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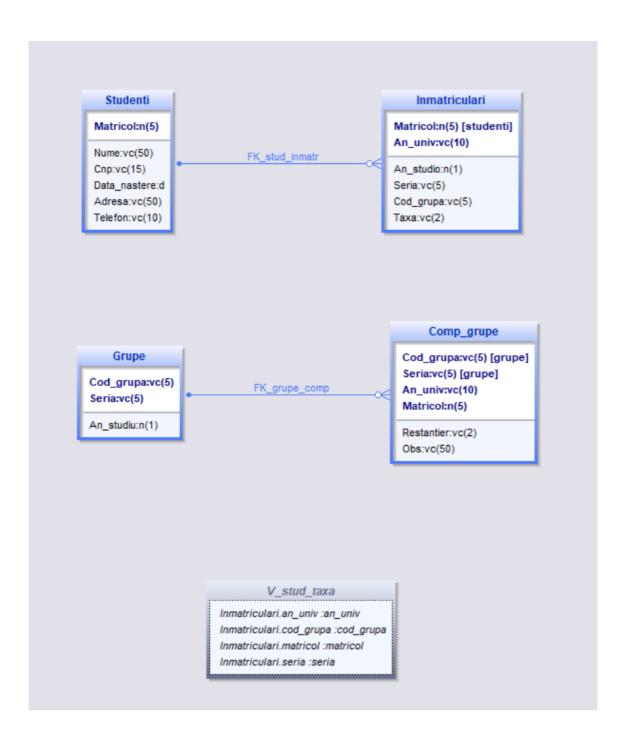
Lab 01

Ownership

- Student: Marius Vintila
- Group: 341C5

Course

XCASE Diagram



SQL Script

```
CREATE TABLE Studenti

(

Matricol NUMBER(5) NOT NULL,

Nume VARCHAR2(50) NULL,

Cnp VARCHAR2(15) NULL,

Data_nastere DATE NULL,

Adresa VARCHAR2(50) NULL,

Telefon VARCHAR2(10) NULL,
```

```
CONSTRAINT PK_Studenti PRIMARY KEY (Matricol) NOT DEFERRABLE Initially IMMEDIATE
    USING INDEX
    PCTFREE 10
    INITRANS 2
    MAXTRANS 255
    STORAGE
      INITIAL 64K
     NEXT OK
     MINEXTENTS 1
      MAXEXTENTS 2147483645
      PCTINCREASE 0
    PCTFREE 10
    PCTUSED 40
    INITRANS 1
    MAXTRANS 255
    STORAGE
     INITIAL 64K
     NEXT OK
     MINEXTENTS 1
     MAXEXTENTS 2147483645
     PCTINCREASE 0
CREATE TABLE Comp_grupe
   Cod_grupa VARCHAR2(5) NOT NULL ,
   Seria VARCHAR2(5) NOT NULL ,
    An univ VARCHAR2(10) NOT NULL ,
    Matricol NUMBER(5) NOT NULL ,
   Restantier VARCHAR2(2) NULL ,
   Obs VARCHAR2(50) NULL
    CONSTRAINT PK_Comp_grupe PRIMARY KEY (Cod_grupa, Seria, An_univ, Matricol) NOT
DEFERRABLE Initially IMMEDIATE
   USING INDEX
    PCTFREE 10
    INITRANS 2
    MAXTRANS 255
    STORAGE
      INITIAL 64K
     NEXT OK
     MINEXTENTS 1
      MAXEXTENTS 2147483645
      PCTINCREASE 0
    PCTFREE 10
```

```
PCTUSED 40
    INITRANS 1
    MAXTRANS 255
    STORAGE
     INITIAL 64K
     NEXT OK
     MINEXTENTS 1
     MAXEXTENTS 2147483645
     PCTINCREASE 0
CREATE TABLE Inmatriculari
   Matricol NUMBER(5) NOT NULL ,
   An univ VARCHAR2(10) NOT NULL ,
    An_studio NUMBER(1) NULL ,
    Seria VARCHAR2(5) NULL ,
    Cod_grupa VARCHAR2(5) NULL ,
    Taxa VARCHAR2(2) NULL
    CONSTRAINT PK Inmatriculari PRIMARY KEY (Matricol, An univ) NOT DEFERRABLE
Initially IMMEDIATE
   USING INDEX
    PCTFREE 10
    INITRANS 2
    MAXTRANS 255
    STORAGE
      INITIAL 64K
     NEXT OK
     MINEXTENTS 1
     MAXEXTENTS 2147483645
      PCTINCREASE 0
    PCTFREE 10
    PCTUSED 40
    INITRANS 1
    MAXTRANS 255
    STORAGE
     INITIAL 64K
     NEXT OK
     MINEXTENTS 1
     MAXEXTENTS 2147483645
     PCTINCREASE 0
CREATE TABLE Grupe
(
```

```
Cod_grupa VARCHAR2(5) NOT NULL ,
    Seria VARCHAR2(5) NOT NULL ,
    An studiu NUMBER(1) NULL
    CONSTRAINT PK Grupe PRIMARY KEY (Cod grupa, Seria) NOT DEFERRABLE Initially
IMMEDIATE
   USING INDEX
    PCTFREE 10
    INITRANS 2
    MAXTRANS 255
    STORAGE
      INITIAL 64K
     NEXT OK
     MINEXTENTS 1
     MAXEXTENTS 2147483645
     PCTINCREASE 0
    PCTFREE 10
    PCTUSED 40
    INITRANS 1
    MAXTRANS 255
    STORAGE
     INITIAL 64K
      NEXT OK
     MINEXTENTS 1
     MAXEXTENTS 2147483645
     PCTINCREASE 0
ALTER TABLE Comp grupe ADD
    CONSTRAINT FK grupe comp FOREIGN KEY
    ( Cod_grupa , Seria )
    REFERENCES Grupe
    ( Cod_grupa , Seria )
    NOT DEFERRABLE Initially IMMEDIATE
ALTER TABLE Inmatriculari ADD
    CONSTRAINT FK stud inmatr FOREIGN KEY
    ( Matricol )
    REFERENCES Studenti
    ( Matricol )
    NOT DEFERRABLE Initially IMMEDIATE
```

```
CREATE OR REPLACE FORCE VIEW V_stud_taxa

AS SELECT ALL Inmatriculari.An_univ , Inmatriculari.Cod_grupa ,

Inmatriculari.Matricol ,

Inmatriculari.Seria

FROM Inmatriculari Inmatriculari

WHERE Inmatriculari.An_univ='2020/2021' and Inmatriculari.Taxa='DA'

/
```

Lab

I chose to use a standard that removes vowels from table and field names; Personal preference. I would've also added some lookup tables for certain values but the restriction was of only 3 tables, so I'll have to populate the tables with repeated values

XCASE Diagram





Legend

- DSTRBTR Distributor
- NAM Name
- ADDR_LIN Address Line
- CTRY_CD Country Code
- CMPTR Computer
- PCE Piece
- MTHR_BRD Mother Board
- TYP Type
- PRC Price

SQL Script

```
CREATE TABLE DSTRBTR
  DSTRBTR ID VARCHAR2(5) NOT NULL ,
  NAM VARCHAR2 (50) NULL ,
  ADDR LIN 1 VARCHAR2(50) NULL ,
 ADDR LIN 2 VARCHAR2(50) NULL ,
  CTRY_CD VARCHAR2(3) NULL
  CONSTRAINT PK_DSTRBTR PRIMARY KEY (DSTRBTR_ID) NOT DEFERRABLE Initially
IMMEDIATE
  USING INDEX
  PCTFREE 10
  INITRANS 2
  MAXTRANS 255
  STORAGE
    INITIAL 64K
   NEXT OK
   MINEXTENTS 1
   MAXEXTENTS 2147483645
   PCTINCREASE 0
  PCTFREE 10
  PCTUSED 40
  INITRANS 1
  MAXTRANS 255
  STORAGE
    INITIAL 64K
    NEXT OK
    MINEXTENTS 1
   MAXEXTENTS 2147483645
   PCTINCREASE 0
CREATE TABLE CMPTER
  CMPTR ID VARCHAR2(10) NOT NULL ,
  DSTRBTR ID VARCHAR2(5) NOT NULL ,
  CPU_PCE_ID VARCHAR2(10) NULL ,
  GPU PCE ID VARCHAR2(10) NULL ,
  RAM_1_PCE_ID VARCHAR2(10) NULL ,
  RAM 2 PCE ID VARCHAR2(10) NULL ,
  MTHR BRD PCE ID VARCHAR2(10) NULL
  CONSTRAINT PK_CMPTER PRIMARY KEY (CMPTR_ID, DSTRBTR_ID) NOT DEFERRABLE
Initially IMMEDIATE
  USING INDEX
  PCTFREE 10
 INITRANS 2
```

```
MAXTRANS 255
   STORAGE
    INITIAL 64K
   NEXT OK
   MINEXTENTS 1
   MAXEXTENTS 2147483645
   PCTINCREASE 0
  PCTFREE 10
  PCTUSED 40
  INITRANS 1
  MAXTRANS 255
  STORAGE
   INITIAL 64K
   NEXT OK
   MINEXTENTS 1
   MAXEXTENTS 2147483645
   PCTINCREASE 0
CREATE TABLE PCE
(
 PCE ID VARCHAR2(10) NOT NULL ,
  NAM VARCHAR2 (100) NULL ,
  TYP VARCHAR2(30) NULL ,
  PRC FLOAT (10) NULL
  CONSTRAINT PK_PCE PRIMARY KEY (PCE_ID) NOT DEFERRABLE Initially IMMEDIATE
  USING INDEX
  PCTFREE 10
  INITRANS 2
  MAXTRANS 255
  STORAGE
   INITIAL 64K
   NEXT OK
   MINEXTENTS 1
   MAXEXTENTS 2147483645
   PCTINCREASE 0
)
  PCTFREE 10
  PCTUSED 40
  INITRANS 1
  MAXTRANS 255
  STORAGE
```

INITIAL 64K NEXT OK

```
MINEXTENTS 1
   MAXEXTENTS 2147483645
   PCTINCREASE 0
ALTER TABLE CMPTER ADD
  CONSTRAINT FK_DSTRBTR_CMPTER FOREIGN KEY
  ( DSTRBTR ID )
  REFERENCES DSTRBTR
  ( DSTRBTR_ID )
  {f NOT} DEFERRABLE Initially IMMEDIATE
ALTER TABLE CMPTER ADD
  CONSTRAINT FK_PCE_CPU FOREIGN KEY
  ( CPU PCE ID )
  REFERENCES PCE
  ( PCE_ID )
  \textbf{NOT} \text{ DEFERRABLE Initially IMMEDIATE}
ALTER TABLE CMPTER ADD
  CONSTRAINT FK_PCE_GPU FOREIGN KEY
  ( GPU_PCE_ID )
  REFERENCES PCE
  ( PCE_ID )
  NOT DEFERRABLE Initially IMMEDIATE
ALTER TABLE CMPTER ADD
  CONSTRAINT FK_PCE_RAM_1 FOREIGN KEY
  ( RAM_1_PCE_ID )
  REFERENCES PCE
  ( PCE_ID )
  NOT DEFERRABLE Initially IMMEDIATE
ALTER TABLE CMPTER ADD
  CONSTRAINT FK_PCE_RAM_2 FOREIGN KEY
  ( RAM_2_PCE_ID )
  REFERENCES PCE
```

```
( PCE ID )
  NOT DEFERRABLE Initially IMMEDIATE
)
ALTER TABLE CMPTER ADD
  CONSTRAINT FK PCE MTHR FOREIGN KEY
  ( MTHR BRD PCE ID )
  REFERENCES PCE
  ( PCE ID )
  NOT DEFERRABLE Initially IMMEDIATE
)
CREATE OR REPLACE FORCE VIEW CMPTR FULL DTL
AS SELECT ALL CMPTER.CMPTR_ID AS "Computer ID" , DSTRBTR.NAM AS "Distributor
    PCE.NAM AS "CPU Piece Name" , PCE 0.NAM AS "GPU Piece Name" ,
    PCE 1.NAM AS "Ram 1 Piece Name" , PCE 2.NAM AS "Ram 2 Piece Name" ,
    PCE 3.NAM AS "Mother Board Piece Name"
 {f FROM} CMPTER CMPTER , DSTRBTR DSTRBTR , PCE PCE , PCE PCE 0 ,
    PCE PCE_1 , PCE PCE_2 , PCE PCE_3
 WHERE CMPTER.DSTRBTR ID = DSTRBTR.DSTRBTR ID
 AND CMPTER.CPU PCE ID = PCE.PCE ID
 AND CMPTER.GPU PCE ID = PCE 0.PCE ID
 AND CMPTER.RAM 1 PCE ID = PCE 1.PCE ID
 AND CMPTER.RAM 2 PCE ID = PCE 2.PCE ID
 AND CMPTER.MTHR BRD PCE ID = PCE 3.PCE ID
 ORDER BY "Distributor Name" , "Computer ID"
```

Data insert and contraint testing

Distributor

Insert Commands

```
insert into DSTRBTR (DSTRBTR_ID, NAM, ADDR_LIN_1, ADDR_LIN_2, CTRY_CD) VALUES
('00001', 'Asus', 'Beitou District, Taipei, Taiwan', NULL, 'TW');
insert into DSTRBTR (DSTRBTR_ID, NAM, ADDR_LIN_1, ADDR_LIN_2, CTRY_CD) VALUES
('00002', 'Kingston', 'Fountain Valley, California, Statele Unite', NULL, 'US');
insert into DSTRBTR (DSTRBTR_ID, NAM, ADDR_LIN_1, ADDR_LIN_2, CTRY_CD) VALUES
('00003', 'Intel', 'Santa Clara, California, Statele Unite', NULL, 'US');
insert into DSTRBTR (DSTRBTR_ID, NAM, ADDR_LIN_1, ADDR_LIN_2, CTRY_CD) VALUES
('00004', 'Nvidia', 'Santa Clara, California, Statele Unite', '2788 San Tomas
Expressway Santa Clara, CA 95051', 'US');
insert into DSTRBTR (DSTRBTR_ID, NAM, ADDR_LIN_1, ADDR_LIN_2, CTRY_CD) VALUES
('00004', 'AMD', 'Santa Clara, California, Statele Unite', '2788 San Tomas Expressway
Santa Clara, CA 95051', 'US');
```

Insert Commands Results

SQL Worksheet

```
insert into DSTRBTR (DSTRBTR_ID, NAM, ADDR_LIN_1, ADDR_LIN_2, CTRY_CD) VALUES
('00001', 'Asus', 'Beitou District, Taipei, Taiwan', NULL, 'TW');
insert into DSTRBTR (DSTRBTR_ID, NAM, ADDR_LIN_1, ADDR_LIN_2, CTRY_CD) VALUES
('00002', 'Kingston', 'Fountain Valley, California, Statele Unite', NULL, 'US');
insert into DSTRBTR (DSTRBTR_ID, NAM, ADDR_LIN_1, ADDR_LIN_2, CTRY_CD) VALUES
('00003', 'Intel', 'Santa Clara, California, Statele Unite', NULL, 'US');
insert into DSTRBTR (DSTRBTR_ID, NAM, ADDR_LIN_1, ADDR_LIN_2, CTRY_CD) VALUES
('00004', 'NVidia', 'Santa Clara, California, Statele Unite', '2788 San Tomas Expressway Santa Clara, CA 95051', 'US');
insert into DSTRBTR (DSTRBTR_ID, NAM, ADDR_LIN_1, ADDR_LIN_2, CTRY_CD) VALUES
('00004', 'AMD', 'Santa Clara, California, Statele Unite', '2788 San Tomas Expressway Santa Clara, CA 95051', 'US');

10 ('00004', 'AMD', 'Santa Clara, California, Statele Unite', '2788 San Tomas Expressway Santa Clara, CA 95051', 'US');

11

1 row(s) inserted.

1 row(s) inserted.

ORA-00001: unique constraint (SQL_ROCIPUNOUBTGFEXQUXDLOTSNY.PK_DSTRBTR) violated ORA-06512: at "SYS.DBMS_SQL", line 1721
```

Select Results

SQL Worksheet

DSTRBTR_ID	NAM	ADDR_LIN_1	ADDR_LIN_2	CTRY_CD
00001	Asus	Beitou District, Taipei, Taiwan	-	TW
00002	Kingston	Fountain Valley, California, Statele Unite	-	US
00003	Intel	Santa Clara, California, Statele Unite	-	US
00004	Nvidia	Santa Clara, California, Statele Unite	2788 San Tomas Expressway Santa Clara, CA 95051	US

Testing scenario

4 rows selected.

• Attempted to insert the same PK in another command

Piece

Insert Commands

```
INSERT INTO PCE (PCE_ID, NAM, TYP, PRC) VALUES
('0000000001', 'HyperX Predator Black 16GB, DDR4, 3200MHz, CL16, 1.35V', 'RAM',
95.79);
INSERT INTO PCE (PCE_ID, NAM, TYP, PRC) VALUES
('0000000002', 'HyperX Predator RGB 32GB DDR4 3200MHz CL16', 'RAM', 324.99);
INSERT INTO PCE (PCE_ID, NAM, TYP, PRC) VALUES
('0000000003', 'ASUS Phoenix GeForce GTX 1650 OC, 4GB GDDR5, 128-bit', 'GPU', 399.99);
INSERT INTO PCE (PCE_ID, NAM, TYP, PRC) VALUES
('00000000004', 'Intel Core i9-10900K Comet Lake, 3.70GHz, 20MB, Socket 1200', 'CPU',
```

```
500.00);

INSERT INTO PCE (PCE_ID, NAM, TYP, PRC) VALUES

('0000000005', 'ASUS TUF GAMING B460-PLUS, Socket 1200', 'Mother Board', 330.79);

INSERT INTO PCE (PCE_ID, NAM, TYP, PRC) VALUES

('0000000001', 'HyperX Predator Black 16GB, DDR4, 3200MHz, CL16, 1.35V', 'RAM', 95.79);
```

Insert Commands Results

SQL Worksheet

```
1 INSERT INTO PCE (PCE_ID, NAM, TYP, PRC) VALUES
2 ('000000001', 'HyperX Predator Black 16GB, DDR4, 3200MHz, CL16, 1.35V', 'RAM', 95.79);
3 INSERT INTO PCE (PCE_ID, NAM, TYP, PRC) VALUES
4 ('0000000002', 'HyperX Predator RGB 32GB DDR4 3200MHz CL16', 'RAM', 324.99);
5 INSERT INTO PCE (PCE_ID, NAM, TYP, PRC) VALUES
6 ('0000000003', 'ASUS Phoenix GeForce GTX 1650 OC, 4GB GDDR5, 128-bit', 'GPU', 399.99);
7 INSERT INTO PCE (PCE_ID, NAM, TYP, PRC) VALUES
8 ('0000000004', 'Intel Core i9-10900K Comet Lake, 3.70GHz, 20MB, Socket 1200', 'CPU', 500.00);
9 INSERT INTO PCE (PCE_ID, NAM, TYP, PRC) VALUES
10 ('0000000005', 'ASUS TUF GAMING B460-PLUS, Socket 1200', 'Mother Board', 330.79);
11 INSERT INTO PCE (PCE_ID, NAM, TYP, PRC) VALUES
12 ('0000000001', 'HyperX Predator Black 16GB, DDR4, 3200MHz, CL16, 1.35V', 'RAM', 95.79);

1 row(s) inserted.
1 row(s) inserted.
1 row(s) inserted.
ORA-00001: unique constraint (SQL_ROCIPUNOUBTGFEXQUXDLOTSNY.PK_PCE) violated ORA-06512: at "SYS.DBMS_SQL", line 1721
```

Select Results

PCE_ID	NAM	TYP	PRC
0000000001	HyperX Predator Black 16GB, DDR4, 3200MHz, CL16, 1.35V	RAM	95.79
0000000002	HyperX Predator RGB 32GB DDR4 3200MHz CL16	RAM	325
0000000003	ASUS Phoenix GeForce GTX 1650 OC, 4GB GDDR5, 128-bit	GPU	400
0000000004	Intel Core i9-10900K Comet Lake, 3.70GHz, 20MB, Socket 1200	CPU	500
0000000005	ASUS TUF GAMING B460-PLUS, Socket 1200	Mother Board	330.8

Download CSV

5 rows selected.

Testing scenario

Attempted to insert the same PK in another command

Computer

Insert Commands

```
INSERT INTO CMPTER (CMPTR_ID, DSTRBTR_ID, CPU_PCE_ID, GPU_PCE_ID, RAM_1_PCE_ID,
RAM_2_PCE_ID, MTHR_BRD_PCE_ID) VALUES
('0000000001', '00001', '00000000004', '00000000003', '00000000001', '00000000001',
'000000005');
INSERT INTO CMPTER (CMPTR_ID, DSTRBTR_ID, CPU_PCE_ID, GPU_PCE_ID, RAM_1_PCE_ID,
RAM_2_PCE_ID, MTHR_BRD_PCE_ID) VALUES
('0000000001', NULL, '0000000004', '0000000003', '0000000001', '0000000001',
'0000000005');
INSERT INTO CMPTER (CMPTR_ID, DSTRBTR_ID, CPU_PCE_ID, GPU_PCE_ID, RAM_1_PCE_ID,
RAM_2_PCE_ID, MTHR_BRD_PCE_ID) VALUES
('0000000001', '00001', '0000000004', '0000000003', '0000000001', '0000000001',
'0000000006');
```

Insert Commands Results

SQL Worksheet

Select Results

	CMPTR_ID	DSTRBTR_ID	CPU_PCE_ID	GPU_PCE_ID	RAM_1_PCE_ID	RAM_2_PCE_ID	MTHR_BRD_PCE_ID
	0000000001	00001	0000000004	0000000003	0000000001	0000000001	0000000005

Download CSV

Testing scenario

- Attempted to insert NULL in column part of PK
- Attempted to insert the same PK in another command
- Attempted to insert FK with inexisting value

Testing the View

SOL Worksheet



Computer ID	Distributor Name	CPU Piece Name	GPU Piece Name	Ram 1 Piece Name	Ram 2 Piece Name	Mother Board Piece Name	
0000000001	Asus	Intel Core 19:10900K Comet Lake, 3.70GHz, 20MB, Socket 1200	ASUS Phoenix GeForce GTX 1650 OC, 4GB GDDR5, 128-bit	HyperX Predator Black 1668, DDR4, 3200MHz, CL16, 1.35V	HyperX Predator Black 166B, DDR4, 3288MHz, CL16, 1.35V	ASUS TUF GAMING B460-PLUS, Socket 1200	
DownLoad CSV							