Stephen's Neo4j database has the following "schema":

```
match (a:Character) return keys(a), count(*);
+------------------------------------------+
| keys(a)                      | count(*) |
+------------------------------------------+
| ["gender", "name", "species"] | 37       |
+------------------------------------------+

match (a:Character)-[r]-(b:Character) return type(r), keys(r), count(*);
+------------------------------------------+
| type(r)         | keys(r)       | count(*) |
+------------------------------------------+
| "appearsWith"   | ["loc", "ep"] | 1317     |
| "touches"       | ["loc", "ep"] | 228      |
| "speaksTo"      | ["loc", "ep"] | 696      |
| "mentions"      | ["loc", "ep"] | 420      |
+------------------------------------------+
```

Write Cypher queries to answer the following questions:

1. What characters have come into physical contact with both droids and aliens?

```
match (a {species:"droid"})-[:touches]-(b)-[:touches]-(c {species:"alien"})
            return distinct b.name;
+-----------+
| b.name    |
+-----------+
| "Luke"    |
| "Obi-wan" |
| "Leia"    |
| "R2D2"    |
| "C3PO"    |
| "Han"     |
+-----------+
```

2. Which is the "touchiest" episode? Which is the "talkiest?"

```
match (a:Character)-[r:touches]->(b:Character)
    return r.ep, count(*) order by count(*) desc;
+----------------+
| r.ep | count(*) |
+----------------+
| "VI" | 44       |
| "IV" | 35       |
| "V"  | 35       |
+----------------+
```

```
match (a:Character)-[r:speaksTo]->(b:Character)
    return r.ep, count(*) order by count(*) desc;
+-----------------+
| r.ep | count(*) |
+-----------------+
| "VI" | 130      |
| "V"  | 109      |
| "IV" | 109      |
+-----------------+
```

3. Which pairs of characters have appeared together in the greatest number of *different* locations?

```
neo4j@neo4j> match (a)-[r:appearsWith]->(b)
                  with a.name as aname, b.name as bname, count(distinct r.loc) as dl
                  where dl > 7
                  return aname, bname, dl order by dl desc;
+----------------------------+
| aname    | bname    | dl |
+----------------------------+
| "Luke"   | "R2D2"   | 12 |
| "Han"    | "Leia"   | 10 |
| "Han"    | "Chewie" | 10 |
| "C3PO"   | "R2D2"   | 10 |
| "Chewie" | "Luke"   | 10 |
| "Leia"   | "Luke"   | 9  |
| "Han"    | "R2D2"   | 9  |
| "Han"    | "C3PO"   | 9  |
| "Luke"   | "C3PO"   | 9  |
| "Luke"   | "Chewie" | 9  |
| "C3PO"   | "Chewie" | 9  |
| "C3PO"   | "Leia"   | 9  |
| "Chewie" | "Leia"   | 9  |
| "Chewie" | "R2D2"   | 9  |
| "Chewie" | "C3PO"   | 9  |
| "Chewie" | "Han"    | 9  |
| "Leia"   | "C3PO"   | 8  |
| "Leia"   | "Chewie" | 8  |
| "Han"    | "Luke"   | 8  |
| "Luke"   | "Han"    | 8  |
| "C3PO"   | "Han"    | 8  |
+----------------------------+
```

4. Which character has mentioned which other character the most times?

```
match (a:Character)-[r:mentions]->(b:Character)
   return a.name, b.name, r.ep, count(*) order by count(*) desc limit 1;
+----------------------------------+
| a.name | b.name | r.ep | count(*) |
+----------------------------------+
| "Luke" | "R2D2" | "IV" | 5        |
+----------------------------------+
```

5. Who are all the humans who speak to, or mention, wookies, and how many times do they each do so?

```
match (a:Character {species:"human"})-[r:speaksTo|mentions]->(b:Character {species:"wookie"})
    return a.name, type(r), b.name, count(*);
```

6. Which pairs of characters interact in some way (dialogue, presence in a scene, physical contact, *etc.*) in *all three* films?

```
match (a)-[r {ep:"IV"}]-(b),
    (a)-[r2 {ep:"VI"}]-(b),
    (a)-[r3{ep:"V"}]-(b)
    return a.name, type(r) as IV, type(r2) as V, type(r3) as VI, b.name;
```

a.name	IV	V	VI	b.name
"Vader"	"speaksTo"	"mentions"	"appearsWith"	"Leia"
"Vader"	"speaksTo"	"mentions"	"appearsWith"	"Leia"
"Vader"	"speaksTo"	"mentions"	"appearsWith"	"Leia"
"Vader"	"mentions"	"mentions"	"appearsWith"	"Leia"
"Vader"	"mentions"	"mentions"	"appearsWith"	"Leia"
"Vader"	"mentions"	"mentions"	"appearsWith"	"Leia"
"Vader"	"mentions"	"mentions"	"appearsWith"	"Leia"
"Vader"	"appearsWith"	"appearsWith"	"appearsWith"	"Luke"
"Vader"	"appearsWith"	"appearsWith"	"appearsWith"	"Luke"
"Vader"	"mentions"	"appearsWith"	"appearsWith"	"Luke"
"Vader"	"mentions"	"appearsWith"	"appearsWith"	"Luke"
"Vader"	"appearsWith"	"appearsWith"	"appearsWith"	"Luke"
"Vader"	"appearsWith"	"appearsWith"	"appearsWith"	"Luke"
"Vader"	"mentions"	"appearsWith"	"appearsWith"	"Luke"
"Vader"	"mentions"	"appearsWith"	"appearsWith"	"Luke"
"Vader"	"appearsWith"	"appearsWith"	"appearsWith"	"Luke"
"Vader"	"appearsWith"	"appearsWith"	"appearsWith"	"Luke"
"Vader"	"mentions"	"appearsWith"	"appearsWith"	"Luke"
"Vader"	"mentions"	"appearsWith"	"appearsWith"	"Luke"
"Vader"	"appearsWith"	"appearsWith"	"appearsWith"	"Luke"

```
| "Vader" | "appearsWith" | "appearsWith" | "appearsWith" | "Luke" |
| "Vader" | "mentions"     | "appearsWith" | "appearsWith" | "Luke" |
| "Vader" | "mentions"     | "appearsWith" | "appearsWith" | "Luke" |
| "Vader" | "appearsWith" | "touches"      | "appearsWith" | "Luke" |
| "Vader" | "appearsWith" | "touches"      | "appearsWith" | "Luke" |
| "Vader" | "mentions"     | "touches"      | "appearsWith" | "Luke" |
| "Vader" | "mentions"     | "touches"      | "appearsWith" | "Luke" |
| "Vader" | "appearsWith" | "touches"      | "appearsWith" | "Luke" |
| "Vader" | "appearsWith" | "touches"      | "appearsWith" | "Luke" |
| "Vader" | "mentions"     | "touches"      | "appearsWith" | "Luke" |
| "Vader" | "mentions"     | "touches"      | "appearsWith" | "Luke" |
| "Vader" | "appearsWith" | "speaksTo"     | "appearsWith" | "Luke" |
| "Vader" | "appearsWith" | "speaksTo"     | "appearsWith" | "Luke" |
| "Vader" | "mentions"     | "speaksTo"     | "appearsWith" | "Luke" |
| "Vader" | "mentions"     | "speaksTo"     | "appearsWith" | "Luke" |
| "Vader" | "appearsWith" | "speaksTo"     | "appearsWith" | "Luke" |
| "Vader" | "appearsWith" | "speaksTo"     | "appearsWith" | "Luke" |
| "Vader" | "mentions"     | "speaksTo"     | "appearsWith" | "Luke" |
| "Vader" | "mentions"     | "speaksTo"     | "appearsWith" | "Luke" |
| "Vader" | "appearsWith" | "speaksTo"     | "appearsWith" | "Luke" |
+----------------------------------------------------------------+
```