Kalpit Mody

Project Part 1

a.

i. Department
ii. Major
iii. Student
iv. Event

b. k

i. Department offers Majors
ii. Major references Department
iii. Students declare Major/s
iv. Major is given to Student
v. Department hosts Events
vi. Events are put on by Departments
vii. Students attend Events
viii. Event comprises of Students

c.

i.

Entity	Relation	Entity	Part	Card	Multi	Type Rel
Department	offers	Major	1	*	1..*	1:*
Major	references	Department	1	1	1..1	
Student	declares	Major	1	*	1..*	*:*
Major	is given to	Student	1	*	1..*	
Department	hosts	Events	0	*	0..*	*:*
Events	are put on by	Departments	1	*	1..*	
Students	attend	Events	1	*	1..*	*:*
Events	comprises of	Students	1	*	1..*	

d.

i. Department

1. department_name
2. chair_name
3. num_of_faculty

ii. Major

1. major_name
2. major_code

iii. Student

1. stu_id
2. stu_name
3. stu_initials

iv. Event

1. event_num
2. event_name
3. start_date
4. end_date

e.

i. Department:

1. PK: department_name
    a. We choose department_name as the primary key under the assumption that department names cannot be repeated and that they are unique. We choose this because it makes the most sense. Since we assume department_name is unique we do not need to create a department_id attribute.
2. CK: {department_name, chair_name}
    a. We cannot say that chair_name is a candidate key because there could be two people who have the same name that are the chairs of two different departments. We do assume that each person can only be the chair to one department. The set department_name and chair_name could be a candidate key because this combination would be unique.

ii. Major:

1. PK: major_code
    a. We choose major_coe as the primary key under the assumption that all major codes are unique and not repeated. The major code is easier to work with, so it makes sense to make this the primary key.
2. CK: major_name
    a. We can say that major_name is a candidate key under the assumption that no two majors have the same exact name making this attribute unique.

iii. Student:

1. PK: stu_id
    a. We create stu_id to be the primary key since stu_name and stu_initials are not unique attributes indicating that they cannot be the primary key. Stu_id is unique to each student meaning it can be the primary key.
2. CK: None
    a. The other two attributes are not unique so they cannot be candidate keys.

iv. Event:

1. PK: event_num
    a. We create an attribute that tracks the number of event that is being hosted. For example, the fifth event would have an event_num of 5. This makes each event unique as we cannot repeat numbers. The other attributes alone cannot be primary keys as they can be repeated. Instead of using a combination of multiple attributes as the primary key and to simply our lives, we created event_num.
2. CK: {event_name, start_date}
    a. None of the other attributes alone can be candidate keys as there is no guarantee that they are unique. We can have the same event name more than once, and we can have more than one event that starts or ends on the same day. The set event_name and start_date

could be a candidate key under the assumption that you cannot have more than one instance of an event in the same start date.

f.