

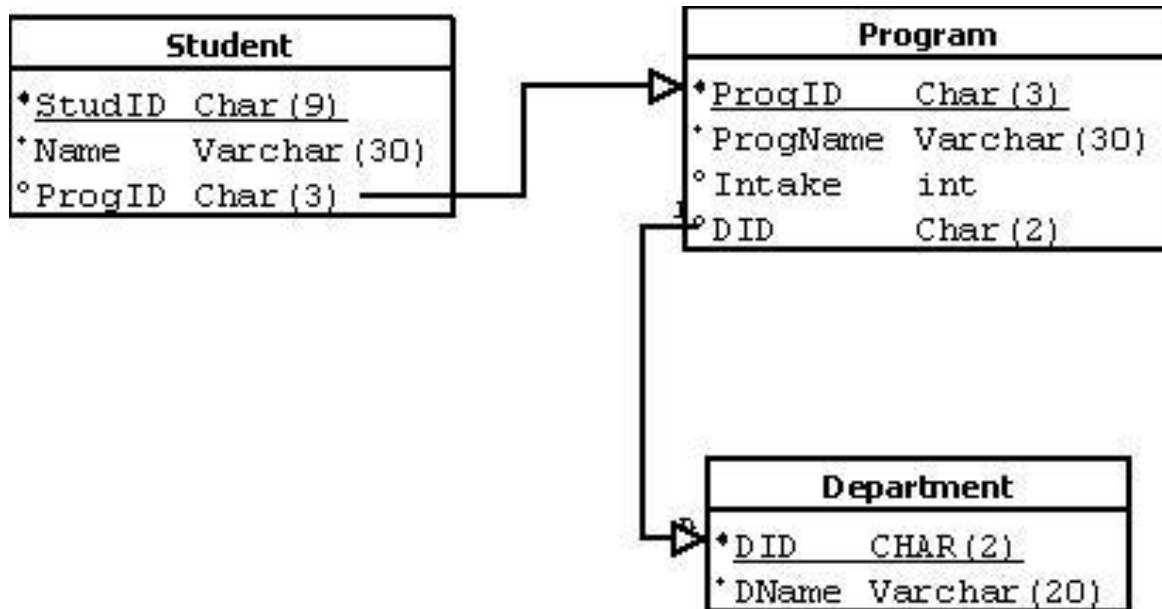
Schema Examples



pm_jat @ daiict



XIT Database – Relational Schema





XIT Database – Relation Instances

Student

StudentID	Name	ProgID	CPI
101	Rahul	BCS	7.5
102	Vikash	BIT	8.6
103	Shally	BEE	5.4
104	Alka	BIT	6.8
105	Ravi	BCS	6.5

Department

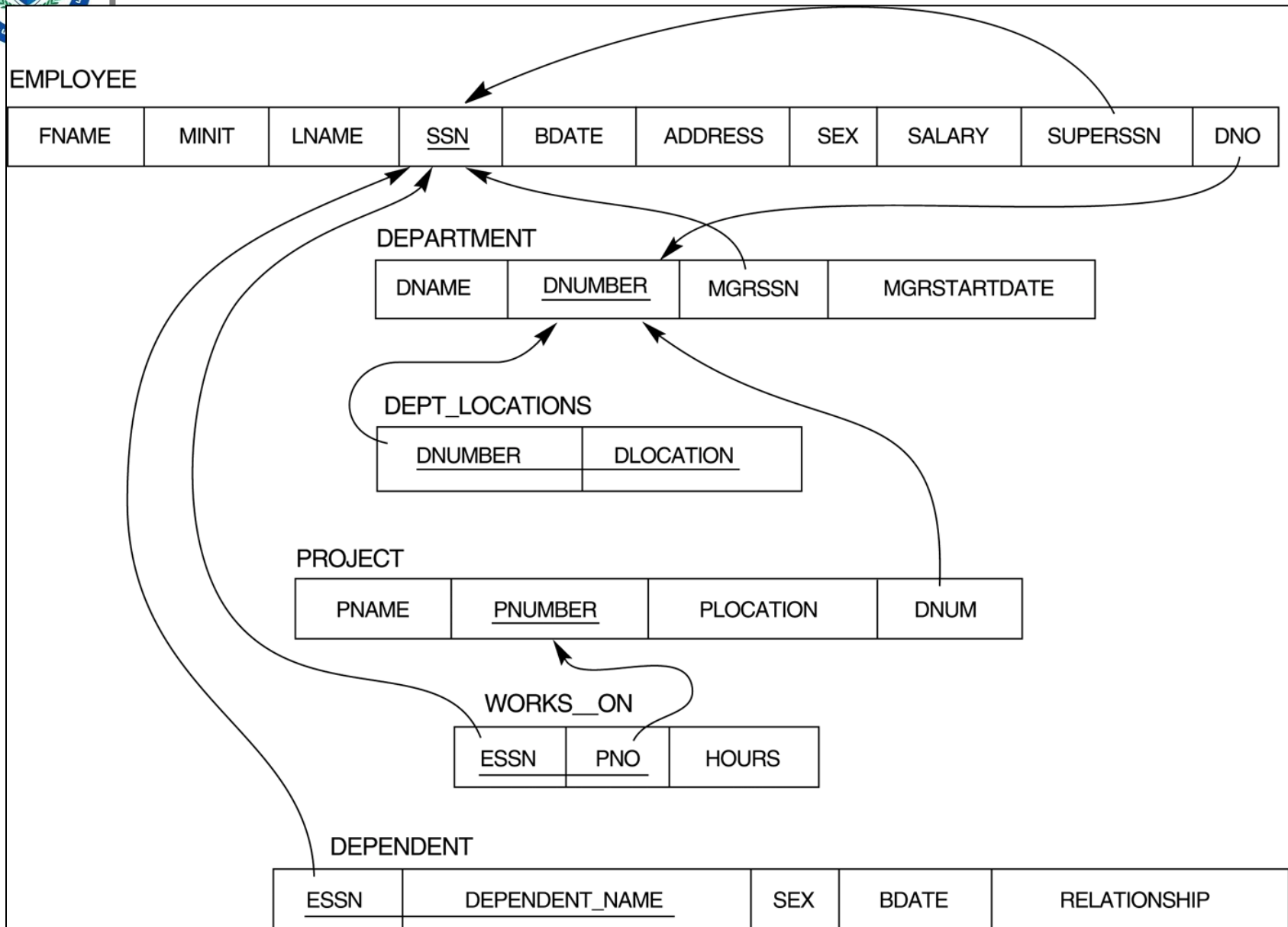
DID	DName
CS	Computer Engineering
EE	Electrical Engineering
ME	Mechanical Engineering

Program

PID	ProgName	Intake	DID
BCS	BTech(CS)	40	CS
BIT	BTech(IT)	30	CS
BEE	BTech(EI)	40	EE
BME	BTech(ME)	40	ME



Company (Database) Schema



Employee

fname character varying(100)	minit character varying(10)	lname character varying(100)	ssn numeric(9,0)	bdate date	addr character varying(200)	sex character(1)	salary numeric(8,2)	superssn numeric(10,0)	dno smallint
Jennifer	S	Wallace	987654321	1931-01-01	291 N. Zee Lane Houston, TX 77002	F	43000	888665555	4
Alicia	J	Zelaya	999887777	1958-02-02	3321 W. 18th St. Houston, TX 77008	F	25000	987654321	4
Ahmad	V	Jabbar	987987987	1959-03-03	980 R. 10th St. Houston, TX 77008	M	25000	987654321	4
Franklin	T	Wong	333445555	1945-04-04	638 E. 12th St. Houston, TX 77002	M	40000	888665555	5
Ramesh	K	Narayan	666884444	1952-05-05	975 S. 10th St. Houston, TX 77008	M	38000	333445555	5
Joyce	A	English	453453453	1962-06-06	5631 E. 12th St. Houston, TX 77002	F	25000	333445555	5
James	E	Borg	888665555	1927-07-07	450 W. 10th St. Houston, TX 77008	M	55000		1
John	B	Smith	123456789	1955-08-08	731 N. 10th St. Houston, TX 77002	M	33000	333445555	5

DLocation

Department

dname character varying(30)	dno smallint	mgrssn numeric(9,0)	mgrstartdate date	dno smallint	dlocation character varying(30)
	1			1	Houston
	4			4	Stafford
Research	5	333445555	1978-05-22	5	Bellaire
Administration	4	987654321	1985-01-01	5	Sugarland
Headquater	1	888665555	1971-06-19	5	Houston



Department

dname character varying(15)	dno smallint	mgrssn numeric(9,0)	mgrstartdate date
Research	5	333445555	1978-05-22
Administration	4	987654321	1985-01-01
Headquarter	1	888665555	1971-06-19

Projects

pname character varying(25)	pno smallint	plocation character varying(15)	dno smallint
ProductX	1	Bellaire	5
ProductY	2	Sugarland	5
ProductZ	3	Houston	5
Computerization	10	Stafford	4
Reorganization	20	Houston	1
Newbenefits	30	Stafford	4

Works_ON



essn numeric(9,0)	pno smallint	hours numeric(5,1)
123456789	1	32.5
123456789	2	7.5
666884444	3	40.0
453453453	1	20.0
453453453	2	20.0
333445555	2	10.0
333445555	3	10.0
333445555	10	10.0
333445555	20	10.0
333445555	1	32.5
999887777	30	30.0
999887777	10	10.0
987987987	10	35.0
987987987	30	5.0
987654321	30	20.0
987654321	20	15.0
888665555	20	

Employee

fname character varying(20)	minit character(1)	lname character varying(20)	ssn numeric(9,0)	bdate date
Jennifer	S	Wallace	987654321	1938-12-01
Alicia	J	Zelaya	999887777	1952-02-19
Ahmad	V	Jabbar	987987987	1953-03-09
Franklin	T	Wong	333445555	1942-08-18
Ramesh	K	Narayan	666884444	1957-07-23
Joyce	A	English	453453453	1962-08-06
James	E	Borg	888665555	1927-08-17
John	B	Smith	123456789	1958-12-08

Projects

pname character varying(20)	pno smallint	pchar character(1)
ProductX	1	B
ProductY	2	S
ProductZ	3	H
Computerization	10	S
Reorganization	20	H
Newbenefits	30	S

Dependents

essn numeric(9,0)	dependent_name character varying(20)	sex character(1)	bdate date	relationship character var
333445555	Alice	F	1976-	DAUGHTER
333445555	Theodore	M	1973-	SON
333445555	Joy	F	1948-	SPOUSE
987654321	Abner	M	1932-	SPOUSE
123456789	Michael	M	1978-	SON
123456789	Alice	F	1978-	DAUGHTER
123456789	Elizabeth	F	1957-	SPOUSE

Employee

fname character \	minit chara	lname character	ssn numeric(9,0)	bda dat
Jennifer	S	Wallace	987654321	193
Alicia	J	Zelaya	999887777	195
Ahmad	V	Jabbar	987987987	195
Franklin	T	Wong	333445555	194
Ramesh	K	Narayan	666884444	195
Joyce	A	English	453453453	196
James	E	Borg	888665555	192
John	B	Smith	123456789	195



DA-Acad schema

Student(StudetID, StdName, ProgID, Batch)

Course(CourseNo, CourseName, Credit)

Faculty(FacultyID, FacultyName)

Offers(AcadYear, Semester, CourseNo, FacultyID)

Registers(StudetID, AcadYear, Semester, CourseNo, grade)

Result(StudetID, AcadYear, SemesterType, SPI, CPI)

Semester(AcadYear, SemesterType)

==> Observe Keys here?

==> What are Foreign Keys here?



DA-ACad

CourseOffering

acadyear	semester	courseno	instructorid
integer	character va	character v	character var
2007	Autumn	CS101	I0005
2007	Winter	CS102	I0005
2007	Summer	CS103	I0007

Instructor

instructorid	instructorname
character vary	character varying (30)
I0005	P M Jat
I0007	Sanjay Srivastava

Course

courseno	coursename	credit
character varying (5)	character varying (35)	numeric (3,1)
CS101	C Programming	4.0
CS102	Algorithm	4.0
CS103	Basic Computers	3.0
CS104	Probability	3.0
CS105	Calculus	3.0



CourseOffering

acadyear integer	semester character va	courseno character v	instructorid character var
2007	Autumn	CS101	I0005
2007	Winter	CS102	I0005
2007	Summer	CS103	I0007

CourseRegistration

studentid character var	acadyear integer	semester character va	courseno character va	grade charac
200711001	2007	Autumn	CS101	AA
200711001	2007	Winter	CS102	CC
200711001	2007	Summer	CS103	AA
200711002	2007	Autumn	CS101	AA
200711002	2007	Winter	CS102	CC
200711002	2007	Summer	CS103	CC
200711003	2007	Autumn	CS101	AA
200711003	2007	Winter	CS102	CC



DA-Acad schema (FKs)

Offers: **CourseNo** refers to Course(CourseNo)

Offers: **FacultyID** refers to Faculty(FacultyID)

Registers: **StudetID** refers to Student(StudetID)

Registers: (**AcadYear, Semester, CourseNo**) refers to
Offers(AcadYear, Semester, CourseNo)

Result: StudetID refers to Student(StudetID)

Result(AcadYear, SemesterType)

refers to Semester(AcadYear, SemesterType)



Schema HoR #1

STUDENT(id, name, email, prog_code, batch, cpi)

//Batch is like 2009, 2010, or so; Progcode is like '01' for BTech, or so

ROOM(rno, wing, floor)

//floors are like 0 (Ground), 1(First), and 2 (Second)

ALLOT(sid, rno)

//Record of all allotments is stored in this relation. Students (sid) not having entry in this relation means-they are not residing in the HoR

HMC(sid, wing, Floor)

//Key SID and (Wing, Floor)



Schema HoR #2

STUDENT(id, name, email, prog_code, batch, cpi)

//Batch is like 2009, 2010, or so; Progcode is like '01' for BTech, or so

CoursesTaken(stud id, course no, sem, acad yr, grade)

Result(stud id, sem, acad yr, SPI, CPI)

ROOM(rno, wing, floor)

//floors are like 0 (Ground), 1(First), and 2 (Second)

ALLOT(sid, rno)

//Record of all allotments is stored in this relation. Students (sid) not having entry in this relation means-they are not residing in the HoR

SBG(sid, Committee, Role)

//sid is student id of sbg member, and role can be like convener, or member, committee is name of committee like CMC, or HMC, or so



Simplified Company schema

EMPLOYEE (ssn, ename, bdate, dno, gender, superssn)

Foreign Keys: dno REFERENCES department (dno),

Foreign Key: superssn REFERENCES employee (ssn)

DEPARTMENT (dno, dname, mgrssn, mgrstartdate)

Foreign Keys: mgrssn REFERENCES employee (essn)

DEP_LOCATIONS (dno, dlocation)

Foreign Keys: dno REFERENCES department (dno),

PROJECT (pno, pname, plocation, dno)

Foreign Keys: dno REFERENCES department (dno),

WORKS_ON (essn, pno, hours)

Foreign Keys: essn REFERENCES employee (essn)

Foreign Keys: pno REFERENCES project (pno)

DEPENDENT (essn, dep_name, gender, bdate, relationship)

Foreign Keys: essn REFERENCES employee (essn)



ename character varying(20)	ssn integer	bdate date	gen character(1)	salary numeric(8,2)	super integer	dno smallint
James	105	1927-11-17	M	55000		1
Franklin	102	1945-12-08	M	40000	105	5
Jennifer	106	1931-09-13	F	43000	105	4
John	101	1955-02-19	M	30000	102	5
Alicia	108	1958-04-19	F	25000	106	4
Ramesh	104	1952-08-17	M	38000	102	5
Joyce	103	1962-04-19	F	25000	102	5
Ahmad	107	1959-01-20	M	25000	106	4

dname character varying(20)	dno smallint	mgrssn integer	mgrstartdate date
Research	5	102	1978-05-22
Administration	4	106	1985-01-01
Headquater	1	105	1971-06-19

dno smallint	dlocation character varying(20)
1	Houston
4	Stafford
5	Bellaire
5	Sugarland
5	Houston

pname character varying(20)	pno smallint	plocation character varying(20)	dno smallint
ProductX	1	Bellaire	5
ProductY	2	Sugarland	5
ProductZ	3	Houston	5
Computerization	10	Stafford	4
Reorganization	20	Houston	1
Newbenefits	30	Stafford	4

dname character varying(20)	dno smallint	mgrssn integer	mgrstartdate date
Research	5	102	1978-05-22
Administration	4	106	1985-01-01
Headquater	1	105	1971-06-19

essn integer	pno smallint	hours numeric
101	1	32.5
101	2	7.5
104	3	40.0
103	1	20.0
103	2	20.0
102	2	10.0
102	3	10.0
102	10	10.0
102	20	10.0
102	1	32.5
108	30	30.0
108	10	10.0
107	10	35.0
107	30	5.0
106	30	20.0
106	20	15.0
105	20	



essn integers	dependent_name character variable	gender character	birthdate date	relationship character variable
102	Alice	F	1976-	DAUGHTER
102	Theodore	M	1973-	SON
102	Joy	F	1948-	SPOUSE
106	Abner	M	1932-	SPOUSE
101	Michael	M	1978-	SON
101	Alice	F	1978-	DAUGHTER
101	Elizabeth	F	1957-	SPOUSE