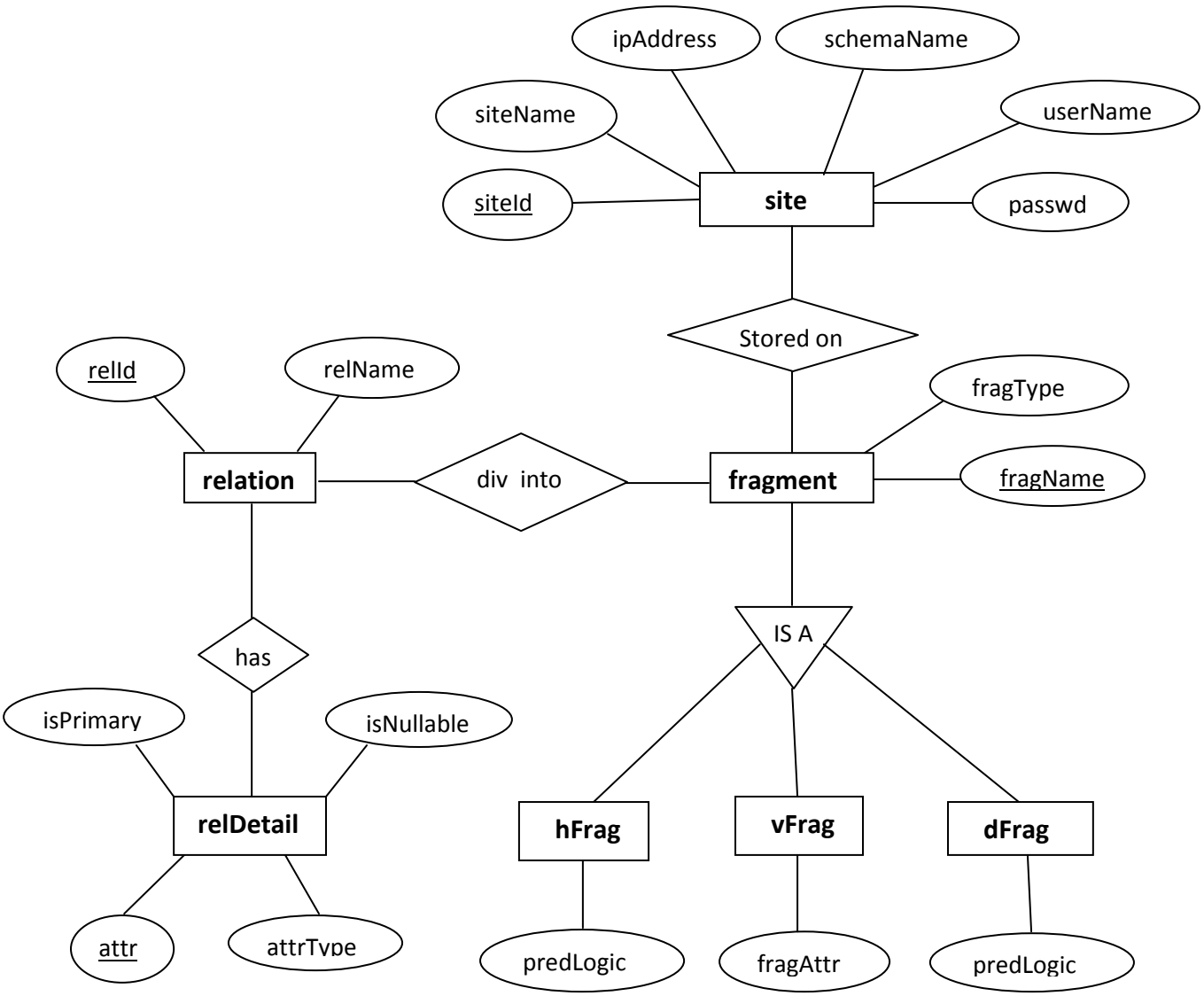
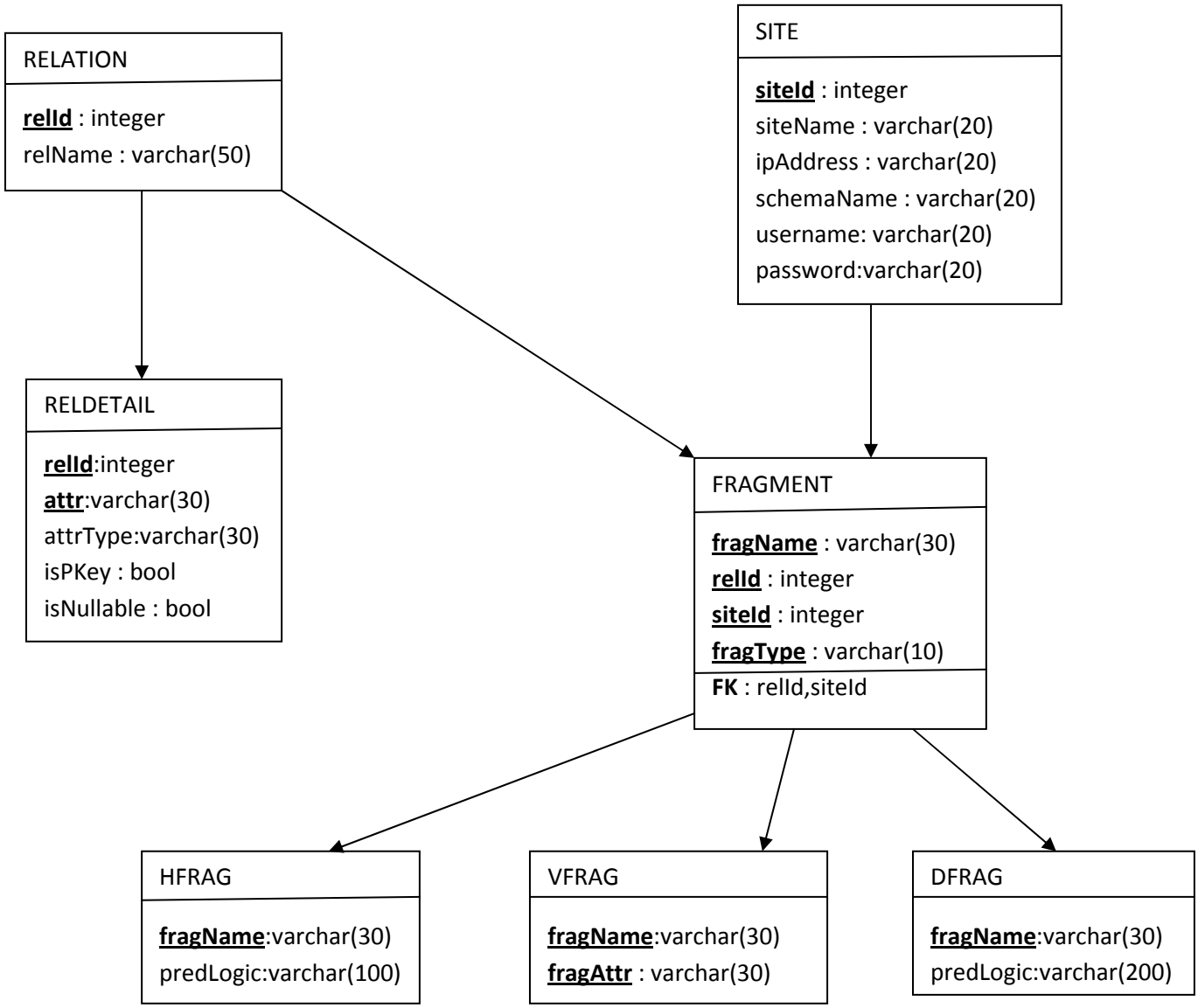
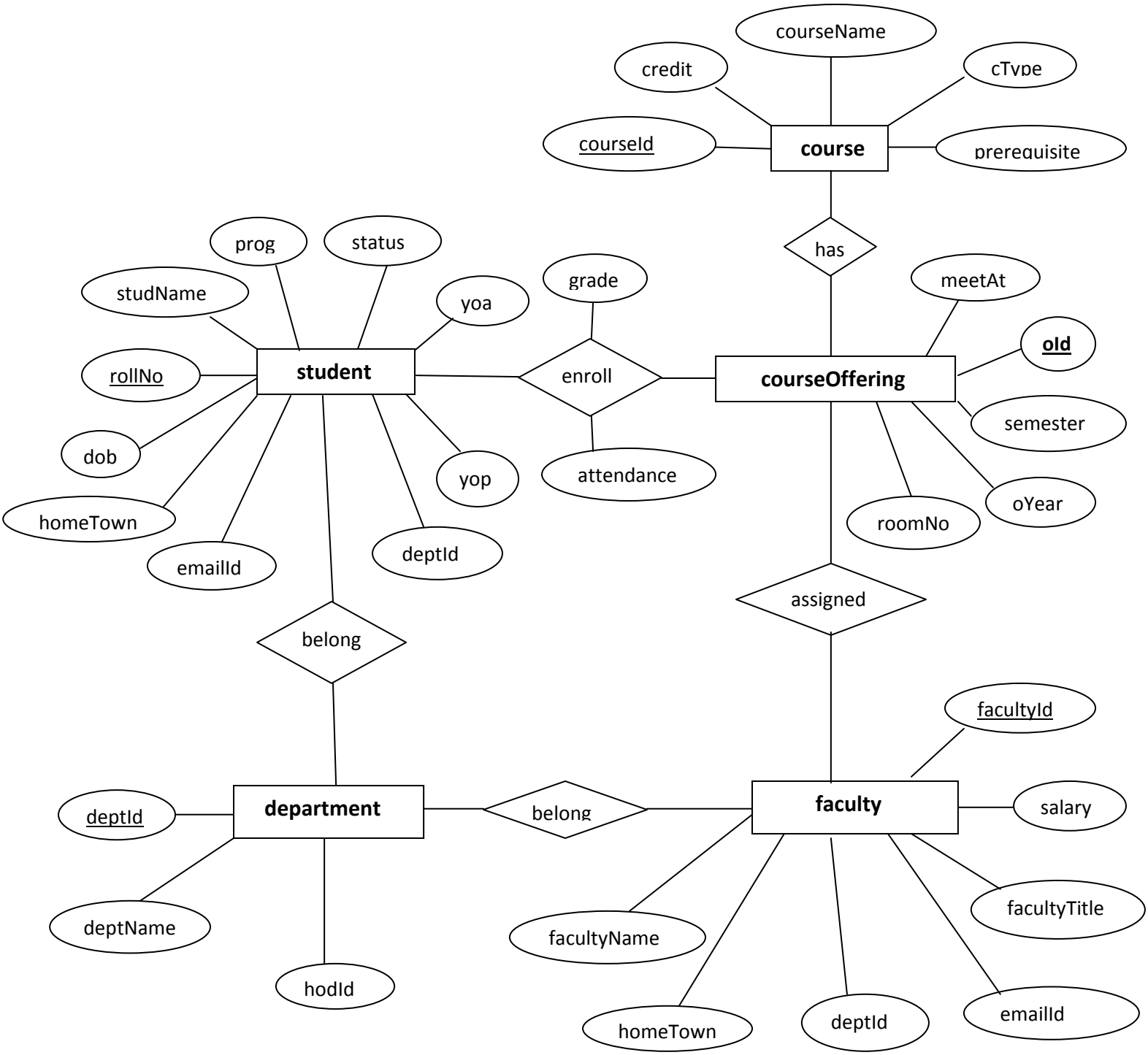
ER - DIAGRAM FOR SYSTEM CATALOG



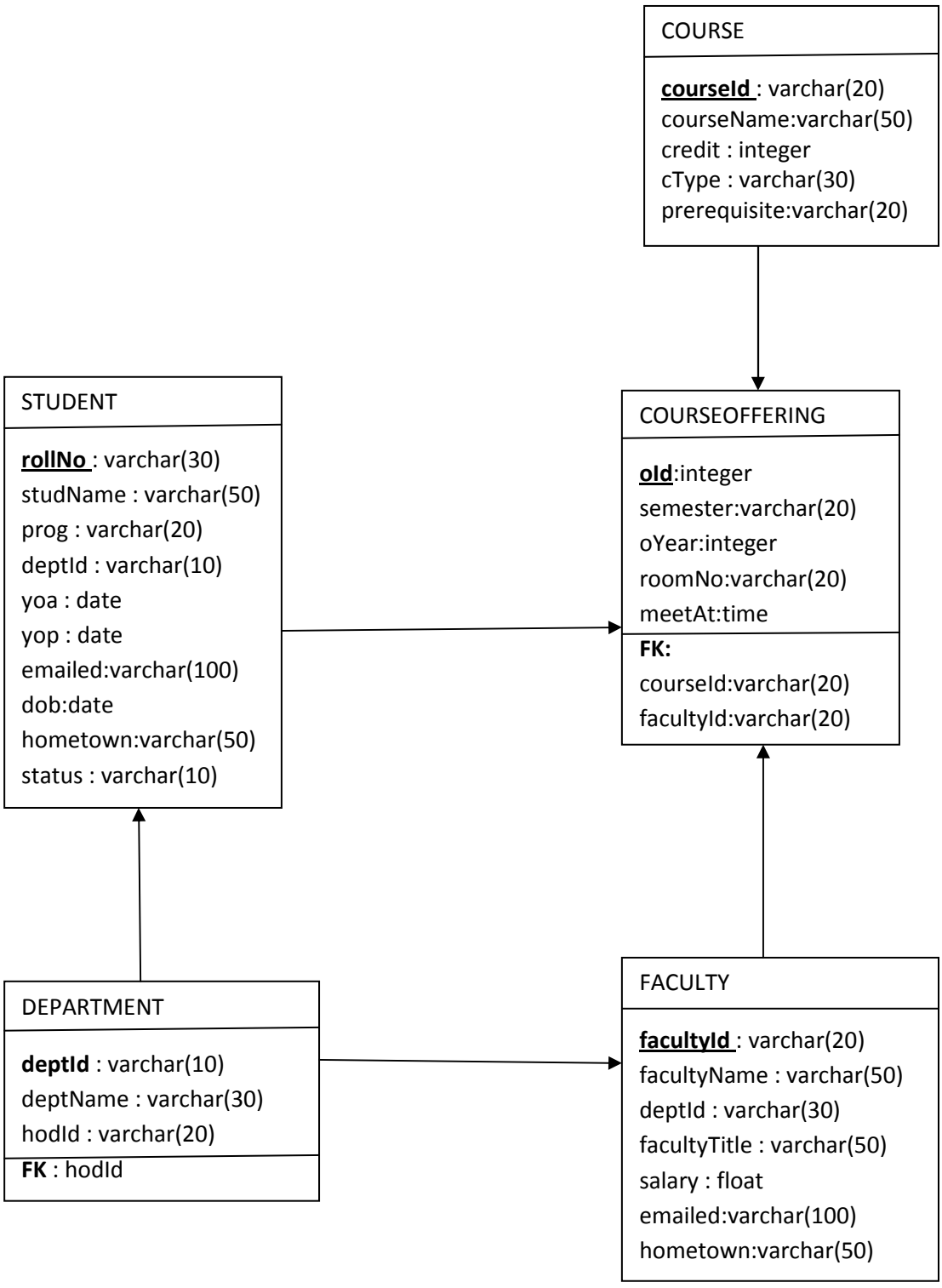
RELATIONAL MODEL FOR SYSTEM CATALOG



ER-DIAGRAM OF COLLEGE APPLICATION DATABASE



RELATIONAL MODEL OF COLLEGE APPLICATION DATABASE



FRAGMENTATION AND ALLOCATION SCHEMA

FRAGMENTATION SCHEMA:

3 Horizontal fragments of STUDENT table on value of attribute prog = “BTech”, prog= “MTech”, prog= “PhD” respectively.

1. Student1(rollNo,studName, prog = “BTech”, deptId, yoa, yop, emailed, dob,hometown,status)
2. Student2(rollNo rollNo,studName, prog = “MTech”, deptId, yoa, yop, emailed, dob,hometown,status)
3. Student3(rollNo,studName, prog = “PhD”, deptId, yoa, yop, emailed, dob,hometown,status)

3 Derived horizontal fragment obtained by semi join of Enrollment table with each of the horizontal fragment of ENROLLMENT table.

1. Enrollment1 = ENROLLMENT $\triangleright\!<_{rollNo=rollNo}$ Student1
2. Enrollment2 = ENROLLMENT $\triangleright\!<_{rollNo=rollNo}$ Student2
3. Enrollment3 = ENROLLMENT $\triangleright\!<_{rollNo=rollNo}$ Student3

2 Vertical fragment of FACULTY table

1. Faculty1(facultyId, facultyName, deptName,facultyTitle).
2. Faculty2(facultyId, salary,hometown,emailId).

3 Horizontal fragment of COURSE table on value of attribute cType=”foundation”, cType=”system”, cType=”elective”.

1. Course1(courseId,courseName, credit,cType=”foundation”, prerequisite)
2. Course2(courseId,courseName, credit,cType=”system”, prerequisite)
3. Course3(courseId,courseName, credit,cType=”elective”, prerequisite)

2 Vertical fragment of COURSEOFFERING table.

1. CourseOffering1(oId , courseId , semester, year)
2. CourseOffering2(oId , facultyId, roomNo, meetAt)

1 DEPARTMENT TABLE is not fragmented.

ALLOCATION SCHEMA

We have 3 sites for our DDBMS in this project allocation schema at various sites which are as follows:

SITE1:

Following Tables of Application database are at site1

1. student1 = $\sigma_{\text{prog = "BTech"}}$ (STUDENT)
2. enrollment1 = ENROLLMENT $\triangleright\!<_{\text{rollNo=rollNo}}$ (student1)
3. faculty1= $\Pi_{\text{facultyId,facultyName,deptName,title}}$ (FACULTY)
4. courseOffering1 = $\Pi_{\text{oId,courseId,semester,oYear}}$ (COURSEOFFERING)
5. course1 = $\sigma_{\text{cType = "foundation"}}$ (COURSE)
6. department(deptId, deptName, hodId)

SITE2:

Following Tables of Application database are at site2

1. student2 = $\sigma_{\text{prog = "MTech"}}$ (STUDENT)
2. enrollment2 = ENROLLMENT $\triangleright\!<_{\text{rollNo=rollNo}}$ (student2)
3. faculty2= $\Pi_{\text{facultyId,salary,hometown,emailed}}$(FACULTY)
4. course2 = $\sigma_{\text{cType = "system"}}$ (COURSE)
5. department(deptId, deptName, hodId)

SITE3:

Following Tables of Application database are at site3

1. student3 = $\sigma_{prog = \text{“PhD”}}$ (STUDENT)

2. enrollment3 = ENROLLMENT $\triangleright\!<_{rollNo=rollNo}$ (student3)

3. courseOffering2 = $\Pi_{oId,facultyId,roomNo,meetAt}$(COURSEOFFERING)

4. course3 = $\sigma_{cType = \text{“elective”}}$ (COURSE)

5. department(deptId, deptName, hodId)