This document consists of Query written in CSPARQL.

1. What are the trending topics across different conferences?

**REGISTER QUERY TrendingTopics AS**

**PREFIX ACE: <http://example.org/ACE/>**

**SELECT ?conference ?domain (COUNT(?domain) AS ?count)**

**FROM STREAM <http://example.org/stream> [RANGE 1h STEP 10m]**

**WHERE**

**{**

**?paper ACE:isAcceptedAt ?conference .**

**?paper ACE:hasDomain ?domain .**

**}**

**GROUP BY ?domain**

**ORDER BY DESC(?count)**

(If OWL reasoning has to be included then additional triple (?paper RDF:type ACE:ConferencePaper) has to be included in the query. This involves Max cardinality / Existential Restriction depending on the selected ACE profile.

2. Which research groups are active in specific fields?

**REGISTER QUERY ActiveResearchGroups AS**

**PREFIX ACE: <http://example.org/ACE/>**

**PREFIX OWL2Bench: <http://example.org/OWL2Bench/>**

**SELECT ?researchGroup ?domain**

**FROM STREAM <http://example.org/stream> [RANGE 1h STEP 10m]**

**WHERE**

**{**

**?paper ACE:isAcceptedAt ?conference .**

**?paper ACE:hasDomain ?domain .**

**?paper ACE:hasAuthor ?author .**

**?author OWL2Bench:hasAffiliation ?researchGroup .**

**?conference ACE:hasOrganizingCommitteeMember ?organizer .**

**?conference ACE:hasDomain ?domain .**

**?organizer OWL2Bench:hasAffiliation ?researchGroup .**

**}**

(If OWL reasoning has to be included then additional triple (?organizer RDF:type ACE:OrganizingCommittee) can be be included in the query. This involves SubProperty hierarchy and Universal Quantifier depending on the selected ACE profile.

3. What are the publication activities of different organizations?

**REGISTER QUERY PublicationActivities AS**

**PREFIX ACE: <http://example.org/ACE/>**

**PREFIX OWL2Bench: <http://example.org/OWL2Bench/>**

**SELECT ?organization ?domain**

**FROM STREAM <http://example.org/stream> [RANGE 1h STEP 10m]**

**WHERE**

**{**

**?paper ACE:hasDomain ?domain .**

**?paper ACE:hasAuthor ?author .**

**?author OWL2Bench:hasAffiliation ?organization .**

**}**

(If OWL reasoning has to be included then additional triple (?paper RDF:type ACE:AcademicManuscript) can be be included in the query. This involves SubClass hierarchy and Min cardinality / Existential Restriction depending on the selected ACE profile.

4. Which conferences match users' research interests?

**REGISTER QUERY ConferenceMatch AS**

**PREFIX ACE: <http://example.org/ACE/>**

**SELECT ?domain ?conference (COUNT(?domain) AS ?count)**

**FROM STREAM <http://example.org/stream> [RANGE 1h STEP 10m]**

**WHERE**

**{**

**?conference ACE:hasDomain ?domain .**

**?paper ACE:hasDomain ?domain .**

**?paper ACE:isAcceptedAt ?conference .**

**}**

**GROUP BY ?domain**

(If OWL reasoning has to be included then additional triple (?paper RDF:type ACE:ConferencePaper) has to be included in the query. This involves Max cardinality / Existential Restriction depending on the selected ACE profile.

5. Who are the interdisciplinary authors in a specific field?

**REGISTER QUERY InterdisciplinaryAuthors AS**

**PREFIX ACE: <http://example.org/ACE/>**

**PREFIX RDF: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>**

**SELECT ?author ?domain1 ?domain2**

**FROM STREAM <http://example.org/stream> [RANGE 1h STEP 10m]**

**WHERE**

**{**

**?paper ACE:isAcceptedAt ?conference .**

**?paper ACE:hasAuthor ?author .**

**?paper ACE:hasDomain ?domain1 .**

**?paper ACE:hasDomain ?domain2 .**

**?domain1 RDF:type ?ResearchField1 .**

**?domain2 RDF:type ?ResearchField2 .**

**FILTER (?domain1 != ?domain2)**

**}**

(If OWL reasoning has to be included then additional triple (?paper RDF:type ACE:Manuscript) has to be included in the query. This involves Max cardinality / Existential Restriction depending on the selected ACE profile.

6. Which sessions are the most popular?

**REGISTER QUERY SessionPopularity AS**

**PREFIX ACE: <http://example.org/ACE/>**

**SELECT ?session (COUNT(?person) AS ?count)**

**FROM STREAM <http://example.org/stream> [RANGE 1h STEP 10m]**

**WHERE**

**{**

**?person ACE:attends ?session .**

**}**

**GROUP BY ?session**

**ORDER BY DESC(?count)**

(If OWL reasoning has to be included then additional triple (?session RDF:type ACE:Session) has to be included in the query. This involves Owl:oneOf. )

7. What is the global research focus in a given field? (such as AI)

**REGISTER QUERY GlobalResearchFocus AS**

**PREFIX ACE: <http://example.org/ACE/>**

**PREFIX OWL2Bench: <http://example.org/OWL2Bench/>**

**PREFIX Location: <http://example.org/Location/>**

**SELECT ?country ?domain**

**FROM STREAM <http://example.org/stream> [RANGE 1h STEP 10m]**

**WHERE**

**{**

**?paper ACE:hasDomain ACE:ai .**

**?paper ACE:hasAuthor ?author .**

**?author OWL2Bench:hasAffiliation ?organization .**

**?organization Location:hasLocation ?location .**

**?location Location:isPartOf ?country .**

**}**

(This involves hasValue and transitive object property OWL constructs. Users can replace the domain name. Also by replacing it with ‘?domain’ will list out all the domains)

8. Which organizations are funding researchers in a given field?

**REGISTER QUERY FundingOrganizations AS**

**PREFIX ACE: <http://example.org/ACE/>**

**PREFIX OWL2Bench: <http://example.org/OWL2Bench/>**

**SELECT ?organization ?domain**

**FROM STREAM <http://example.org/stream> [RANGE 1h STEP 10m]**

**WHERE**

**{**

**?person ACE:getsStudentGrant ?award .**

**?award ACE:isFundedBy ?organization .**

**?organization RDF:type OWL2Bench:Organization .**

**}**

**GROUP BY ?organization**

(If OWL reasoning has to be included then additional triple (?person RDF:type ACE:StudentGrantAwardee) has to be included in the query. This involves existential restriction.

9. What are the networking opportunities in a given field?

**REGISTER QUERY NetworkingOpportunities AS**

**PREFIX ACE: <http://example.org/ACE/>**

**SELECT ?author ?organization ?domain**

**FROM STREAM <http://example.org/stream> [RANGE 1h STEP 10m]**

**WHERE**

**{**

**?paper1 ACE:hasDomain ?domain .**

**?paper2 ACE:hasDomain ?domain .**

**?paper1 ACE:hasAuthor ?author1 .**

**?paper2 ACE:hasAuthor ?author2 .**

**FILTER (?paper1 != ?paper2)**

**}**

**GROUP BY ?domain**

(If OWL reasoning has to be included then additional triple (?paper RDF:type ACE:ConferencePaper) has to be included in the query. This involves Max cardinality / Existential Restriction depending on the selected ACE profile.

10. What are the academic collaboration networks?

**REGISTER QUERY CollaborationNetworks AS**

**PREFIX ACE: <http://example.org/ACE/>**

**PREFIX OWL2Bench: <http://example.org/OWL2Bench/>**

**SELECT ?author ?collaborator**

**FROM STREAM <http://example.org/stream> [RANGE 1h STEP 10m]**

**WHERE**

**{**

**?author ACE:hasCoAuthor ?coAuthor .**

**?coAuthor OWL2Bench:hasAffiliation ?collaborator .**

**}**

This involves Object Property Role Chain

11. Who are the non-academic collaborators in a given field?

**REGISTER QUERY NonAcademicCollaborators AS**

**PREFIX ACE: <http://example.org/ACE/>**

**PREFIX OWL2Bench: <http://example.org/OWL2Bench/>**

**SELECT ?author ?collaborator**

**FROM STREAM <http://example.org/stream> [RANGE 1h STEP 10m]**

**WHERE**

**{**

**?author ACE:hasCoAuthor ?coAuthor .**

**?coAuthor OWL2Bench:hasAffiliation ?collaborator .**

**?collaborator RDF:type OWL2Bench:NonAcademicOrganization .**

**}**

This involves Object Property Role Chain

12. What is the geographical distribution of research activities?

**REGISTER QUERY GeographicalDistribution AS**

**PREFIX ACE: <http://example.org/ACE/>**

**PREFIX OWL2Bench: <http://example.org/OWL2Bench/>**

**PREFIX Location: <http://example.org/Location/>**

**SELECT ?country ?domain**

**FROM STREAM <http://example.org/stream> [RANGE 1h STEP 10m]**

**WHERE**

**{**

**?paper ACE:hasDomain ACE:ai .**

**?paper ACE:hasAuthor ?author .**

**?author OWL2Bench:hasAffiliation ?organization .**

**?organization Location:hasLocation ?location .**

**?location Location:isPartOf ?country .**

**}**

(If OWL reasoning has to be included then additional triple (?paper RDF:type ACE:ConferencePaper) has to be included in the query. This involves Max cardinality / Existential Restriction depending on the selected ACE profile.

13. What is the impact of different platforms on conference trends?

**REGISTER QUERY PlatformImpact AS**

**PREFIX ACE: <http://example.org/ACE/>**

**SELECT ?conference (COUNT(?person) AS ?count)**

**FROM STREAM <http://example.org/stream> [RANGE 1h STEP 10m]**

**WHERE**

**{**

**?conference ACE:hasEventMode ?mode .**

**?person ACE:attends ?conference .**

**}**

**GROUP BY ?conference**

**ORDER BY DESC(?count)**

(This involves Inverse depending on the selected ACE profile.