Question 1

30 / 30 pts

Consider the relational schema below:

```
Students(sid: integer, sname: string, major: string)
```

```
Courses(cid: integer, cname: string, hours: integer)
```

```
Enrollment(sid: integer, cid: integer, grade: real)
```

Write a **relational algebra expression** that satisfies this query?

- *Find the distinct names of all students that take at least three courses and do not major in "Philosophy".*

Submit your answer as a file attachment. You may write the answer in pencil and take a picture and submit that picture.

***Be sure to put your name and a copy of the question into your submission file**.*

Q1_dbms.png

Question 2

40 / 40 pts

Consider the relational schema below:

```
Students(sid: integer, sname: string, major: string)
```

```
Courses(cid: string, cname: string)
```

```
Enrollment(sid: integer, cid: string, grade: real)
```

Write a **tuple relational calculus expression** that satisfies this query?

- *Find the distinct names of all students who major in either "Math" or "Economics" who score less than 60% in either course 91.574 or in course 14.501 (using cid).*

Submit your answer as a file attachment. You may write the answer in pencil and take a picture and submit that picture.

Be sure to put your name into your submission file.

Q2_dbms.png

Question 3

30 / 30 pts

Consider the relational schema below:

```
Students(sid: integer, sname: string, degree: string, gpa: real)
```

```
College(cid: integer, cname: string)
```

```
Enrollment(sid: integer, cid: integer, onCoop: boolean)
```

Write a **relational algebra expression** that satisfies this query?

- *Find the total number of all students in "Khoury" who have a GPA above 3.8 and are on coop.*

Submit your answer as a file attachment. You may write the answer in pencil and take a picture and submit that picture.

***Be sure to put your name into your submission file**.*

Q3_dbms.png