TeacherName/TeacherID	80	HouseName	20
			HouseName	30
			HouseName	20
			HouseName	10

Clear data menu:

Confirmation check:

Console	
-----+=+=-----+=+=-----	
Type "confirm" if you are sure you want to clear all data: _	

Cleared message:

Console	
-----+=+=-----+=+=-----	
Your have cleared all data entries	

Exit menu:

Console	
-----+=+=-----+=+=-----	
You have exited the application.	
Thank you for your visit! :D	

Test Plan

Success Criteria	Action to Test	Method of Testing	Expected Result
The program is able to start without errors in code	Program will start successfully	Run the python code, then close the program. Repeat this action multiple times	Everytime, the program will be able to start without any errors
User can chooses 1-4 representing 4 options: 1 is to add points, 2 is to retrieve report, 3 is to clear data, 4 is to exit	The 4 options must appear everytime the code runs	Run the python code, then close the program. Repeat this action multiple times	Each time, the 4 options will always be printed and their method is there accordingly
	The application ask for user option input upon running	Run the python code, then close the program. Repeat this action multiple times.	Each time, there will be a prompt asking for user input the option they choose
	The 4 options can be chosen	Run the program multiple times, each time selecting a different option	After an option is chosen, the console will change to its next phase
If the user enters invalid numbers or data type when choosing an option, an error message appears and the program will restart.	When using number out of range	Input different integers outside of [1,4] such as: 0, -22, -10, 15, 100, 35, etc.	An error message appears and the program will restart every time.
	When using string	Input different strings: 'one', 'hello', '??', '!!', etc.	An error message appears and the program will restart every time.
	When using float	Input different floats like: 1.5, 4.2, -18.9, 200.5, etc.	An error message appears and the program will restart every time.
When option 1 is chosen, the user can choose TeacherID from a list of teachers, HouseID from a list of houses, input Points and input a date.	The list of teacher appears when option 1 is chosen	Test run option 1 multiple times	Each time, a list of teachers with their name and ID appears
	User can input a TeacherID	Test run option 1 multiple times	Each time, a prompt asking for TeacherID will appear after the

			teacher list is generated. The prompt will accept input from the user.
	The list of houses appears after user inputs TeacherID	Test run option 1 multiple times	Each time, a list of houses with their names and ID appears
	User can input a HouseID	Test run option 1 multiple times	Each time, a prompt asking for HouseID will appear after the house list is generated. The prompt will accept input from the user.
	User can input points	Test run option 1 multiple times	Each time, a prompt asking for how many points they're giving will appear after the user inputs HouseID. The prompt will accept input from the user.
	User can input a date	Test run option 1 multiple times	Each time, a prompt asking for the date will appear after the user inputs points. The prompt will accept input from the user.
If the user enters invalid ID or data type when inputting a TeacherID, HouseID, Points, or date, an error message appears and option 1 will restart.	When the user enters invalid TeacherID.	Entering a non-existent TeacherID or entering TeacherName instead of ID	An error message appears after all input is received and the program will restart every time.
	When the user enters invalid HouseID.	Entering a non-existent HouseID or entering HouseName instead of ID	An error message appears after all input is received and the program will restart every time.
	When the user enters invalid date.	Users did not enter a date, or did not follow the format, or enter a date that can't exist (ex. 30/02/2000)	An error message appears after all input is received and the program will restart every time.

When option 2 is chosen, a top 20 report of TeacherName/ID, Points Given, Houses, and points given to each House respectively is printed	A report of TeacherName and ID, Points Given, Houses, and points given to each House respectively is printed	Test run option 2 multiple times	Every time, A report of TeacherName and ID, Points Given, Houses, and points given to each House respectively is printed
	The top 20 people who have given most points in printed	Test run option 2 multiple times. Each time, calculate the displayed data.	The top 20 people appear and are accurately ordered.
When option 3 is chosen, users will be asked for confirmation that they want to clear data. A message will be printed to notified that data has been erased	The confirmation will appear	Test run option 2 multiple times.	The confirmation will appear to warn the user that they are deleting all data
	The message will appear	Test run option 2 multiple times and confirming every time.	A message will be printed on console to notify that the
Only when the user type 'confirm' will the data be cleared	When user type with capitalization	Type using capitalization in different places. Ex: CONFIRM, Confirm, CoFiRm, etc.	Data will not be cleared. Option 3 is exited back to the main menu.
	When user doesn't type 'confirm'	Type in: '111', 'yes', 'no', 'indeed', 'name', etc.	Data will not be cleared. Option 3 is exited back to the main menu.
	When user types 'confirm'	'confirm' is typed correctly without capitalization	Data will be cleared. A message will appear and user will go back to main menu
When option 4 is chosen, a thank you message will appear and the program stopped looping	The application give a thank you message before closing	Test run option 4 multiple times	Every time, the thank you message will appear and the program is stopped
When the database is updated, the report will be change accordingly	The user uses option 1, then print report in option 2	Input TeacherID, HouseID, Points, Date in option 1, then uses option 2 to print the report. Repeat this	In the report, the points given to each house, total points given by each person and the order will be changed

		process multiple times	accordingly
	The user uses option 3 to clear data, then print report in option 2	Input 'confirm' in option 3 to successfully clear data, then uses option 2 to print report	The report will be empty.