

Fakultet tehničkih nauka, Novi Sad

Predmet:

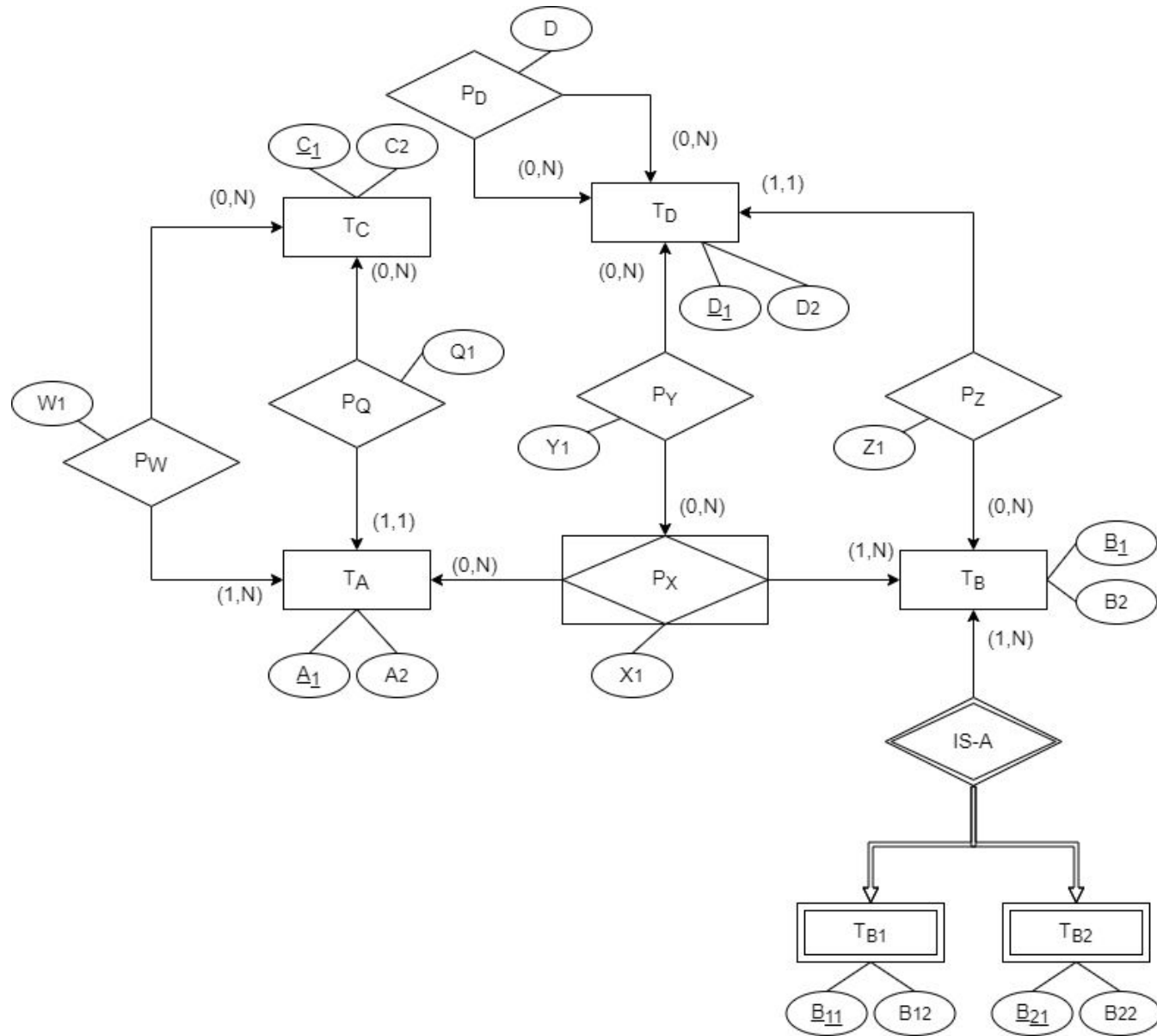
Informacioni sistemi i baze podataka

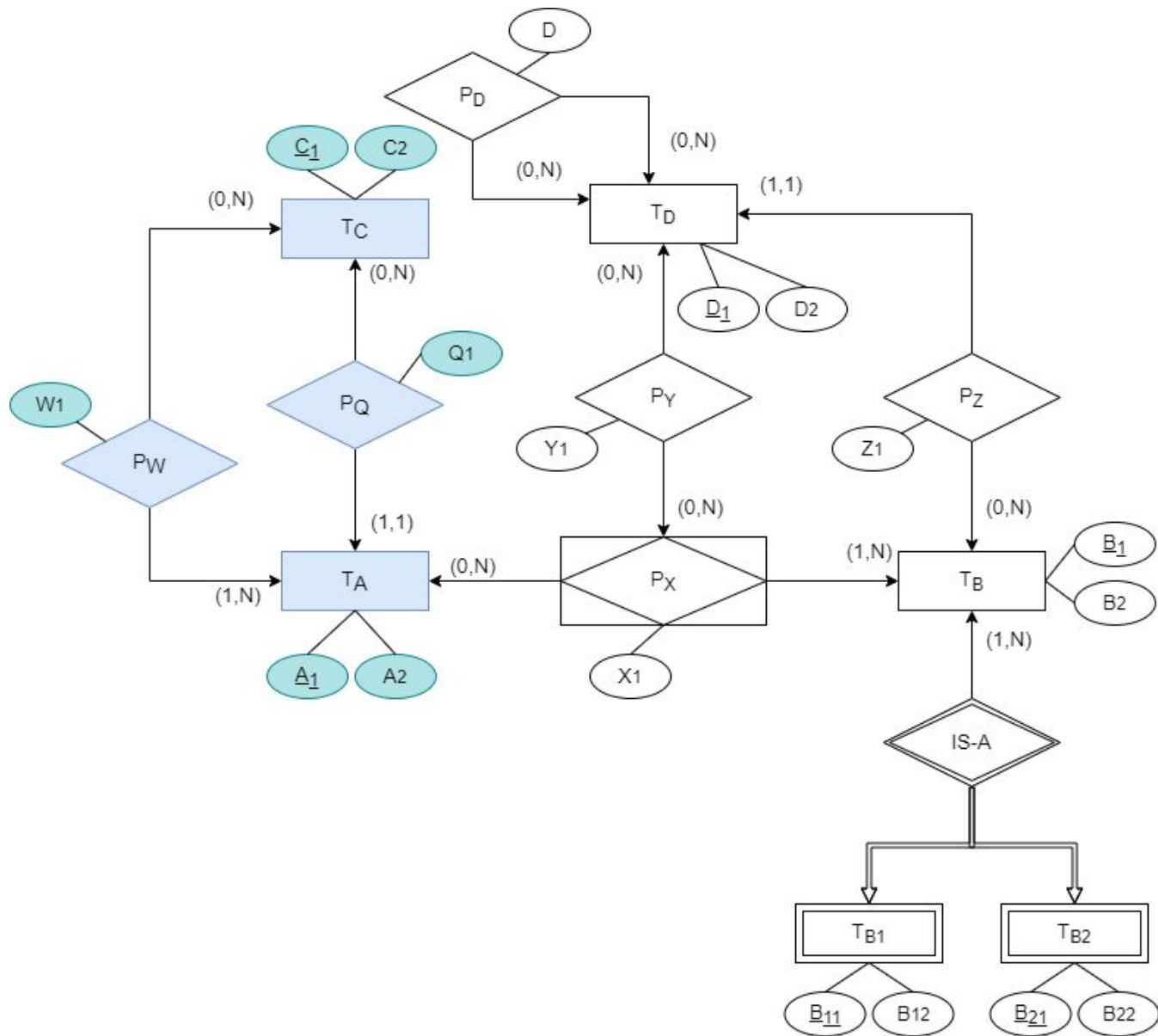
Prevođenje EER šeme u Relacioni model
podataka

dr Slavica Kordić
Veljko Bubnjević
Sanja Radić

Zadatak 1

a) Prevesti EER dijagram u relacionu šemu baze podataka





$$T_C(\{C_1, C_2\}, \{C_1\})$$

$$T_A(\{A_1, A_2, C_{11}, Q_1\}, \{A_1\})$$

$$P_W(\{A_1, C_1, W_1\}, \{A_1 + C_1\})$$

$$P_W[A_1] \subseteq T_A[A_1]$$

$$T_A[A_1] \subseteq P_W[A_1]$$

$$P_W[C_1] \subseteq T_C[C_1]$$

$$T_A[C_{11}] \subseteq T_C[C_1]$$

$$\text{dom}(C_{11}) \subseteq \text{dom}(C_1)$$

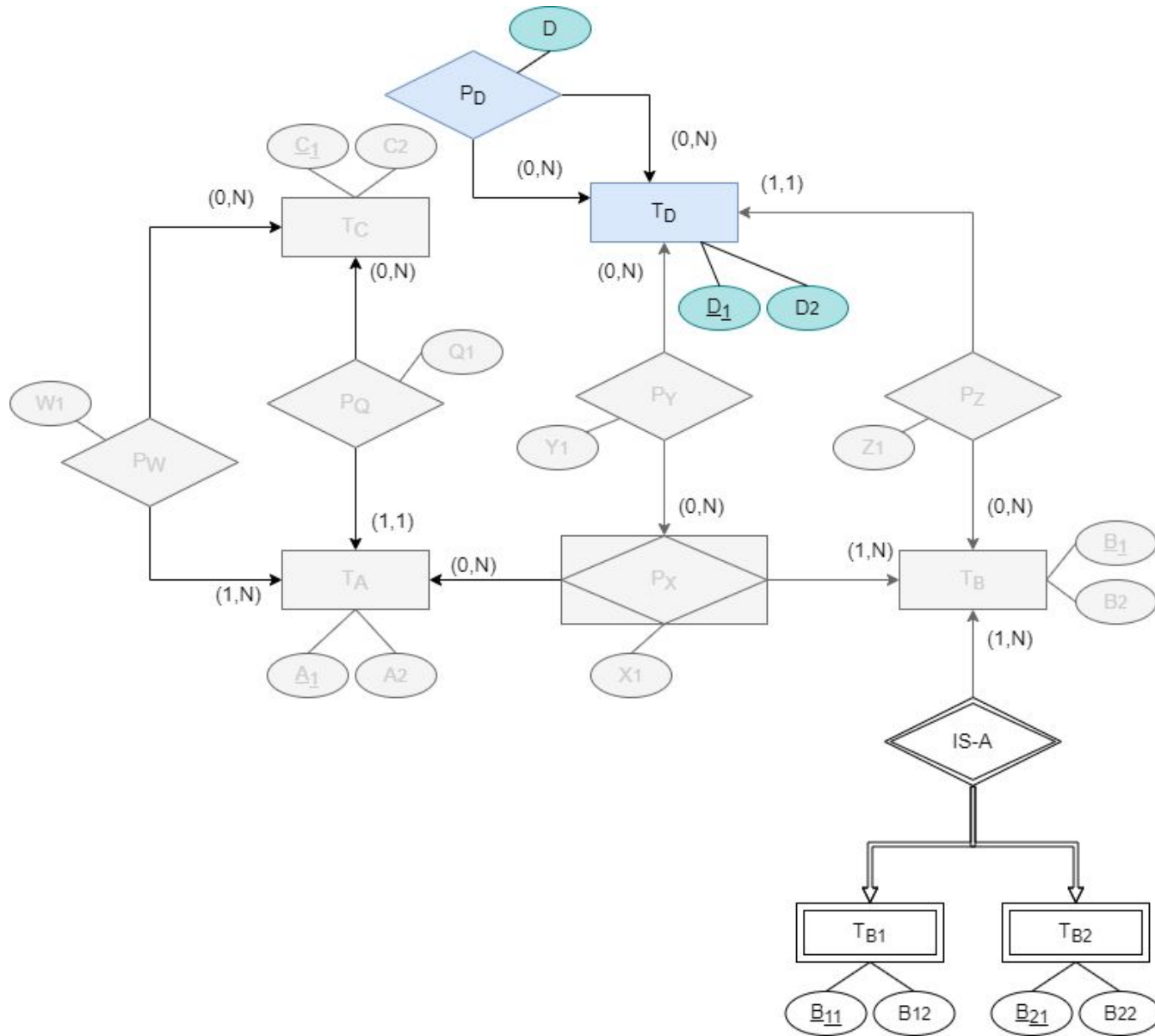
$$\text{Null}(T_A, C_{11}) = \perp$$

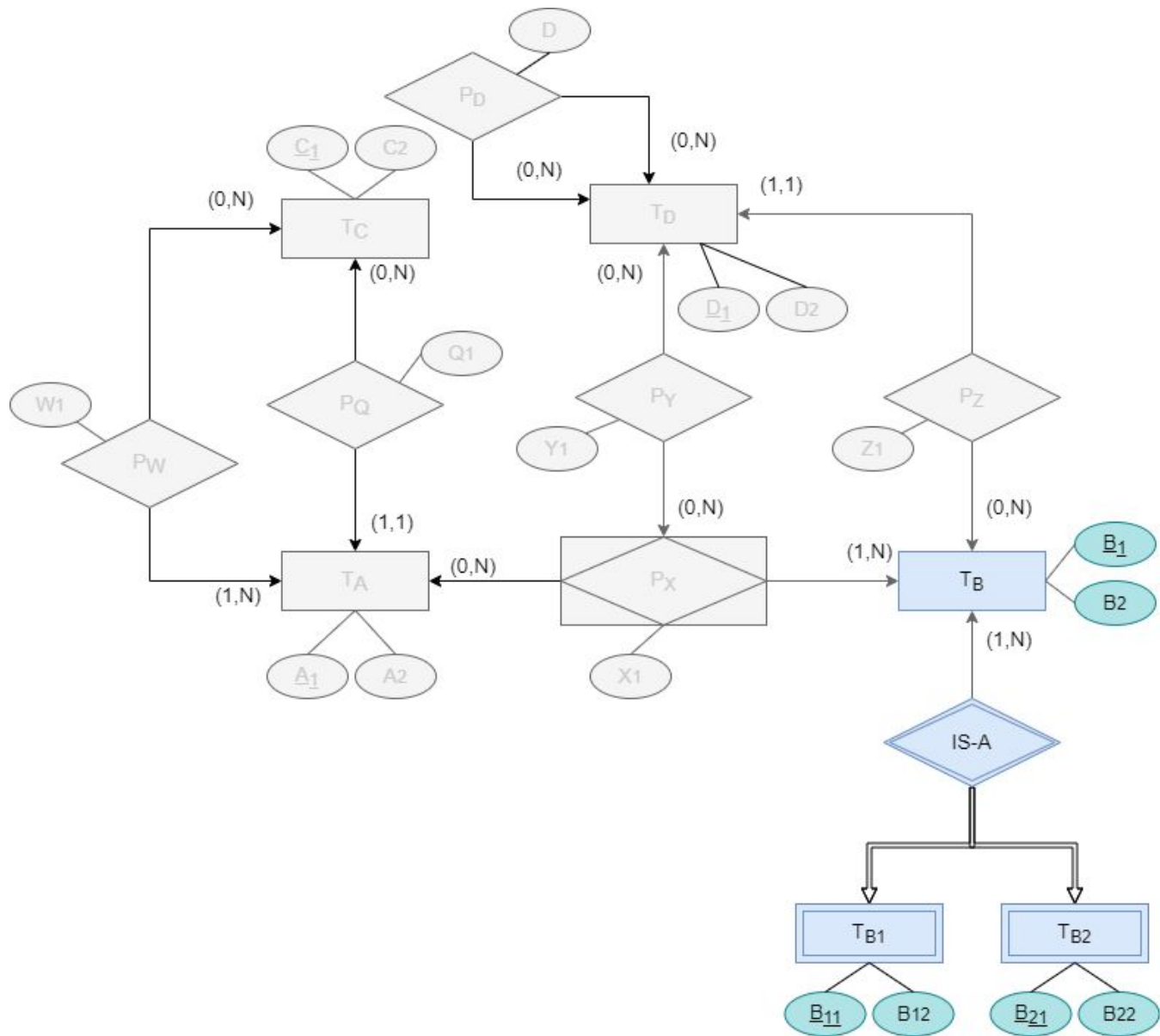
$$P_D(\{D_1, D_{11}, D\}, \{D_1 + D_{11}\})$$

$$P_D[D_1] \subseteq T_D[D_1]$$

$$P_D[D_{11}] \subseteq T_D[D_1]$$

$$\text{dom}(D_{11}) \subseteq \text{dom}(D_1)$$





$$T_{B1}(\{B_1, B_{11}, B_{12}\}, \{B_1, B_{11}\})$$

$$T_{B2}(\{B_1, B_{21}, B_{22}\}, \{B_1, B_{21}\})$$

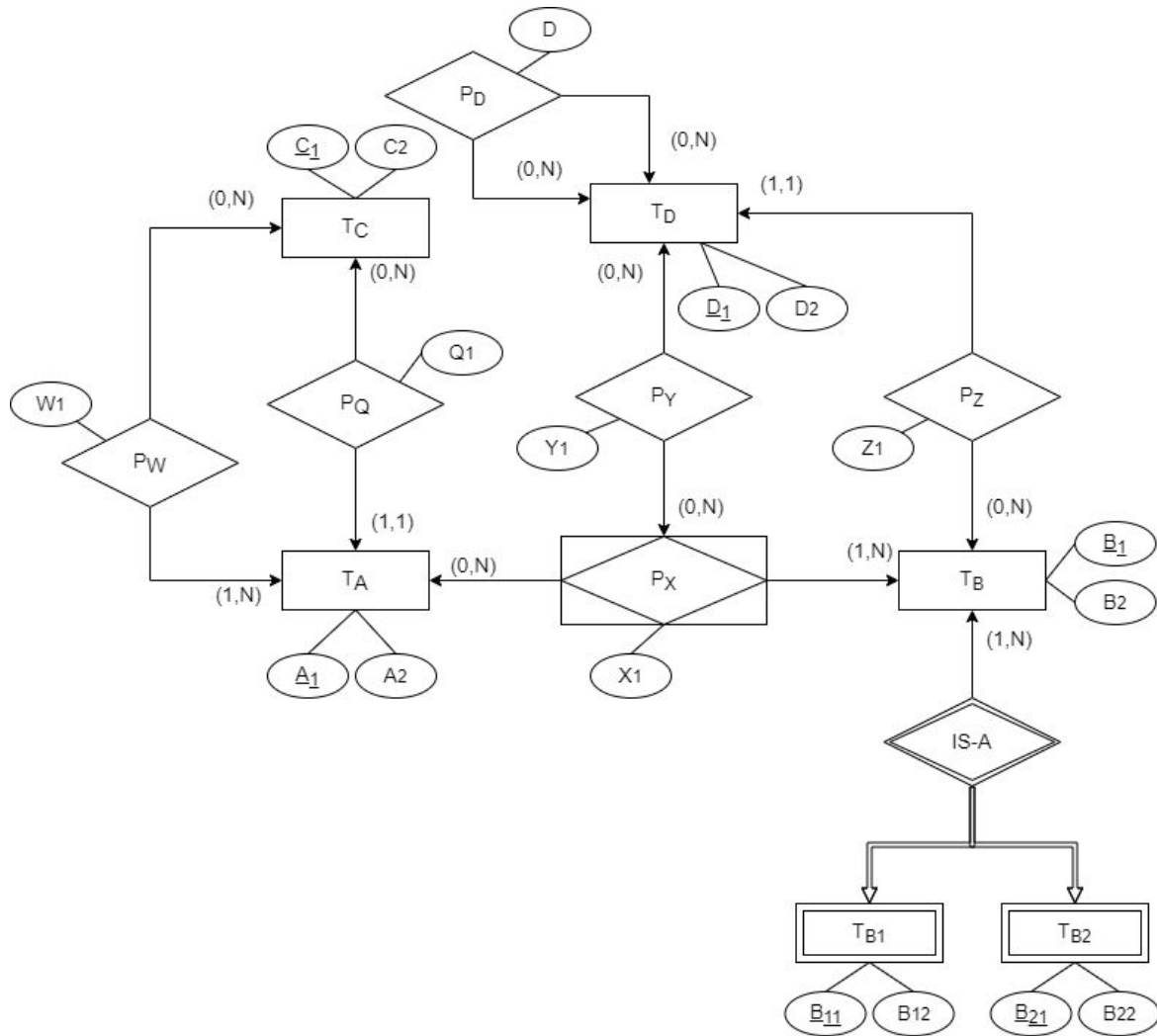
$$T_{B1}[B_1] \subseteq T_B[B_1]$$

$$T_{B2}[B_1] \subseteq T_B[B_1]$$

$$T_B[B_1] \subseteq T_{B1}[B_1] \cup T_{B2}[B_1]$$

Zadatak 1

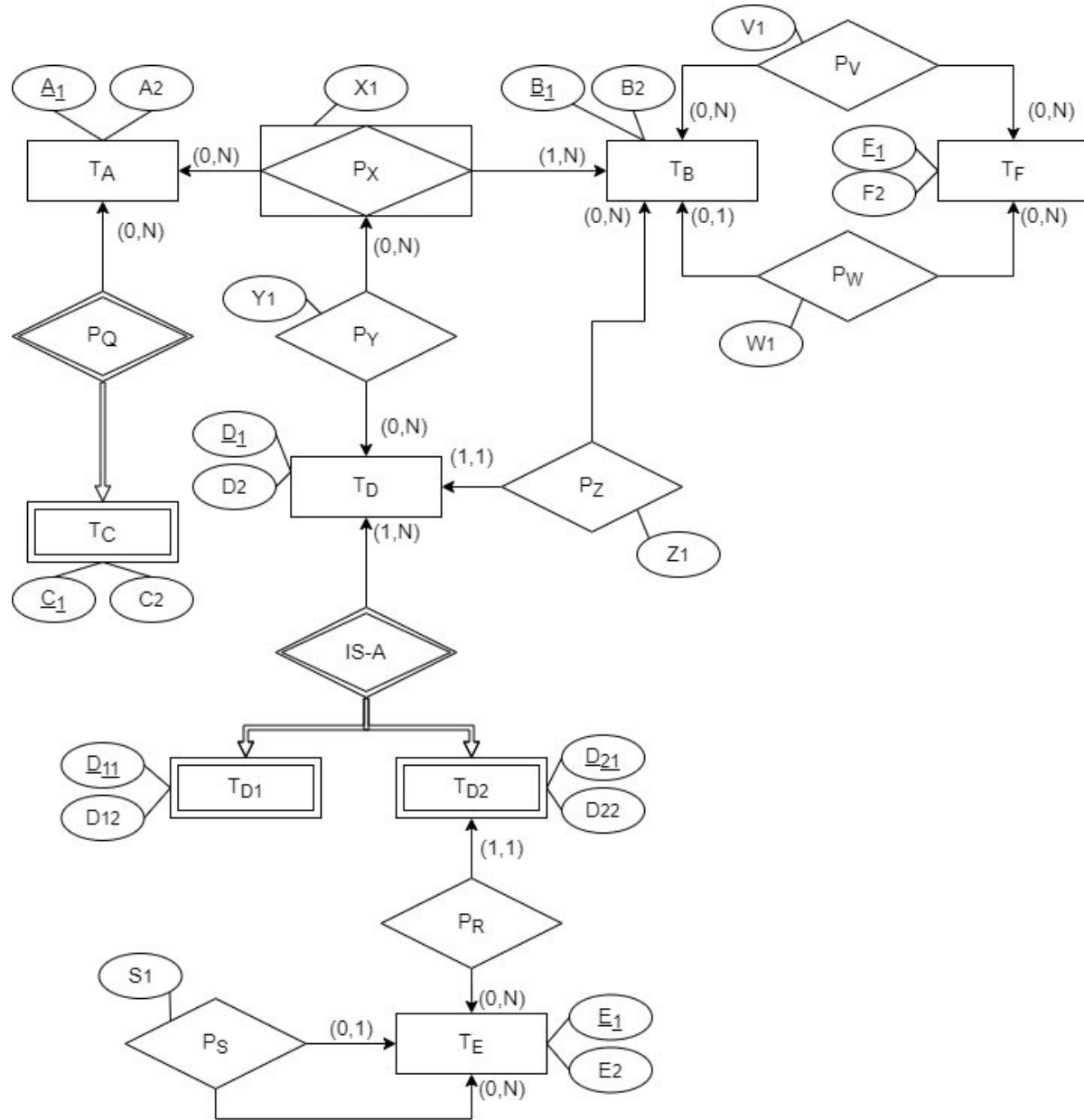
b) Za šeme relacija *TD* i *PW* napisati *CREATE TABLE* naredbu.

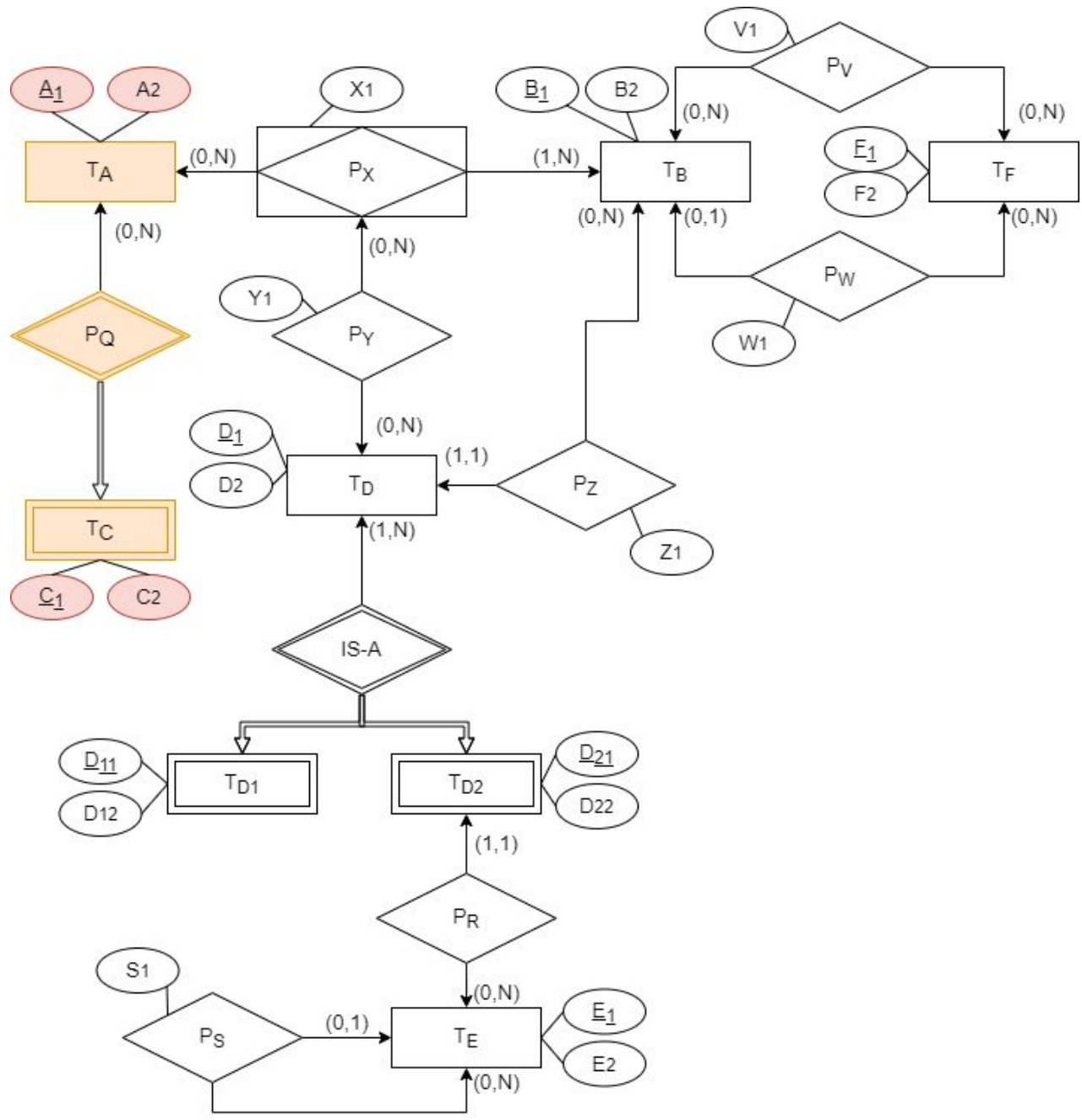


```
CREATE TABLE TD (  
    D1 INTEGER,  
    D2 INTEGER,  
    B1 INTEGER NOT NULL,  
    Z1 INTEGER,  
    CONSTRAINT TD_PK PRIMARY KEY (D1),  
    CONSTRAINT FK_TD_TB FOREIGN KEY (B1) REFERENCES TB(B1)  
);
```

```
CREATE TABLE PW (  
    A1 INTEGER,  
    C1 INTEGER,  
    W1 INTEGER,  
    CONSTRAINT PW_PK PRIMARY KEY (A1, C1),  
    CONSTRAINT FK_PW_TC FOREIGN KEY (C1) REFERENCES TC(C1),  
    CONSTRAINT FK_PW_TA FOREIGN KEY (A1) REFERENCES TA(A1)  
);
```

Zadatak 2: Prevesti EER dijagram u relacionu šemu baze podataka

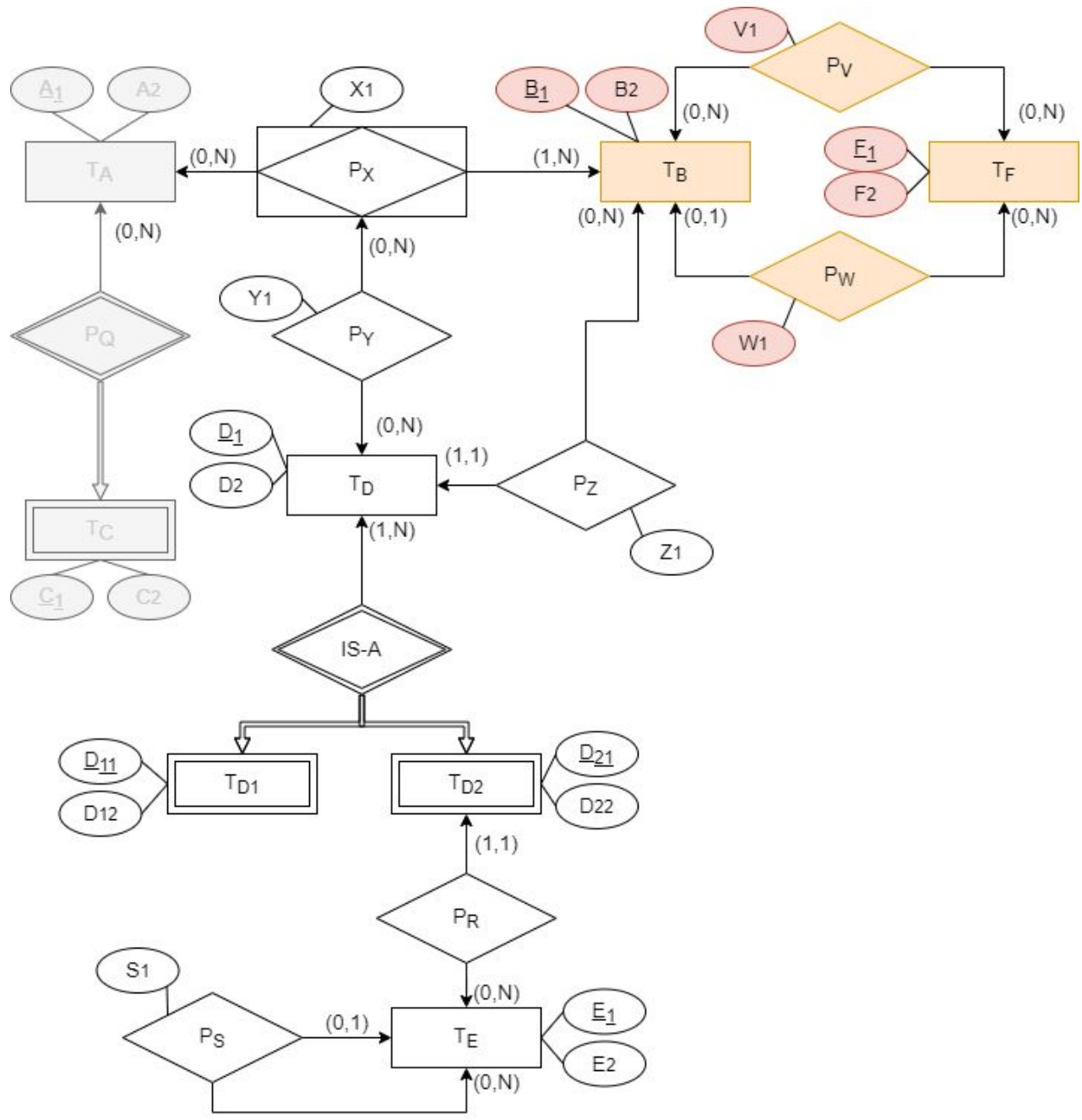




$$T_A(\{A_1, A_2\}, \{A_1\})$$

$$T_C(\{C_1, C_2, A_1\}, \{A_1 + C_1\})$$

$$T_C[A_1] \subseteq T_A[A_1]$$



$$T_F(\{F_1, F_2\}, \{F_1\})$$

$$T_B(\{B_1, B_2, F_{11}, W_1\}, \{B_1\})$$

$$P_V(\{B_1, F_1, V_1\}, \{B_1 + F_1\})$$

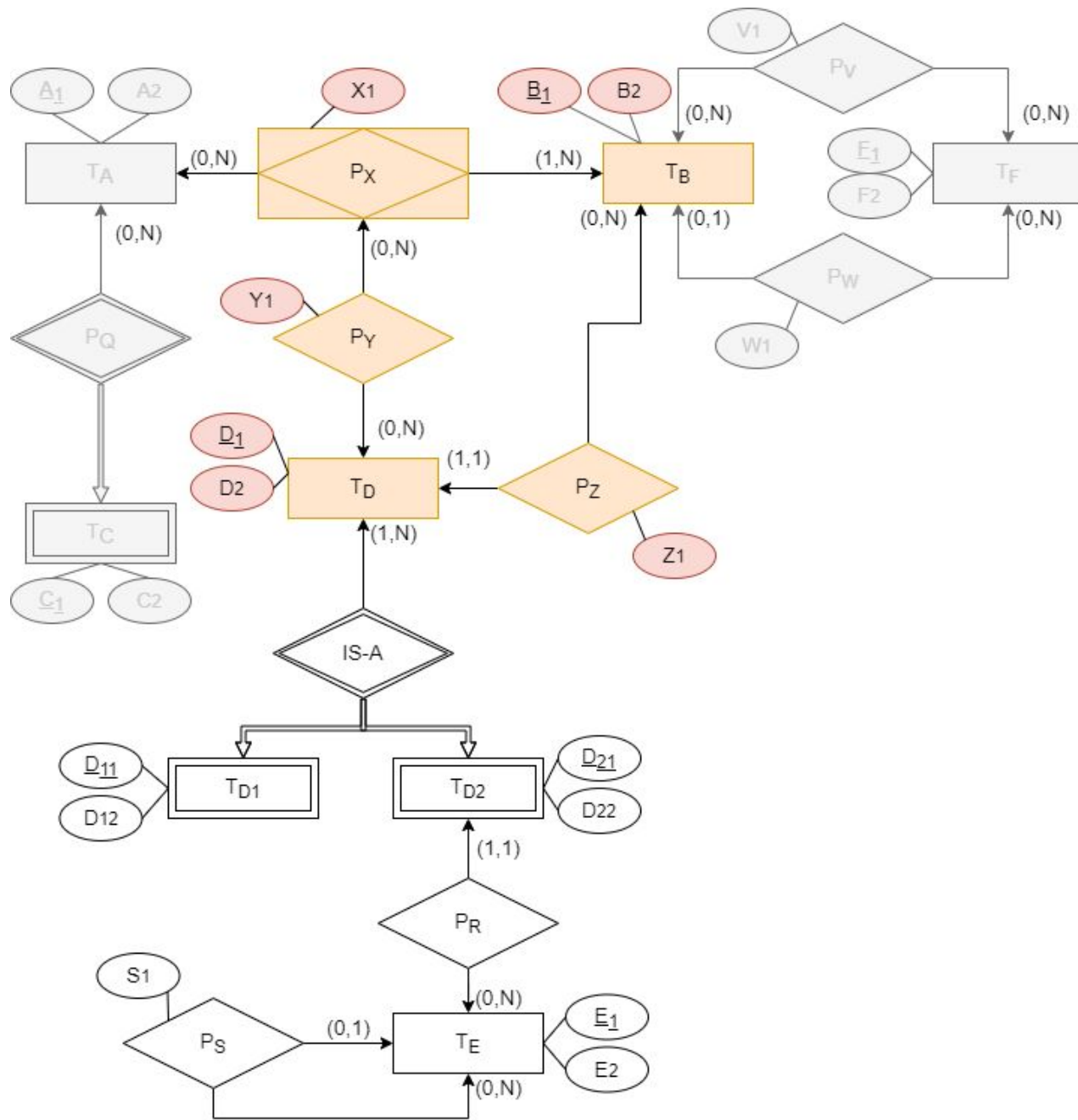
$$T_B[F_{11}] \subseteq T_F[F_1]$$

$$\text{dom}(F_{11}) \subseteq \text{dom}(F_1)$$

$$\text{Null}(T_B, F_{11}) = T$$

$$P_V[F_1] \subseteq T_F[F_1]$$

$$P_V[B_1] \subseteq T_B[B_1]$$



$$P_X(\{A_1, B_1, X_1\}, \{A_1 + B_1\})$$

$$P_X[A_1] \subseteq T_A[A_1]$$

$$P_X[B_1] \subseteq T_B[B_1]$$

$$T_B[B_1] \subseteq P_X[B_1]$$

$$T_D(\{D_1, D_2, B_1, Z_1\}, \{D_1\})$$

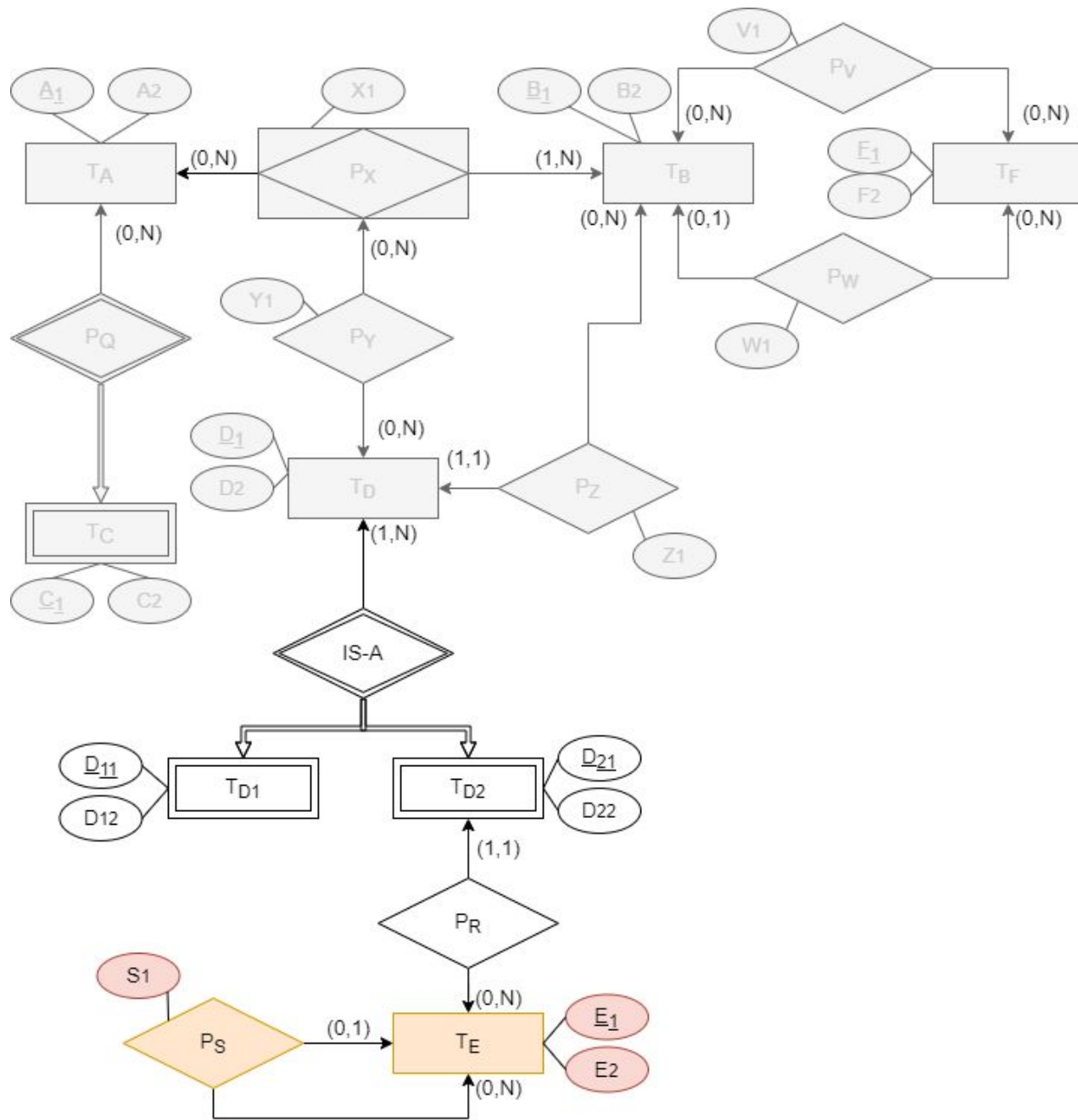
$$P_Y(\{D_1, A_1, B_1, Y_1\}, \{A_1 + B_1 + D_1\})$$

$$T_D[B_1] \subseteq T_B[B_1]$$

$$\text{Null}(T_D, B_1) = \perp$$

$$P_Y[D_1] \subseteq T_D[D_1]$$

$$P_Y[A_1 + B_1] \subseteq P_X[A_1 + B_1]$$

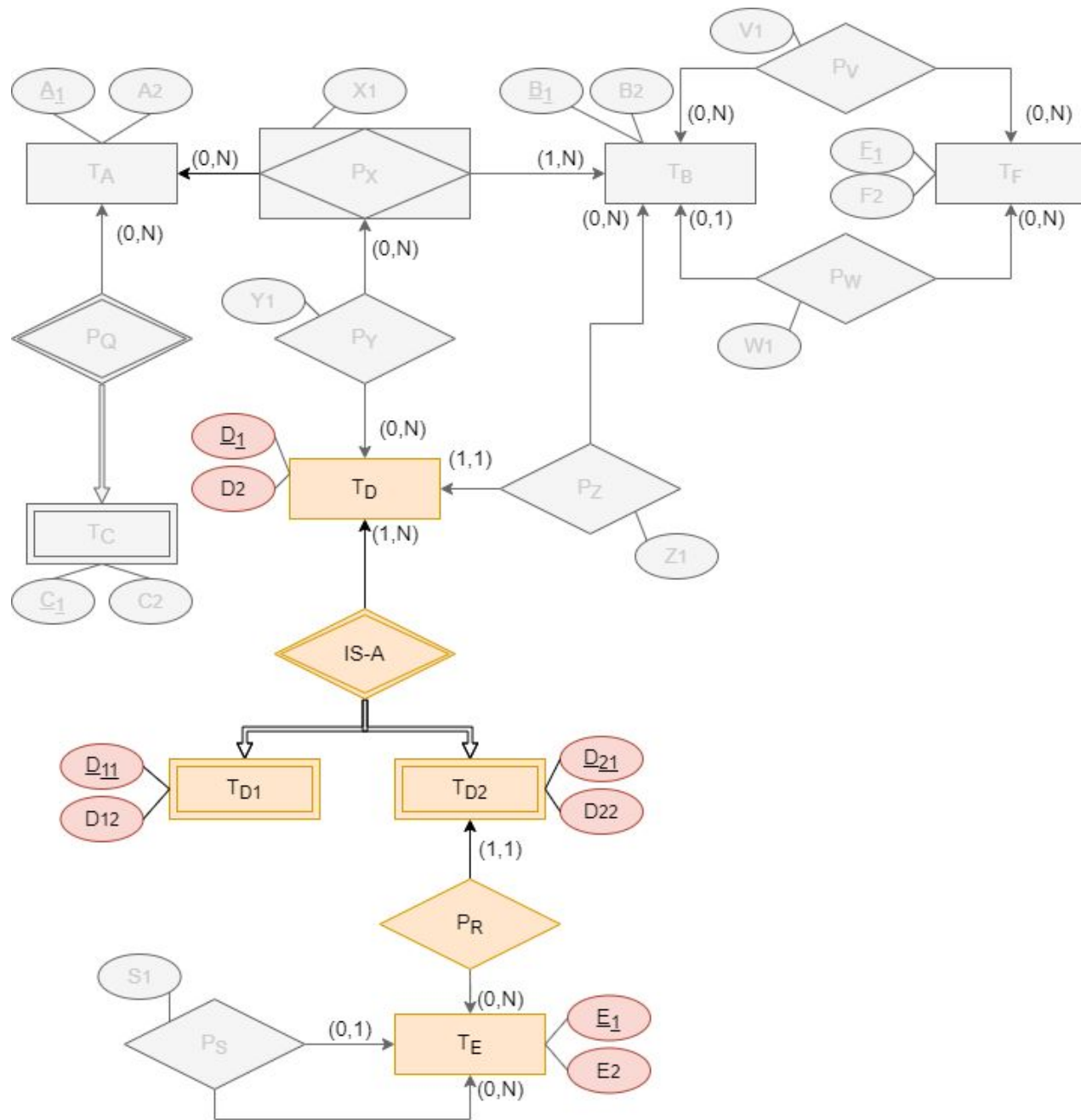


$$T_E(\{E_1, E_2, E_{11}, S_1\}, \{E_1\})$$

$$T_E[E_{11}] \subseteq T_E[E_1]$$

$$\text{dom}(E_{11}) \subseteq \text{dom}(E_1)$$

$$\text{Null}(T_E, E_{11}) = T$$



$$T_{D1}(\{D_{11}, D_{12}, D_1\}, \{D_1, D_{11}\})$$

$$T_{D2}(\{D_{21}, D_{22}, D_1, E_1\}, \{D_1, D_{21}\})$$

$$T_{D1}[D_1] \subseteq T_D[D_1]$$

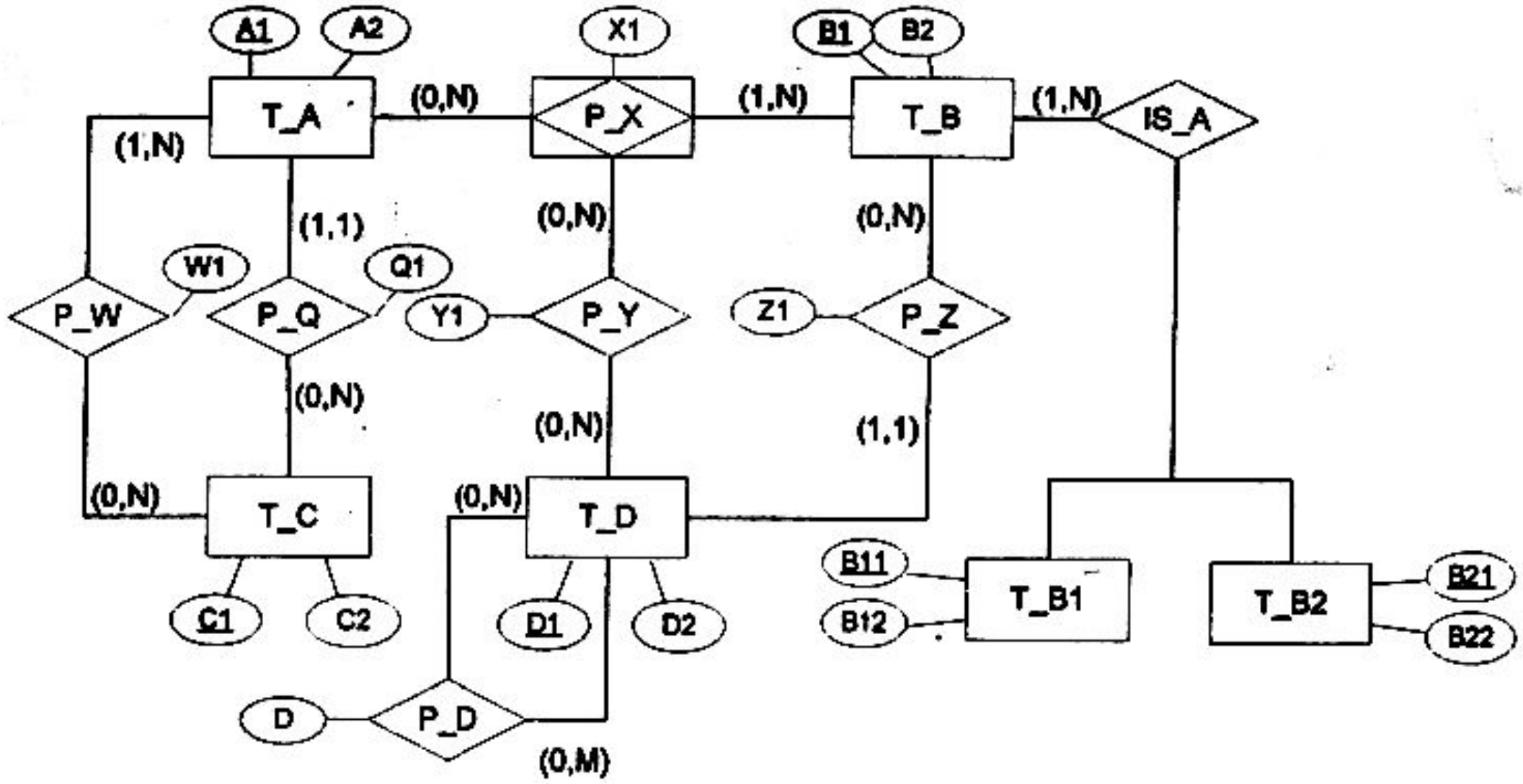
$$T_{D2}[D_1] \subseteq T_D[D_1]$$

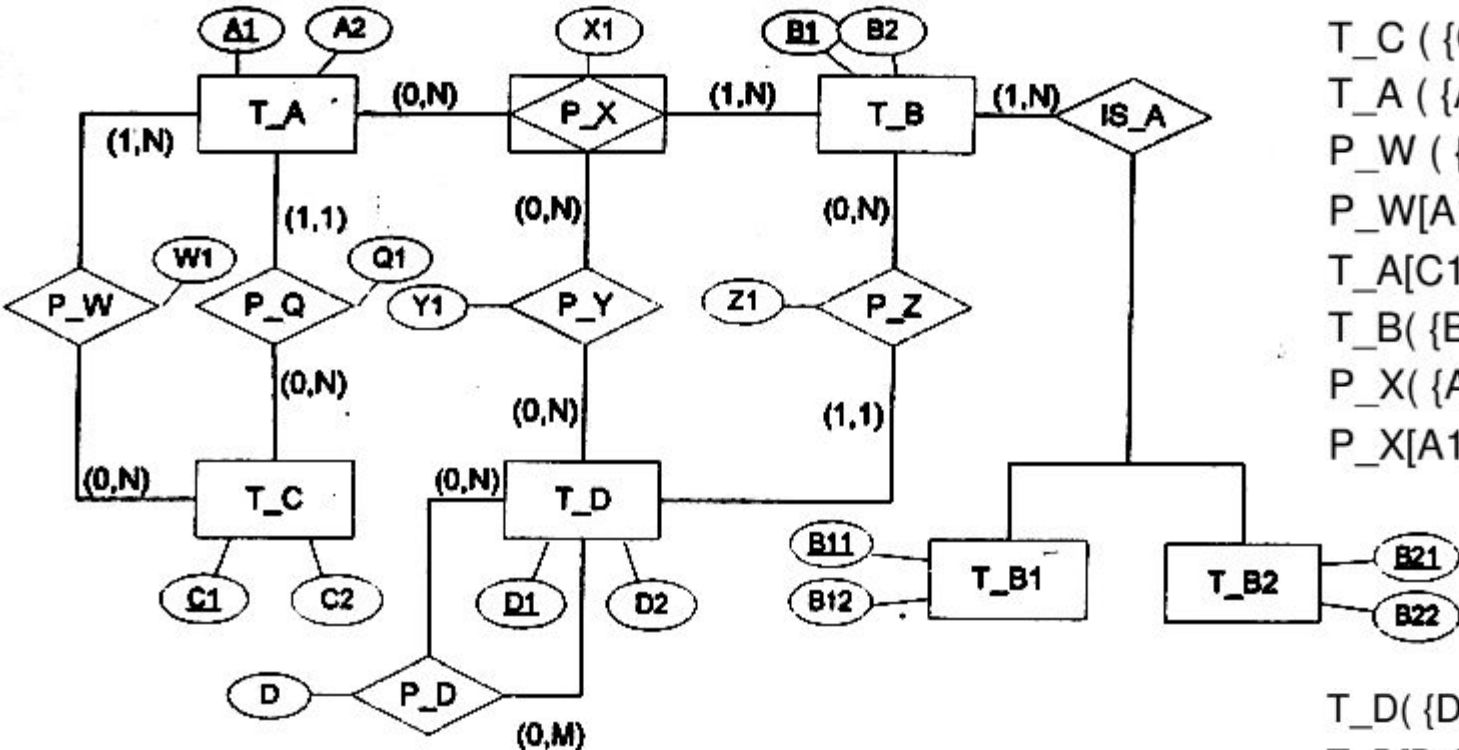
$$T_D[D_1] \subseteq T_{D1}[D_1] \cup T_{D2}[D_1]$$

$$T_{D2}[E_1] \subseteq T_E[E_1]$$

$$Null(T_{D2}, E_1) = \perp$$

Zadatak 3: Prevesti EER dijagram u relacionu šemu baze podataka

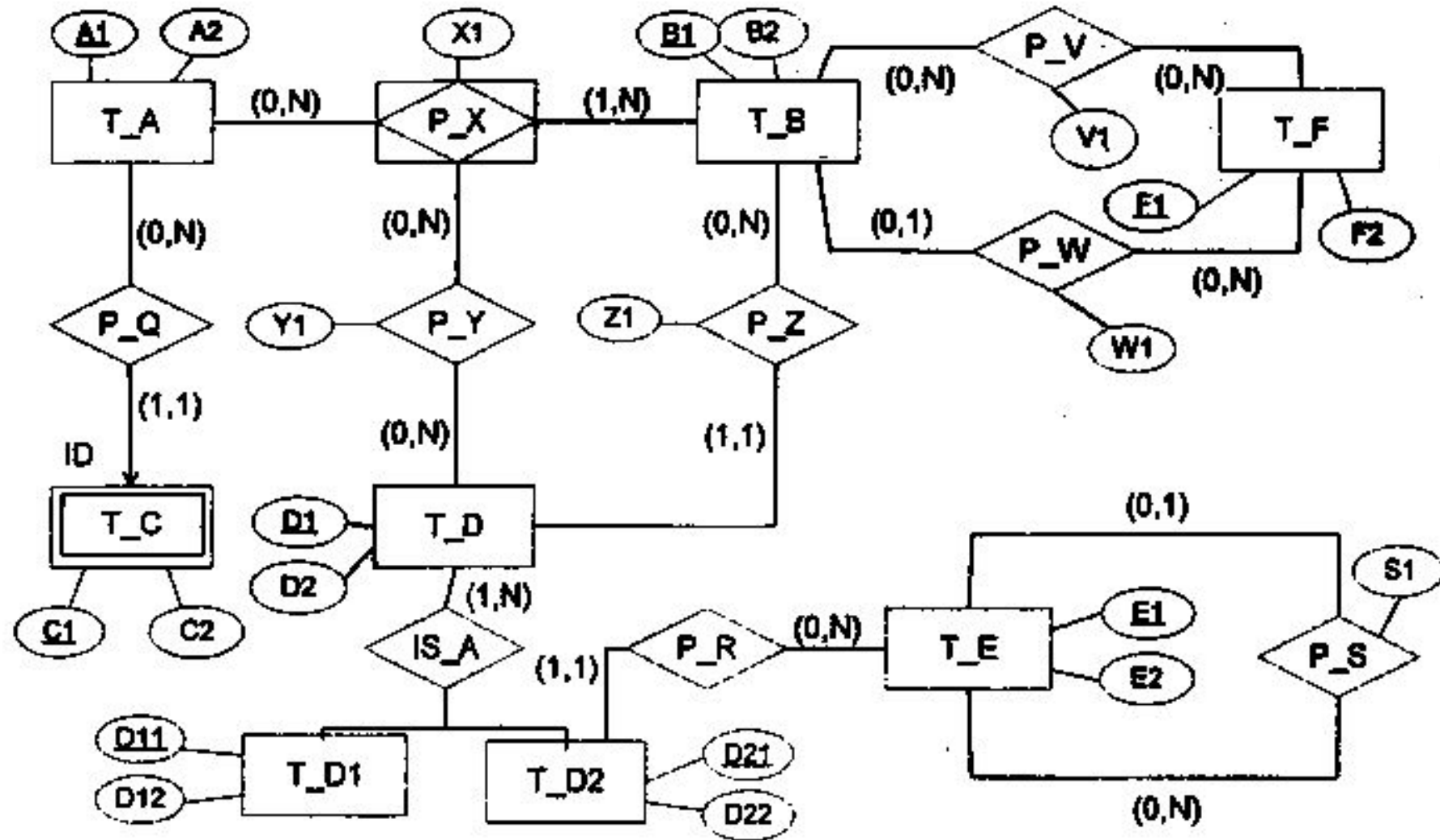


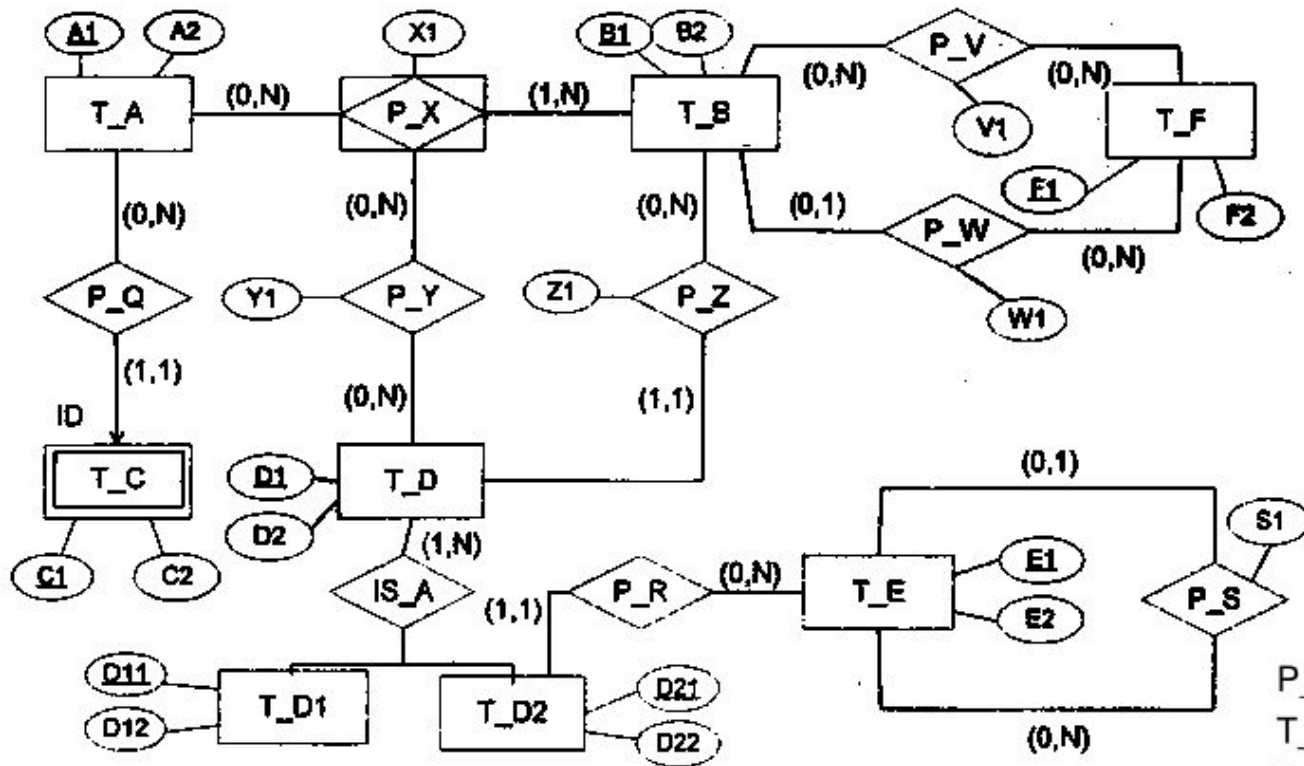


$T_C (\{C1, C2\}, \{C1\})$
 $T_A (\{A1, A2, C11, Q1\}, \{A1\})$
 $P_W (\{A1, C1, W1\}, \{A1+C1\})$
 $P_W[A1] \subseteq T_A[A1], T_A[A1] \subseteq P_W[A1], P_W[C1] \subseteq T_C[C1]$
 $T_A[C11] \subseteq T_C[C1], \text{dom}(C11) \subseteq \text{dom}(C1), \text{Null}(T_A, C11) = \perp$
 $T_B (\{B1, B2\}, \{B1\})$
 $P_X (\{A1, B1, X1\}, \{A1 + B1\})$
 $P_X[A1] \subseteq T_A[A1], P_X[B1] \subseteq T_B[B1], T_B[B1] \subseteq P_X[B1]$

 $T_D (\{D1, D2, B1, Z1\}, \{D1\})$
 $T_D[B1] \subseteq T_B[B1], \text{Null}(T_D, B1) = \perp$
 $P_D (\{D1, D11, D\}, \{D1 + D11\})$
 $P_D[D1] \subseteq T_D[D1], P_D[D11] \subseteq T_D[D1], \text{dom}(D11) \subseteq \text{dom}(D1)$
 $P_Y (\{D1, A1, B1, Y1\}, \{D1 + A1 + B1\})$
 $P_Y[D1] \subseteq T_D[D1], P_Y[A1 + B1] \subseteq P_X[A1 + B1]$
 $T_{B1} (\{B1, B11, B12\}, \{B1, B11\})$
 $T_{B2} (\{B1, B21, B22\}, \{B1, B21\})$
 $T_{B1}[B1] \subseteq T_B[B1]$
 $T_{B2}[B1] \subseteq T_B[B1]$
 $T_B[B1] \subseteq T_{B1}[B1] \cup T_{B2}[B1]$

Zadatak 4: Prevesti EER dijagram u relacionu šemu baze podataka





$T_A(\{A1, A2\}, \{A1\})$

$T_C(\{C1, C2, A1\}, \{A1+C1\})$

$T_C[A1] \subseteq T_A[A1]$

$T_F(\{F1, F2\}, \{F1\})$

$T_B(\{B1, B2, F11, W1\}, \{B1\})$

$P_V(\{B1, F1, V1\}, \{B1 + F1\})$

$T_B[F11] \subseteq T_F[F1], \text{dom}(F11) \subseteq \text{dom}(F1), \text{Null}(T_B, F11) = T$

$P_V[F1] \subseteq T_F[F1], P_V[B1] \subseteq T_B[B1]$

$P_X(\{A1, B1, X1\}, \{A1 + B1\})$

$P_X[A1] \subseteq T_A[A1], P_X[B1] \subseteq T_B[B1], T_B[B1] \subseteq P_X[B1]$

$T_D(\{D1, D2, B1, Z1\}, \{D1\})$

$P_Y(\{D1, A1, B1, Y1\}, \{A1 + B1 + D1\})$

$T_D[B1] \subseteq T_B[B1], \text{Null}(T_D, B1) = \perp$

$P_Y[D1] \subseteq T_D[D1], P_Y[A1 + B1] \subseteq P_X[A1 + B1]$

$T_E(\{E1, E2, E11, S1\}, \{E1\})$

$T_E[E11] \subseteq T_E[E1], \text{dom}(E11) \subseteq \text{dom}(E1), \text{Null}(T_E, E11) = T$

$T_D1(\{D11, D12, D1\}, \{D1, D11\})$

$T_D2(\{D21, D22, D1, E1\}, \{D1, D21\})$

$T_D1[D1] \subseteq T_D[D1], T_D2[D1] \subseteq T_D[D1], T_D[D1] \subseteq T_D1[D1] \cup T_D2[D1]$

$T_D2[E1] \subseteq T_E[E1], \text{Null}(T_D2, E1) = \perp$