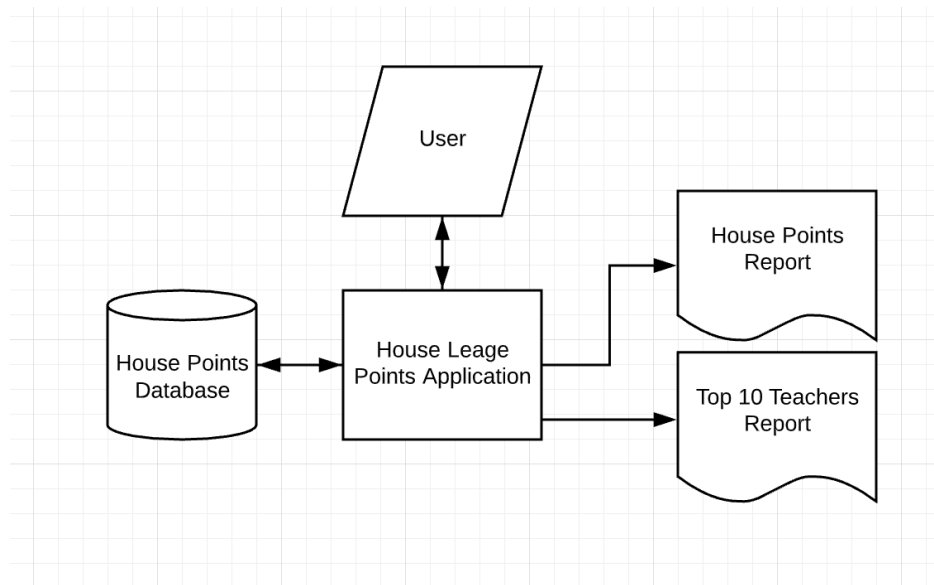
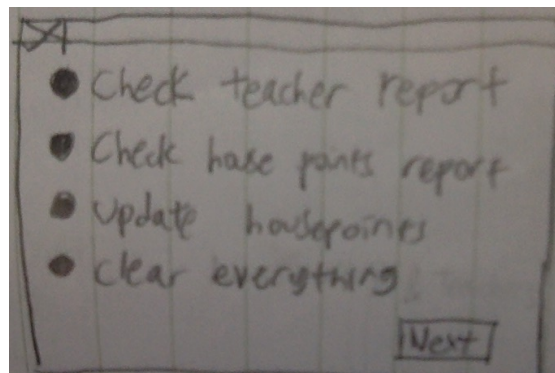


Criterion B:

## Systems FlowChart



## User Interface Design



Home Window

☒ Time frame : Past ☐ Days

| House \ Teacher | X | Y | Z | ... | Total |
|-----------------|---|---|---|-----|-------|
| A               |   |   |   |     |       |
| B               |   |   |   |     |       |
| C               |   |   |   |     |       |
| ...             |   |   |   |     |       |

Teacher Report

| House | Total Points |
|-------|--------------|
| X     | 300          |
| Y     | 500          |
| Z     | 450          |
| ...   | ...          |

House Points Report

☒

Teacher ☐ First Name ☐ Last Name

→ New Teacher

(Only fill if teacher is not in the options)

Point Awarded

House ☐ select New House

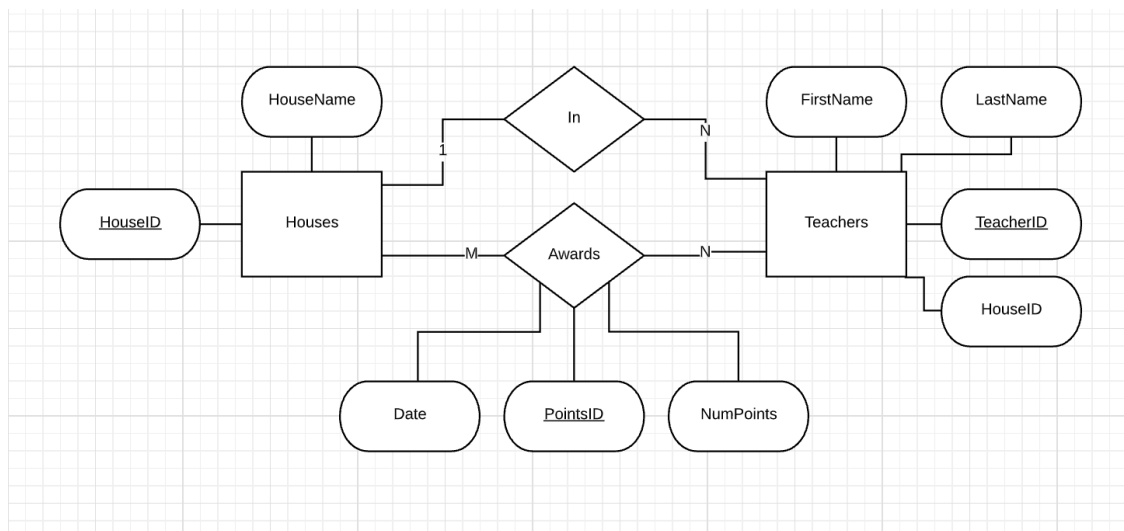
Day ☐ select Month ☐ select Year ☐ select

Update House Points

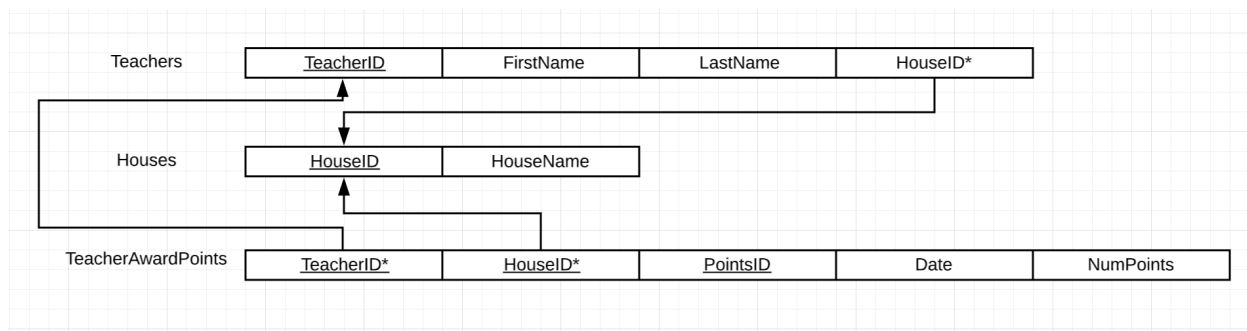
\*When there are new teachers or houses, instead of choosing a teacher and house from the drop down menu, the user should type in the new house and teacher.

## Data Design

ERD:



Relational Mapping:



## Algorithm Design

SQL Code for getting top 10 teachers:

```
SELECT Teachers.FirstName, Teachers.LastName
FROM Teachers JOIN TeacherAwardPoints JOIN PointsAwarded
WHERE Teachers.TeacherID = TeacherAwardPoints.TeacherID AND
TeacherAwardPoints.PointsID = PointsAwarded.PointsID
GROUP BY Teachers.TeacherID
ORDER by SUM(PointsAwarded.PointsID) LIMIT 10
```

SQL Code for getting total house points:

```
SELECT Houses.HouseName, SUM(TeacherAwardPoints.PointsID)
FROM Houses JOIN TeacherAwardPoints
WHERE Houses.HouseID = TeacherAwardPoints.HouseID
Group By Houses.HouseID
```

## Test Plan

| Success Criteria # | Situations to be Tested                    | Test Cases (If there are multiple cases to test)         | Expected Outcome   |
|--------------------|--|--|--|
| 1                  | Client enters the application              | n/a  | There are buttons to either choose to view house points report, view teacher report, or to add new house points.     |
| 2                  | Client chooses to view the teachers report | There are no teachers who have awarded house points      | An empty table is presented  |
| 2                  | Client chooses to view the teachers report | There are only 5 teachers who have awarded house points. | A table with the names of the 5 teachers who awarded house points is presented in a separate window.                 |
| 2                  | Client chooses to view the teachers report | There are 20 teachers who have awarded house points.     | A table with the names of the top 10 teachers who awarded the most house points is presented in a separate window.   |
| 2, 4               | Client chooses to view the teachers report | Client chooses the time frame of the past month.         | The 10 teachers presented in the table should be the top 10 teachers with the most points awarded in the past month. |
| 2, 4               | Client chooses to view the teachers report | Client chooses the time frame of the past week.          | The 10 teachers presented in the table should be the top 10 teachers with the  |

|      |   |   |   |
|------|---|---|---|
|      |   |   | most points awarded in the past week.   |
| 3    | Client choose to view the house points report | N/A   | A table with the names of each house and their total points should be presented in a separate window.   |
| 5, 8 | Client enters newly awarded house points.     | Name: Ms.Richardson<br>House: Hydra<br>Points: 500<br>Date: Apr 22 2020 | <p>The next time the client views the reports, the teacher report and the house points report should be updated accordingly.</p> <ul style="list-style-type: none"> <li>- Hydra's total points should increase by 500 points</li> <li>- Number of points awarded by Ms. Richardson in total and to Hydra should increase by 500 points</li> </ul> |
| 5, 8 | Client enters newly awarded house points.     | Name: Mr. Hsu<br>House: Wyvern<br>Points: 150<br>Date: Mar 12 2020      | <p>The next time the client views the reports, the teacher report and the house points report should be updated accordingly.</p> <ul style="list-style-type: none"> <li>- Wyvern's total points should increase by 150 points</li> <li>- Number of points awarded by Mr. Hsu in total and to Wyvern</li> </ul>                                    |

|   |   |  |  |
|---|---|--|--|
|   |   |  | should increase by 150 points                    |
| 6 | Client enters an invalid value for points.  | Teacher: Mr. Berry<br>House: Naga<br>Points: -50<br>Date: May 2 2021                                 | Client should be notified with an error message. |
| 6 | Client enters an invalid value for points.  | Teacher: Mrs. Berry<br>House: Shenlong<br>Points: 0<br>Date: Jan 30 2021                             | Client should be notified with an error message. |
| 6 | Client enters an invalid value for points.  | Teacher: Mrs. Berry<br>House: Hydra<br>Points: 0.5<br>Date: Feb 27 2021                              | Client should be notified with an error message. |
| 6 | Client enters an invalid date   | Teacher: Mr. Weinberg<br>House: Shenlong<br>Points: 230<br>Date: Jan 32 2021                         | Client should be notified with an error message. |
| 6 | Client enters an invalid date   | Teacher: Mr. Hendrikson<br>House: Naga<br>Points: 100<br>Date: Feb 0 2021                            | Client should be notified with an error message. |
| 6 | Client enters an invalid date   | Teacher: Dr. Chute<br>House: Hydra<br>Points: 160<br>Date: Feb 30 2021                               | Client should be notified with an error message. |
| 6 | Client simultaneously chooses from an existing teacher and enters a new teacher name. | Teacher: Ms. Richardson<br>Points: 200<br>Date: Dec 15 2019<br>House: Naga<br>New Teacher: Mr. Brian | Client should be notified with an error message. |
| 6 | Client simultaneously chooses from an existing teacher and enters a new teacher       | Teacher: Mrs. Angland<br>Points: 100<br>Date: Nov 15 2019  | Client should be notified with an error message. |

|      |   |  |  |
|------|---|--|--|
|      | name.   | House: Shenlong<br>New Teacher: Mr. Johnson  |  |
| 6    | Client simultaneously chooses from an existing house and enters a new house name. | Teacher: Ms. Richardson<br>Points: 200<br>Date: Dec 15 2019<br>House: Naga<br>New House: Unicorns  | Client should be notified with an error message.   |
| 6    | Client simultaneously chooses from an existing house and enters a new house name. | Teacher: Mrs. Angland<br>Points: 100<br>Date: Nov 15 2019<br>House: Shenlong<br>New House: Spiders | Client should be notified with an error message.   |
| 7, 9 | Application ends only when the client chooses to.                                 | N/A  | <p>The application should not automatically close after viewing the reports or adding new house points.</p> <p>The application should close gracefully without any unnecessary messages.</p> |
| 10   | Client clears house points, houses, teachers.                                     | N/A  | The next time the client views the reports, the house points in the teacher report and the house points report should be blank.  |
| 11   | Client enters new house name.   | Teacher: Mr. Mellon<br>Points: 200<br>Date: Dec 15 2019<br>New House: Gryffindor                   | The next time the client views the reports, Gryffindor should be added to the teacher report and house points report.  |

|    |                                 |   |  |
|----|---------------------------------|---|--|
|    |                                 |   | Gryffindor should appear in the drop down menu for selecting a house the next time the client enters house points.   |
| 11 | Client enters new house name.   | Teacher: Dr. Katz<br>Points: 200<br>Date: Dec 30 2019<br>New House: Slytherin | <p>The next time the client views the reports, Slytherin should be added to the teacher report and house points report.</p> <p>Slytherin should appear in the drop down menu for selecting a house the next time the client enters house points.</p> |
| 11 | Client enters new teacher name. | New Teacher: Mr. Sam<br>Points: 50<br>Date: Feb 7 2020<br>House: Shenlong     | <p>The next time the client views the reports, Mr. Sam should be added to the teacher report.</p> <p>Mr. Sam should appear in the drop down menu for selecting teachers the next time the client enters house points.</p>                            |
| 11 | Client enters new teacher name. | New Teacher: Mrs. Plath<br>Points: 150<br>Date: Feb 28 2020<br>House: Naga    | <p>The next time the client views the reports, Mrs. Plath should be added to the teacher report.</p> <p>Mrs. Plath should appear in the drop down menu for selecting teachers the next time the</p>  |



|  |  |  |                             |
|--|--|--|-----------------------------|
|  |  |  | client enters house points. |
|--|--|--|-----------------------------|