Ontology Design Project

Consider the famous Windsor family tree below.

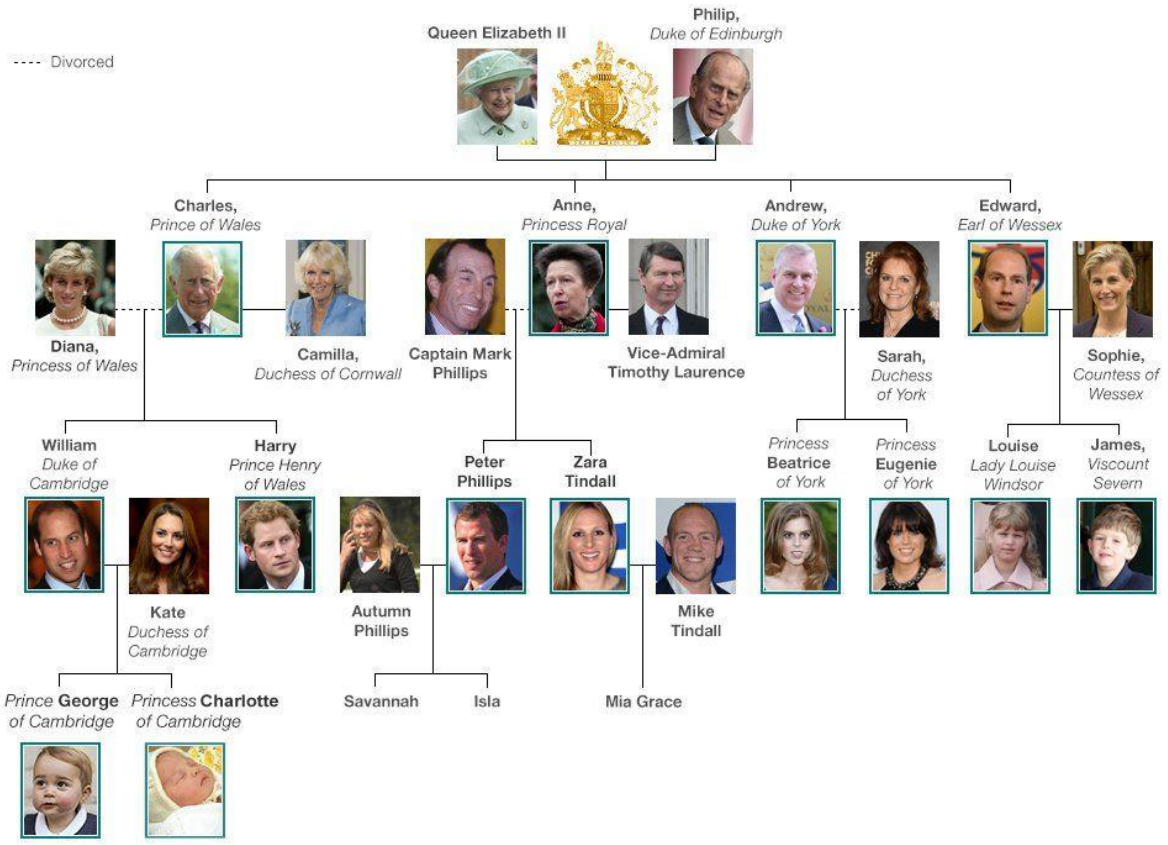

Figure 1: Family tree of British Royal Family

Create an ontology to model family relations. In the course of development consider labelling different role characteristics and role inclusion axioms. Consider the following specifications

- **Modelling Person**
  - Describe Sex, Male and Female classes
  - Describe parentage (e.g., hasFather, isFatherOf, etc.)
  - Run a reasoner and answer different queries.
    - Who is the father of Eugenie?
    - Who is the mother of father of Eugenie?
    - Who have more than one children?
- **Model royal designations**
  - Princess, Prince, Duke
  - Execute different queries
    - Who is the father of prince of Wales?
- **Create different data properties**
  - A generic event year property (hasEventYear)

    - Create birth year and death year properties and put them properly in property hierarchy
    - Create property of assigning names to individuals. A name has component as given name and family name. Create proper role hierarchy for this.
- **Model ancestor and descendants considering following**
    - Two persons are related with a relation
    - A person has ancestors and descendants
    - A person has grandparent, grandfather, grandmother, great grandparent, great grandfather, great grandmother
    - Define male ancestor, female ancestor, male descendant and female descendant
- **Model sibling relations**
    - Sibling is blood relation
    - Define sibling relation
    - Brother and sister relations are sibling relations
- **Uncle and Aunt relations**
    - They are blood relations
    - Uncle/Aunt can be maternal uncle/aunt or paternal uncle/aunt
- **Model Cousin relation**
    - Cousin is a blood relation
    - First cousins share a grandparent, but are not siblings
    - Second cousins share a great grandparent, but are not first cousins or siblings
- **Modelling marriage**
    - A marriage has partnership relation; one being male partner other being female partner
    - Marriage is an event and has an event year.

Insert the individuals present in Figure 1 into the created ontology and ask 5 different interesting DL queries in DL Query tab in protégé.

Submission: The ontology file in any protégé compliant format (e.g. RDF/XML) and DL queries along with their corresponding natural language statement in a separate file. Put them in a .zip file and submit the zip file.

****Any kind of plagiarism will result in penalty.**