DATASETS:

1. **Sports and Recreation Clubs**
2. **Multi-Use Community Centres**
3. **Accessible Parking Spaces**

PREFIXES:

```
PREFIX csv: <http://www.semanticweb.org/KDE#>
PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>
PREFIX math:<http://www.w3.org/2005/xpath-functions/math#>
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX geo: <http://www.opengis.net/ont/geosparql#>
PREFIX cs: <http://purl.org/vocab/changeset/schema#>
```

1. **What are SDCC (South Dublin City Council) owned Sports and Recreation Clubs & Multi-Use Community Centres?**

```
SELECT ?Name_Of_Center
WHERE {
?subject csv:isSdccOwned "Yes".
?subject csv:hasName ?Name_Of_Center.
}
```

2. **Give names of Sports and Recreation Clubs & Multi-Use Community Centres present In**

```
SELECT ?Name_Of_Center ?Address
WHERE {
?subject csv:hasAddress ?Address.
?center csv:hasContactInfo ?subject.
?center csv:hasName ?Name_Of_Center.
FILTER regex(?Address, "DUBLIN 12", "i")
}
```

3. **Which Sports and Recreation Clubs & Multi-Use Community Centres have meeting rooms to use?**

```
SELECT ?Name_Of_Center ?Is_Present
WHERE {
?subject csv:hasMeetingRooms ?Is_Present.
?center csv:hasFacilities ?subject.
?center csv:hasName ?Name_Of_Center.
FILTER(?Is_Present = "Yes")
}
```

4. **What are the counts of Sports and Recreation Clubs & Multi-Use Community centres were created by Community and ESRI (The Economic and Social Research Institute)?**

```
SELECT ?Creator (xsd:string(COUNT(?name)) AS ?Count)
WHERE {
?subject csv:createdBy ?Creator.
?subject csv:hasName ?name.
}GROUP BY ?Creator
```

5. **Which Sports and Recreation Clubs & Multi-Use Community Centres have coffee docks?**

```
SELECT ?Name_Of_Center ?Is_Present
WHERE {
?subject csv:hasCoffeeDock ?Is_Present.
?center csv:hasFacilities ?subject.
?center csv:hasName ?Name_Of_Center
FILTER(?Is_Present = "Yes")
}
```

6. **What are the parking areas available near a particular Sports and Recreation Club within distance of x meters ?**

```
SELECT ?Name_Of_Center ?Distance_In_Meters
WHERE {
?subject csv:hasX ?x.
?subject csv:hasY ?y.
?parkingrecord csv:hasCoordinates ?subject.
?parkingrecord rdf:type csv:ParkingSpace.
?parkingrecord csv:hasLocationName ?Name_Of_Center.
?parkingrecord csv:hasSpaceType ?type.
{
SELECT ?selectedx ?selectedy
WHERE {
?sub csv:hasX ?selectedx.
?sub csv:hasY ?selectedy.
?center csv:hasCoordinates ?sub.
?center csv:hasName "MARK'S CELTIC FOOTBALL CLUB".
}
}
BIND ((xsd:decimal(?selectedx) - xsd:decimal(?x)) * 0.0174533 AS ?phi)
BIND ((xsd:decimal(?selectedy) - xsd:decimal(?y)) * 0.0174533 AS ?lambda)
BIND ((xsd:decimal(?x)) * 0.0174533 AS ?lat1radians)
BIND ((xsd:decimal(?selectedx)) * 0.0174533 AS ?lat2radians)
BIND(math:sin(?phi / xsd:decimal(2)) * math:sin(?phi / xsd:decimal(2)) + math:cos(?lat1radians) *
math:cos(?lat2radians) * math:sin(?lambda / xsd:decimal(2)) * math:sin(?lambda / xsd:decimal(2))
AS ?a)
BIND(xsd:decimal(2) * math:atan2(math:sqrt(?a),math:sqrt(1-?a)) AS ?c)
```

```
BIND(xsd:decimal(6371000) * xsd:decimal(?c) AS ?distance)
BIND(xsd:string(?distance) AS ?Distance_In_Meters)
FILTER(?distance < xsd:decimal(4000))
} ORDER BY ?distance
```

7. **What are the different kinds of Space-type available for parking near a particular Sports and Recreation Club and what are the counts of each of them?**

```
SELECT ?Type (xsd:string(Count(?Type)) AS ?Count)
WHERE {
?subject csv:hasX ?x.
?subject csv:hasY ?y.
?parkingrecord csv:hasCoordinates ?subject.
?parkingrecord rdf:type csv:ParkingSpace.
?parkingrecord csv:hasLocationName ?name.
?parkingrecord csv:hasSpaceType ?Type.
{
SELECT ?selectedx ?selectedy
WHERE {
?sub csv:hasX ?selectedx.
?sub csv:hasY ?selectedy.
?center csv:hasCoordinates ?sub.
?center csv:hasName "NEILSTOWN COMMUNITY CENTRE".
}
}
# To get the distance between two coordinates in metres
# ref: https://www.movable-type.co.uk/scripts/latlong.html
BIND ((xsd:decimal(?selectedx) - xsd:decimal(?x)) * 0.0174533 AS ?phi)
BIND ((xsd:decimal(?selectedy) - xsd:decimal(?y)) * 0.0174533 AS ?lambda)
BIND ((xsd:decimal(?x)) * 0.0174533 AS ?lat1radians)
BIND ((xsd:decimal(?selectedx)) * 0.0174533 AS ?lat2radians)
BIND(math:sin(?phi / xsd:decimal(2)) * math:sin(?phi / xsd:decimal(2)) + math:cos(?lat1radians) *
math:cos(?lat2radians) * math:sin(?lambda / xsd:decimal(2)) * math:sin(?lambda / xsd:decimal(2))
AS ?a)
BIND(xsd:decimal(2) * math:atan2(math:sqrt(?a),math:sqrt(1-?a)) AS ?c)
BIND(xsd:decimal(6371000) * xsd:decimal(?c) AS ?distance)
BIND(xsd:string(?distance) AS ?dist)
FILTER(?distance < xsd:decimal(2000))
}GROUPBY ?Type
```

8. **What are the Sports and Recreation Clubs & Multi-Use Community Centres that have missing website information?**

```
SELECT ?name ?subject
WHERE {
?record csv:hasOnlinePresence ?subject.
?record csv:hasName ?name.
FILTER(NOT EXISTS { ?subject csv:hasWebsite ?site })
```

```
}
```

9. **What are disability accessible Sports and Recreation Clubs & Multi-Use Community Centres in**

```
SELECT ?Name_Of_Center ?Address
WHERE {
?subject csv:hasAddress ?Address.
?center csv:hasContactInfo ?subject.
?center csv:hasName ?Name_Of_Center.
FILTER regex(?Address, "DUBLIN 12", "i")
}
```

10. **What are the details of nearest parking area available near a particular Sports and Recreation Club and Give the number of available parking spaces?**

```
SELECT ?Name ?Distance (xsd:string(?numberofspaces) AS ?Number_Of_Spaces) ?Type_Of_Space
WHERE {
?subject csv:hasX ?x.
?subject csv:hasY ?y.
?parkingrecord csv:hasCoordinates ?subject.
?parkingrecord rdf:type csv:ParkingSpace.
?parkingrecord csv:hasLocationName ?Name.
?parkingrecord csv:hasSpaceType ?Type_Of_Space.
?parkingrecord csv:numberOfSpaces ?numberofspaces
{
SELECT ?selectedx ?selectedy
WHERE {
?sub csv:hasX ?selectedx.
?sub csv:hasY ?selectedy.
?center csv:hasCoordinates ?sub.
?center csv:hasName "SAINT MARY'S RUGBY FOOTBALL CLUB".
}
}
# To get the distance between two coordinates in metres
# ref: https://www.movable-type.co.uk/scripts/latlong.html
BIND ((xsd:decimal(?selectedx) - xsd:decimal(?x)) * 0.0174533 AS ?phi)
BIND ((xsd:decimal(?selectedy) - xsd:decimal(?y)) * 0.0174533 AS ?lambda)
BIND ((xsd:decimal(?x)) * 0.0174533 AS ?lat1radians)
BIND ((xsd:decimal(?selectedx)) * 0.0174533 AS ?lat2radians)
BIND(math:sin(?phi / xsd:decimal(2)) * math:sin(?phi / xsd:decimal(2)) + math:cos(?lat1radians) *
math:cos(?lat2radians) * math:sin(?lambda / xsd:decimal(2)) * math:sin(?lambda / xsd:decimal(2))
AS ?a)
BIND(xsd:decimal(2) * math:atan2(math:sqrt(?a),math:sqrt(1-?a)) AS ?c)
BIND(xsd:decimal(6371000) * xsd:decimal(?c) AS ?distance)
BIND(xsd:string(?distance) AS ?Distance)
FILTER(?distance < xsd:decimal(2000))
}ORDER BY ?distance LIMIT 1 OFFSET 1
```