PART1	
DL	AdministrativeStaff AdministrativeStaff ⊑ Employee Article Article ⊑ Publication AssistantProfessor AssistantProfessor ⊑ Professor AssociateProfessor AssociateProfessor ⊑ Professor Book Book ⊑ Publication
DATALOG$^{\exists}$	Employee(X) :- AdministrativeStaff(X). Publication(X) :- Article(X). Professor(X) :- AssistantProfessor(X). Professor(X) :- AssociateProfessor(X). Publication(X) :- Book(X).
OWL	<owl:Class rdf:ID="AdministrativeStaff"> <rdfs:label>administrative staff worker</rdfs:label> <rdfs:subClassOf rdf:resource="#Employee" /> </owl:Class> <owl:Class rdf:ID="Article"> <rdfs:label>article</rdfs:label> <rdfs:subClassOf rdf:resource="#Publication" /> </owl:Class> <owl:Class rdf:ID="AssistantProfessor"> <rdfs:label>assistant professor</rdfs:label> <rdfs:subClassOf rdf:resource="#Professor" /> </owl:Class> <owl:Class rdf:ID="AssociateProfessor"> <rdfs:label>associate professor</rdfs:label> <rdfs:subClassOf rdf:resource="#Professor" /> </owl:Class> <owl:Class rdf:ID="Book"> <rdfs:label>book</rdfs:label> <rdfs:subClassOf rdf:resource="#Publication" /> </owl:Class>

PART2	
DL	ClericalStaff ClericalStaff ⊑ AdministrativeStaff College College ⊑ Organization ConferencePaper ConferencePaper ⊑ Article Course Course ⊑ Work

DATALOG$^{\exists}$	AdministrativeStaff(X) :- ClericalStaff(X). Organization(X) :- College(X). Article(X) :- ConferencePaper(X). Work(X) :- Course(X).
OWL	<owl:Class rdf:ID="ClericalStaff"> <rdfs:label>clerical staff worker</rdfs:label> <rdfs:subClassOf rdf:resource="#AdministrativeStaff" /> </owl:Class> <owl:Class rdf:ID="College"> <rdfs:label>school</rdfs:label> <rdfs:subClassOf rdf:resource="#Organization" /> </owl:Class> <owl:Class rdf:ID="ConferencePaper"> <rdfs:label>conference paper</rdfs:label> <rdfs:subClassOf rdf:resource="#Article" /> </owl:Class> <owl:Class rdf:ID="Course"> <rdfs:label>teaching course</rdfs:label> <rdfs:subClassOf rdf:resource="#Work" /> </owl:Class>

PART3	
DL	Chair Chair $\sqsubseteq$ Professor Chair $\sqsubseteq$ Person $\sqcap$ $\exists$ headOf.Department
DATALOG$^{\exists}$	Professor(X) :- Chair(X). #exists{Y}supportChair(X,Y) :- Chair(X). headOf(X,Y) :- supportChair(X,Y). Department(Y) :- supportChair(X,Y). Person(X) :- supportChair(X,Y).
OWL	<owl:Class rdf:ID="Chair"> <rdfs:label>chair</rdfs:label> <rdfs:subClassOf> <owl:Class> <owl:intersectionOf rdf:parseType="Collection"> <owl:Class rdf:about="#Person" /> <owl:Restriction> <owl:onProperty rdf:resource="#headOf" /> <owl:someValuesFrom> <owl:Class rdf:about="#Department" /> </owl:someValuesFrom> </owl:Restriction> </owl:intersectionOf> </owl:Class> </rdfs:subClassOf> <rdfs:subClassOf rdf:resource="#Professor" /> </owl:Class>

PART4	
DL	Dean Dean ⊑ Professor Dean ⊑ Person ⊓ ∃headOf.College
DATALOG$^{\exists}$	Professor(X) :- Dean(X). #exists{Y}supportDean(X,Y) :- Dean(X). headOf(X,Y) :- supportDean(X,Y). College(Y) :- supportDean(X,Y). Person(X) :- supportDean(X,Y).
OWL	<owl:Class rdf:ID="Dean"> <rdfs:label>dean</rdfs:label> <rdfs:subClassOf> <owl:Class> <owl:intersectionOf rdf:parseType="Collection"> <owl:Class rdf:about="#Person" /> <owl:Restriction> <owl:onProperty rdf:resource="#headOf" /> <owl:someValuesFrom> <owl:Class rdf:about="#College" /> </owl:someValuesFrom> </owl:Restriction> </owl:intersectionOf> </owl:Class> </rdfs:subClassOf> <rdfs:subClassOf rdf:resource="#Professor" /> </owl:Class>

PART5	
DL	Department Department ⊑ Organization Director Director ⊑ Person ⊓ ∃ headOf.Program
DATALOG$^{\exists}$	Organization(X) :- Department(X). #exists{Y}supportDirector(X,Y) :- Director(X). headOf(X,Y) :- supportDirector(X,Y). Program(Y) :- supportDirector(X,Y). Person(X) :- supportDirector(X,Y).
OWL	<owl:Class rdf:ID="Department"> <rdfs:label>university department</rdfs:label> <rdfs:subClassOf rdf:resource="#Organization" /> </owl:Class> <owl:Class rdf:ID="Director"> <rdfs:label>director</rdfs:label> <rdfs:subClassOf> <owl:Class> <owl:intersectionOf rdf:parseType="Collection"> <owl:Class rdf:about="#Person" /> <owl:Restriction>

	<owl:onProperty rdf:resource="#headOf" /> <owl:someValuesFrom> <owl:Class rdf:about="#Program" /> </owl:someValuesFrom> </owl:Restriction> </owl:intersectionOf> </owl:Class> </rdfs:subClassOf> </owl:Class>

PART6	
DL	Employee Employee ⊑ Person ⊓ ∃ worksFor.Organization
DATALOG$^{\exists}$	#exists{Y}supportEmployee(X,Y) :- Employee(X). worksFor(X,Y) :- supportEmployee(X,Y). Organization(Y) :- supportEmployee(X,Y). Person(X) :- supportEmployee(X,Y).
OWL	<owl:Class rdf:ID="Employee"> <rdfs:label>Employee</rdfs:label> <rdfs:subClassOf> <owl:Class> <owl:intersectionOf rdf:parseType="Collection"> <owl:Class rdf:about="#Person" /> <owl:Restriction> <owl:onProperty rdf:resource="#worksFor" /> <owl:someValuesFrom> <owl:Class rdf:about="#Organization" /> </owl:someValuesFrom> </owl:Restriction> </owl:intersectionOf> </owl:Class> </rdfs:subClassOf> </owl:Class>

PART7	
DL	Faculty Faculty ⊑ Employee FullProfessor FullProfessor ⊑ Professor GraduateCourse GraduateCourse ⊑ Course GraduateStudent GraduateStudent ⊑ Person GraduateStudent ⊑ ∃ takesCourse.GraduateCourse
DATALOG$^{\exists}$	Employee(X) :- Faculty(X). Professor(X) :- FullProfessor(X). Course(X) :- GraduateCourse(X). Person(X) :- GraduateStudent(X). #exists{Y}supportGraduateCourse(X,Y) :- GraduateStudent(X).

	takesCourse(X,Y) :- supportGraduateCourse(X,Y). GraduateCourse(Y) :- supportGraduateCourse(X,Y).
OWL	<owl:Class rdf:ID="Faculty"> <rdfs:label>faculty member</rdfs:label> <rdfs:subClassOf rdf:resource="#Employee" /> </owl:Class> <owl:Class rdf:ID="FullProfessor"> <rdfs:label>full professor</rdfs:label> <rdfs:subClassOf rdf:resource="#Professor" /> </owl:Class> <owl:Class rdf:ID="GraduateCourse"> <rdfs:label>Graduate Level Courses</rdfs:label> <rdfs:subClassOf rdf:resource="#Course" /> </owl:Class> <owl:Class rdf:ID="GraduateStudent"> <rdfs:label>graduate student</rdfs:label> <rdfs:subClassOf rdf:resource="#Person" /> <rdfs:subClassOf> <owl:Restriction> <owl:onProperty rdf:resource="#takesCourse" /> <owl:someValuesFrom> <owl:Class rdf:about="#GraduateCourse" /> </owl:someValuesFrom> </owl:Restriction> </rdfs:subClassOf> </owl:Class>

PART8	
DL	Institute Institute ⊑ Organization JournalArticle JournalArticle ⊑ Article Lecturer Lecturer ⊑ Faculty Manual Manual ⊑ Publication Organization Person PostDoc PostDoc ⊑ Faculty Professor Professor ⊑ Faculty Program Program ⊑ Organization Publication Research Research ⊑ Work
DATALOG$^{\exists}$	Organization(X) :- Institute(X). Article(X) :- JournalArticle(X). Faculty(X) :- Lecturer(X). Publication(X) :- Manual(X).

	Faculty(X) :- PostDoc(X). Faculty(X) :- Professor(X). Organization(X) :- Program(X). Work(X) :- Research(X).
OWL	<owl:Class rdf:ID="Institute"> <rdfs:label>institute</rdfs:label> <rdfs:subClassOf rdf:resource="#Organization" /> </owl:Class> <owl:Class rdf:ID="JournalArticle"> <rdfs:label>journal article</rdfs:label> <rdfs:subClassOf rdf:resource="#Article" /> </owl:Class> <owl:Class rdf:ID="Lecturer"> <rdfs:label>lecturer</rdfs:label> <rdfs:subClassOf rdf:resource="#Faculty" /> </owl:Class> <owl:Class rdf:ID="Manual"> <rdfs:label>manual</rdfs:label> <rdfs:subClassOf rdf:resource="#Publication" /> </owl:Class> <owl:Class rdf:ID="Organization"> <rdfs:label>organization</rdfs:label> </owl:Class> <owl:Class rdf:ID="Person"> <rdfs:label>person</rdfs:label> </owl:Class> <owl:Class rdf:ID="PostDoc"> <rdfs:label>post doctorate</rdfs:label> <rdfs:subClassOf rdf:resource="#Faculty" /> </owl:Class> <owl:Class rdf:ID="Professor"> <rdfs:label>professor</rdfs:label> <rdfs:subClassOf rdf:resource="#Faculty" /> </owl:Class> <owl:Class rdf:ID="Program"> <rdfs:label>program</rdfs:label> <rdfs:subClassOf rdf:resource="#Organization" /> </owl:Class> <owl:Class rdf:ID="Publication"> <rdfs:label>publication</rdfs:label> </owl:Class> <owl:Class rdf:ID="Research"> <rdfs:label>research work</rdfs:label> <rdfs:subClassOf rdf:resource="#Work" /> </owl:Class>

PART9	
DL	ResearchAssistant ResearchAssistant ⊑ ∃ worksFor.ResearchGroup ResearchAssistant ⊑ Student
DATALOG$^{\exists}$	Student(X) :- ResearchAssistant(X). #exists{Y}supportResearchGroup(X,Y) :- ResearchAssistant(X). worksFor(X,Y) :- supportResearchGroup(X,Y). ResearchGroup(Y) :- supportResearchGroup(X,Y).
OWL	<owl:Class rdf:ID="ResearchAssistant"> <rdfs:label>university research assistant</rdfs:label> <rdfs:subClassOf rdf:resource="#Student" /> <rdfs:subClassOf> <owl:Restriction> <owl:onProperty rdf:resource="#worksFor" /> <owl:someValuesFrom> <owl:Class rdf:about="#ResearchGroup" /> </owl:someValuesFrom> </owl:Restriction> </rdfs:subClassOf> </owl:Class>

PART10	
DL	ResearchGroup ResearchGroup ⊑ Organization Schedule Software Software ⊑ Publication Specification Specification ⊑ Publication
DATALOG$^{\exists}$	Organization(X) :- ResearchGroup(X). Publication(X) :- Software(X). Publication(X) :- Specification(X).
OWL	<owl:Class rdf:ID="ResearchGroup"> <rdfs:label>research group</rdfs:label> <rdfs:subClassOf rdf:resource="#Organization" /> </owl:Class> <owl:Class rdf:ID="Schedule"> <rdfs:label>schedule</rdfs:label> </owl:Class> <owl:Class rdf:ID="Software"> <rdfs:label>software program</rdfs:label> <rdfs:subClassOf rdf:resource="#Publication" /> </owl:Class> <owl:Class rdf:ID="Specification"> <rdfs:label>published specification</rdfs:label> <rdfs:subClassOf rdf:resource="#Publication" />

	</owl:Class>

PART11	
DL	Student Student ⊑ Person ⊓ ∃ takesCourse.Course SystemsStaff SystemsStaff ⊑ AdministrativeStaff
DATALOG$^{\exists}$	AdministrativeStaff(X) :- SystemsStaff(X). #exists{Y}supportStudent(X,Y) :- Student(X). takesCourse(X,Y) :- supportStudent(X,Y). Course(Y) :- supportStudent(X,Y). Person(X) :- supportStudent(X,Y).
OWL	<owl:Class rdf:ID="Student"> <rdfs:label>student</rdfs:label> <rdfs:subClassOf> <owl:Class> <owl:intersectionOf rdf:parseType="Collection"> <owl:Class rdf:about="#Person" /> <owl:Restriction> <owl:onProperty rdf:resource="#takesCourse" /> <owl:someValuesFrom> <owl:Class rdf:about="#Course" /> </owl:someValuesFrom> </owl:Restriction> </owl:intersectionOf> </owl:Class> </rdfs:subClassOf> </owl:Class> <owl:Class rdf:ID="SystemsStaff"> <rdfs:label>systems staff worker</rdfs:label> <rdfs:subClassOf rdf:resource="#AdministrativeStaff" /> </owl:Class>

PART12	
DL	TeachingAssistant TeachingAssistant ⊑ Person ⊓ ∃ teachingAssistantOf.Course
DATALOG$^{\exists}$	#exists{Y}supportTeachingAssist(X,Y) :- TeachingAssistant(X). teachingAssistantOf(X,Y) :- supportTeachingAssist(X,Y). Course(Y) :- supportTeachingAssist(X,Y). Person(X) :- supportTeachingAssist(X,Y).
OWL	<owl:Class rdf:ID="TeachingAssistant"> <rdfs:label>university teaching assistant</rdfs:label> <rdfs:subClassOf> <owl:Class> <owl:intersectionOf rdf:parseType="Collection"> <owl:Class rdf:about="#Person" />

	<owl:Restriction> <owl:onProperty rdf:resource="#teachingAssistantOf" /> <owl:someValuesFrom> <owl:Class rdf:about="#Course" /> </owl:someValuesFrom> </owl:Restriction> </owl:intersectionOf> </owl:Class> </rdfs:subClassOf> </owl:Class>

PART13	
DL	TechnicalReport TechnicalReport ⊑ Article UndergraduateStudent UndergraduateStudent ⊑ Student University University ⊑ Organization UnofficialPublication UnofficialPublication ⊑ Publication VisitingProfessor VisitingProfessor ⊑ Professor Work
DATALOG$^{\exists}$	Article(X) :- TechnicalReport(X). Student(X) :- UndergraduateStudent(X). Organization(X) :- University(X). Publication(X) :- UnofficialPublication(X). Professor(X) :- VisitingProfessor(X).
OWL	<owl:Class rdf:ID="TechnicalReport"> <rdfs:label>technical report</rdfs:label> <rdfs:subClassOf rdf:resource="#Article" /> </owl:Class> <owl:Class rdf:ID="UndergraduateStudent"> <rdfs:label>undergraduate student</rdfs:label> <rdfs:subClassOf rdf:resource="#Student" /> </owl:Class> <owl:Class rdf:ID="University"> <rdfs:label>university</rdfs:label> <rdfs:subClassOf rdf:resource="#Organization" /> </owl:Class> <owl:Class rdf:ID="UnofficialPublication"> <rdfs:label>unnoficial publication</rdfs:label> <rdfs:subClassOf rdf:resource="#Publication" /> </owl:Class> <owl:Class rdf:ID="VisitingProfessor"> <rdfs:label>visiting professor</rdfs:label> <rdfs:subClassOf rdf:resource="#Professor" /> </owl:Class> <owl:Class rdf:ID="Work"> <rdfs:label>Work</rdfs:label>

	</owl:Class>

PART14	
DL	advisor ∃ advisor.Thing ⊑ Person ⊤ ⊑ ∀ advisor.Professor affiliateOf ∃ affiliateOf.Thing ⊑ Organization ⊤ ⊑ ∀ affiliateOf.Person age ∃ age ⊑ Person affiliatedOrganizationOf ∃ affiliatedOrganizationOf.Thing ⊑ Organization ⊤ ⊑ ∀ affiliatedOrganizationOf.Organization degreeFrom hasAlumnus ≡ degreeFrom⁻ ∃ degreeFrom.Thing ⊑ Person ⊤ ⊑ ∀ degreeFrom.University doctoralDegreeFrom doctoralDegreeFrom ⊑ degreeFrom ∃ doctoralDegreeFrom.Thing ⊑ Person ⊤ ⊑ ∀ doctoralDegreeFrom.University
DATALOG∃	Person(X) :- advisor(X,Y). Professor(Y) :- advisor(X,Y). Organization(X) :- affiliatedOrganizationOf(X,Y). Organization(Y) :- affiliatedOrganizationOf(X,Y). Organization(X) :- affiliateOf(X,Y). Person(Y) :- affiliateOf(X,Y). Person(X) :- age(X,Y). Person(X) :- degreeFrom(X,Y). University(Y) :- degreeFrom(X,Y). degreeFrom(X,Y) :- hasAlumnus(Y,X). hasAlumnus(X,Y) :- degreeFrom(Y,X). Person(X) :- doctoralDegreeFrom(X,Y). University(Y) :- doctoralDegreeFrom(X,Y). degreeFrom(X,Y) :- doctoralDegreeFrom(X,Y).
OWL	<owl:ObjectProperty rdf:ID="advisor"> <rdfs:label>is being advised by</rdfs:label> <rdfs:domain rdf:resource="#Person" /> <rdfs:range rdf:resource="#Professor" /> </owl:ObjectProperty> <owl:ObjectProperty rdf:ID="affiliatedOrganizationOf"> <rdfs:label>is affiliated with</rdfs:label> <rdfs:domain rdf:resource="#Organization" /> <rdfs:range rdf:resource="#Organization" /> </owl:ObjectProperty> <owl:ObjectProperty rdf:ID="affiliateOf"> <rdfs:label>is affiliated with</rdfs:label> <rdfs:domain rdf:resource="#Organization" /> <rdfs:range rdf:resource="#Person" /> </owl:ObjectProperty>

	<owl:DatatypeProperty rdf:ID="age"> <rdfs:label>is age</rdfs:label> <rdfs:domain rdf:resource="#Person" /> </owl:DatatypeProperty> <owl:ObjectProperty rdf:ID="degreeFrom"> <rdfs:label>has a degree from</rdfs:label> <rdfs:domain rdf:resource="#Person" /> <rdfs:range rdf:resource="#University" /> <owl:inverseOf rdf:resource="#hasAlumnus"/> </owl:ObjectProperty> <owl:ObjectProperty rdf:ID="doctoralDegreeFrom"> <rdfs:label>has a doctoral degree from</rdfs:label> <rdfs:domain rdf:resource="#Person" /> <rdfs:range rdf:resource="#University" /> <rdfs:subPropertyOf rdf:resource="#degreeFrom" /> </owl:ObjectProperty>

PART15	
DL	advisor ∃ advisor.Thing ⊑ Person ⊤ ⊑ ∀ advisor.Professor affiliateOf ∃ affiliateOf.Thing ⊑ Organization ⊤ ⊑ ∀ affiliateOf.Person affiliatedOrganizationOf ∃ affiliatedOrganizationOf.Thing ⊑ Organization ⊤ ⊑ ∀ affiliatedOrganizationOf.Organization degreeFrom hasAlumnus ≡ degreeFrom⁻ ∃ degreeFrom.Thing ⊑ Person ⊤ ⊑ ∀ degreeFrom.University doctoralDegreeFrom doctoralDegreeFrom ⊑ degreeFrom ∃ doctoralDegreeFrom.Thing ⊑ Person ⊤ ⊑ ∀ doctoralDegreeFrom.University
DATALOG$^{\exists}$	Person(X) :- advisor(X,Y). Professor(Y) :- advisor(X,Y). Organization(X) :- affiliatedOrganizationOf(X,Y). Organization(Y) :- affiliatedOrganizationOf(X,Y). Organization(X) :- affiliateOf(X,Y). Person(Y) :- affiliateOf(X,Y). Person(X) :- age(X,Y). Person(X) :- degreeFrom(X,Y). University(Y) :- degreeFrom(X,Y). degreeFrom(X,Y) :- hasAlumnus(Y,X). hasAlumnus(X,Y) :- degreeFrom(Y,X). Person(X) :- doctoralDegreeFrom(X,Y). University(Y) :- doctoralDegreeFrom(X,Y). degreeFrom(X,Y) :- doctoralDegreeFrom(X,Y).
OWL	

	<owl:ObjectProperty rdf:ID="advisor"> <rdfs:label>is being advised by</rdfs:label> <rdfs:domain rdf:resource="#Person" /> <rdfs:range rdf:resource="#Professor" /> </owl:ObjectProperty> <owl:ObjectProperty rdf:ID="affiliatedOrganizationOf"> <rdfs:label>is affiliated with</rdfs:label> <rdfs:domain rdf:resource="#Organization" /> <rdfs:range rdf:resource="#Organization" /> </owl:ObjectProperty> <owl:ObjectProperty rdf:ID="affiliateOf"> <rdfs:label>is affiliated with</rdfs:label> <rdfs:domain rdf:resource="#Organization" /> <rdfs:range rdf:resource="#Person" /> </owl:ObjectProperty> <owl:DatatypeProperty rdf:ID="age"> <rdfs:label>is age</rdfs:label> <rdfs:domain rdf:resource="#Person" /> </owl:DatatypeProperty> <owl:ObjectProperty rdf:ID="degreeFrom"> <rdfs:label>has a degree from</rdfs:label> <rdfs:domain rdf:resource="#Person" /> <rdfs:range rdf:resource="#University" /> <owl:inverseOf rdf:resource="#hasAlumnus"/> </owl:ObjectProperty> <owl:ObjectProperty rdf:ID="doctoralDegreeFrom"> <rdfs:label>has a doctoral degree from</rdfs:label> <rdfs:domain rdf:resource="#Person" /> <rdfs:range rdf:resource="#University" /> <rdfs:subPropertyOf rdf:resource="#degreeFrom" /> </owl:ObjectProperty>

PART16	
DL	emailAddress ∃ emailAddress ⊑ Person hasAlumnus hasAlumnus ≡ degreeFrom⁻ ∃ hasAlumnus.Thing ⊑ University ⊤ ⊑ ∀ hasAlumnus.Person headOf headOf ⊑ worksFor listedCourse ∃ listedCourse.Thing ⊑ Schedule ⊤ ⊑ ∀ listedCourse.Course mastersDegreeFrom mastersDegreeFrom ⊑ degreeFrom ∃ mastersDegreeFrom.Thing ⊑ Person ⊤ ⊑ ∀ mastersDegreeFrom.University member ∃ member.Thing ⊑ Organization ⊤ ⊑ ∀ member.Person memberOf

	memberOf ≡ member⁻
DATALOG$^{\exists}$	Person(X) :- emailAddress(X,Y). University(X) :- hasAlumnus(X,Y). Person(Y) :- hasAlumnus(X,Y). worksFor(X,Y) :- headOf(X,Y). Schedule(X) :- listedCourse(X,Y). Course(Y) :- listedCourse(X,Y). Person(X) :- mastersDegreeFrom(X,Y). University(Y) :- mastersDegreeFrom(X,Y). degreeFrom(X,Y) :- mastersDegreeFrom(X,Y). Organization(X) :- member(X,Y). Person(Y) :- member(X,Y). memberOf(X,Y) :- member(Y,X). member(Y,X) :- memberOf(X,Y).
OWL	<owl:DatatypeProperty rdf:ID="emailAddress"> <rdfs:label>can be reached at</rdfs:label> <rdfs:domain rdf:resource="#Person" /> </owl:DatatypeProperty> <owl:ObjectProperty rdf:ID="hasAlumnus"> <rdfs:label>has as an alumnus</rdfs:label> <rdfs:domain rdf:resource="#University" /> <rdfs:range rdf:resource="#Person" /> <owl:inverseOf rdf:resource="#degreeFrom"/> </owl:ObjectProperty> <owl:ObjectProperty rdf:ID="headOf"> <rdfs:label>is the head of</rdfs:label> <rdfs:subPropertyOf rdf:resource="#worksFor"/> </owl:ObjectProperty> <owl:ObjectProperty rdf:ID="listedCourse"> <rdfs:label>lists as a course</rdfs:label> <rdfs:domain rdf:resource="#Schedule" /> <rdfs:range rdf:resource="#Course" /> </owl:ObjectProperty> <owl:ObjectProperty rdf:ID="mastersDegreeFrom"> <rdfs:label>has a masters degree from</rdfs:label> <rdfs:domain rdf:resource="#Person" /> <rdfs:range rdf:resource="#University" /> <rdfs:subPropertyOf rdf:resource="#degreeFrom"/> </owl:ObjectProperty> <owl:ObjectProperty rdf:ID="member"> <rdfs:label>has as a member</rdfs:label> <rdfs:domain rdf:resource="#Organization" /> <rdfs:range rdf:resource="#Person" /> </owl:ObjectProperty> <owl:ObjectProperty rdf:ID="memberOf"> <rdfs:label>member of</rdfs:label> <owl:inverseOf rdf:resource="#member" /> </owl:ObjectProperty>

PART17	
DL	name officeNumber orgPublication ∃ orgPublication.Thing ⊑ Organization ⊤ ⊑ ∀ orgPublication.Publication publicationAuthor ∃ publicationAuthor.Thing ⊑ Publication ⊤ ⊑ ∀ publicationAuthor.Person publicationDate ∃ publicationDate.Thing ⊑ Publication publicationResearch ∃ publicationResearch.Thing ⊑ Publication ⊤ ⊑ ∀ publicationResearch.Research researchInterest researchProject ∃ researchProject.Thing ⊑ ResearchGroup ⊤ ⊑ ∀ researchProject.Research
DATALOG$^{\exists}$	Organization(X) :- orgPublication(X,Y). Publication(Y) :- orgPublication(X,Y). Publication(X) :- publicationAuthor(X,Y). Person(Y) :- publicationAuthor(X,Y). Publication(X) :- publicationDate(X,Y). Publication(X) :- publicationResearch(X,Y). Research(Y) :- publicationResearch(X,Y). ResearchGroup(X) :- researchProject(X,Y). Research(Y) :- researchProject(X,Y).
OWL	<owl:DatatypeProperty rdf:ID="name"> <rdfs:label>name</rdfs:label> </owl:DatatypeProperty> <owl:DatatypeProperty rdf:ID="officeNumber"> <rdfs:label>office room No.</rdfs:label> </owl:DatatypeProperty> <owl:ObjectProperty rdf:ID="orgPublication"> <rdfs:label>publishes</rdfs:label> <rdfs:domain rdf:resource="#Organization" /> <rdfs:range rdf:resource="#Publication" /> </owl:ObjectProperty> <owl:ObjectProperty rdf:ID="publicationAuthor"> <rdfs:label>was written by</rdfs:label> <rdfs:domain rdf:resource="#Publication" /> <rdfs:range rdf:resource="#Person" /> </owl:ObjectProperty> <owl:ObjectProperty rdf:ID="publicationDate"> <rdfs:label>was written on</rdfs:label> <rdfs:domain rdf:resource="#Publication" /> </owl:ObjectProperty> <owl:ObjectProperty rdf:ID="publicationResearch"> <rdfs:label>is about</rdfs:label> <rdfs:domain rdf:resource="#Publication" />

	<rdfs:range rdf:resource="#Research" /> </owl:ObjectProperty> <owl:DatatypeProperty rdf:ID="researchInterest"> <rdfs:label>is researching</rdfs:label> </owl:DatatypeProperty> <owl:ObjectProperty rdf:ID="researchProject"> <rdfs:label>has as a research project</rdfs:label> <rdfs:domain rdf:resource="#ResearchGroup" /> <rdfs:range rdf:resource="#Research" /> </owl:ObjectProperty>

PART18	
DL	softwareDocumentation ∃ softwareDocumentation.Thing ⊑ Software ⊤ ⊑ ∀ softwareDocumentation.Publication softwareVersion ∃ softwareVersion.Thing ⊑ Software subOrganizationOf TransitiveProperty(subOrganizationOf) ∃ subOrganizationOf.Thing ⊑ Organization ⊤ ⊑ ∀ subOrganizationOf.Organization takesCourse teacherOf ∃ teacherOf.Thing ⊑ Faculty ⊤ ⊑ ∀ teacherOf.Course teachingAssistantOf ∃ teachingAssistantOf.Thing ⊑ TeachingAssistant ⊤ ⊑ ∀ teachingAssistantOf.Course
DATALOG$^{\exists}$	Software(X) :- softwareDocumentation(X,Y). Publication(Y) :- softwareDocumentation(X,Y). Software(X) :- softwareVersion(X,Y). Organization(X) :- subOrganizationOf(X,Y). Organization(Y) :- subOrganizationOf(X,Y). subOrganizationOf(X,Z) :- subOrganizationOf(X,Y),subOrganizationOf(Y,Z). Faculty(X) :- teacherOf(X,Y). Course(Y) :- teacherOf(X,Y). TeachingAssistant(X) :- teachingAssistantOf(X,Y). Course(Y) :- teachingAssistantOf(X,Y).
OWL	<owl:ObjectProperty rdf:ID="softwareDocumentation"> <rdfs:label>is documented in</rdfs:label> <rdfs:domain rdf:resource="#Software" /> <rdfs:range rdf:resource="#Publication" /> </owl:ObjectProperty> <owl:ObjectProperty rdf:ID="softwareVersion"> <rdfs:label>is version</rdfs:label> <rdfs:domain rdf:resource="#Software" /> </owl:ObjectProperty> <owl:TransitiveProperty rdf:ID="subOrganizationOf"> <rdfs:label>is part of</rdfs:label>

	<rdfs:domain rdf:resource="#Organization" /> <rdfs:range rdf:resource="#Organization" /> </owl:TransitiveProperty> <owl:ObjectProperty rdf:ID="takesCourse"> <rdfs:label>is taking</rdfs:label> </owl:ObjectProperty> <owl:ObjectProperty rdf:ID="teacherOf"> <rdfs:label>teaches</rdfs:label> <rdfs:domain rdf:resource="#Faculty" /> <rdfs:range rdf:resource="#Course" /> </owl:ObjectProperty> <owl:ObjectProperty rdf:ID="teachingAssistantOf"> <rdfs:label>is a teaching assistant for</rdfs:label> <rdfs:domain rdf:resource="#TeachingAssistant" /> <rdfs:range rdf:resource="#Course" /> </owl:ObjectProperty>

PART19	
DL	telephone ∃ telephone ⊑ Person tenured ∃ tenured.Thing ⊑ Professor title ∃ title ⊑ Person undergraduateDegreeFrom undergraduateDegreeFrom ⊑ degreeFrom ∃ undergraduateDegreeFrom.Thing ⊑ Person ⊤ ⊑ ∀ undergraduateDegreeFrom.University worksFor worksFor ⊑ memberOf
DATALOG$^{\exists}$	Person(X) :- telephone(X,Y). Professor(X) :- tenured(X,Y). Person(X) :- title(X,Y). Person(X) :- undergraduateDegreeFrom(X,Y). University(Y) :- undergraduateDegreeFrom(X,Y). degreeFrom(X,Y) :- undergraduateDegreeFrom(X,Y). memberOf(X,Y) :- worksFor(X,Y).
OWL	<owl:DatatypeProperty rdf:ID="telephone"> <rdfs:label>telephone number</rdfs:label> <rdfs:domain rdf:resource="#Person" /> </owl:DatatypeProperty> <owl:ObjectProperty rdf:ID="tenured"> <rdfs:label>is tenured:</rdfs:label> <rdfs:domain rdf:resource="#Professor" /> </owl:ObjectProperty> <owl:DatatypeProperty rdf:ID="title"> <rdfs:label>title</rdfs:label> <rdfs:domain rdf:resource="#Person" /> </owl:DatatypeProperty>

	<owl:ObjectProperty rdf:ID="undergraduateDegreeFrom"> <rdfs:label>has an undergraduate degree from</rdfs:label> <rdfs:domain rdf:resource="#Person" /> <rdfs:range rdf:resource="#University" /> <rdfs:subPropertyOf rdf:resource="#degreeFrom"/> </owl:ObjectProperty> <owl:ObjectProperty rdf:ID="worksFor"> <rdfs:label>Works For</rdfs:label> <rdfs:subPropertyOf rdf:resource="#memberOf" /> </owl:ObjectProperty>