assignment 7

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Question 6.a:

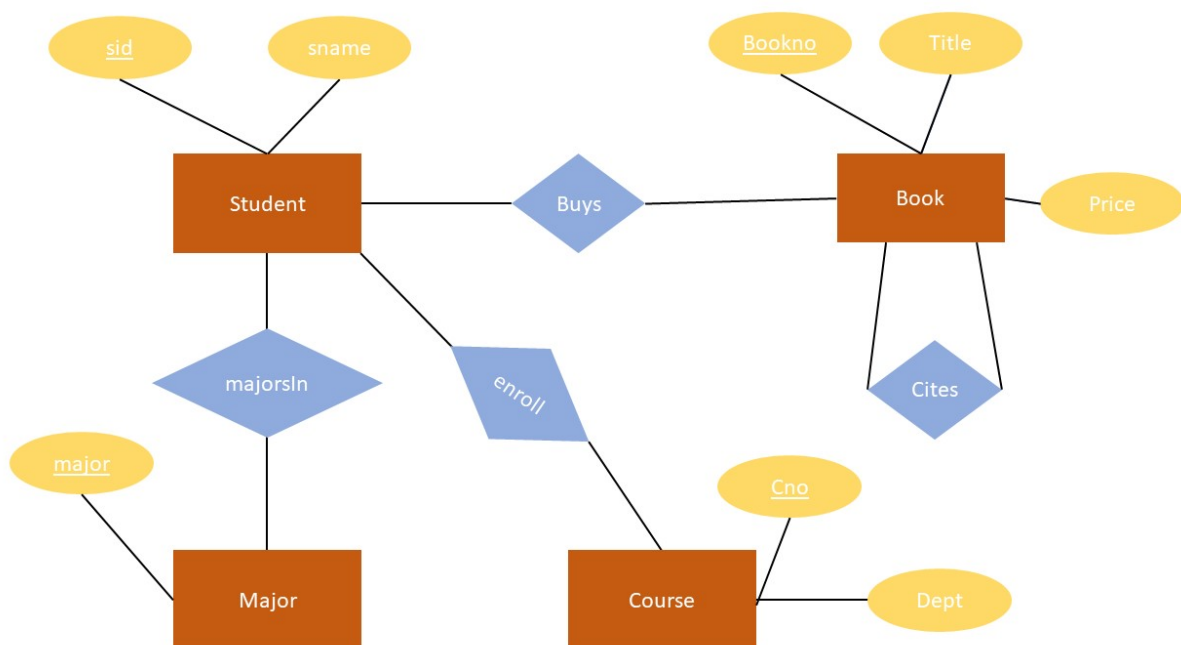
Figure 1: ER Diagram

Assumptions of the diagram:
All the relations are many to many
1) Student can buy multiple books - Book bought by multiple students
2) Student can enroll in multiple courses - Course enrolled by multiple students
3) Book can cite multiple books - Book cited by multiple books
4) Student can have multiple majors - Multiple students can have same major. (Major is an entity which has an attribute major, majors is a relation.)
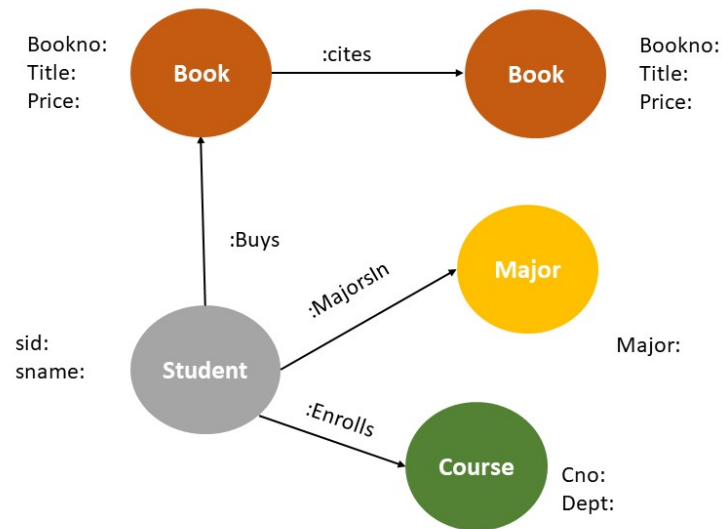
Question 6.b:

Figure 2: Graph Property Diagram

Question 7.a:

```
MATCH (:Student )-[r]->()
RETURN type(r)
```

Question 7.b:

```
MATCH (s:Student {sname: "John"})-[:Buys]->(b:Book)
WHERE b.price >= 50
RETURN s
```

Question 7.c:

```
MATCH(s:Student) - [:Buys] ->(b:Book),
(b)-[:cites]->(b1:Book)
WHERE b1.price >= 50
RETURN s
```

Question 7.d

```
MATCH(b:Book)-[:cites*]->(b1:Book)
WHERE b.price > 50
RETURN b1
```

Question 7.e

```
MATCH(b:Book) <- [:Buys] -(s:Student),
(s)-[:majors]->(m:Major{major:'Math'}),
```

```
(s)-[:majors]->(m1:Major{major : 'CS'})
RETURN b, count (s)
```