

Fakultet tehničkih nauka, DRA, Novi Sad

Predmet:

Struktura i organizacija baza podataka

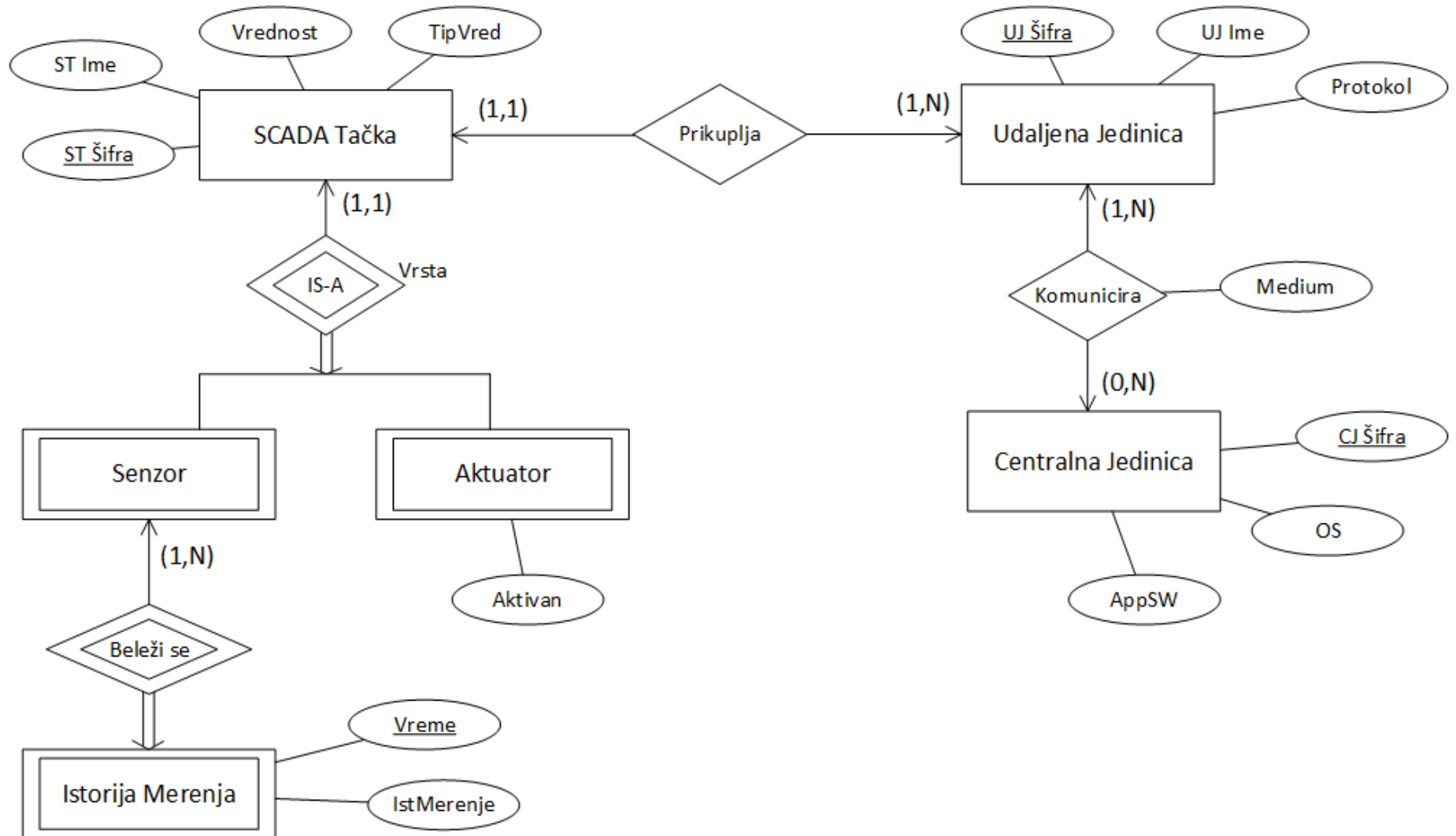
**Prevođenje ER modela u relacioni
model**

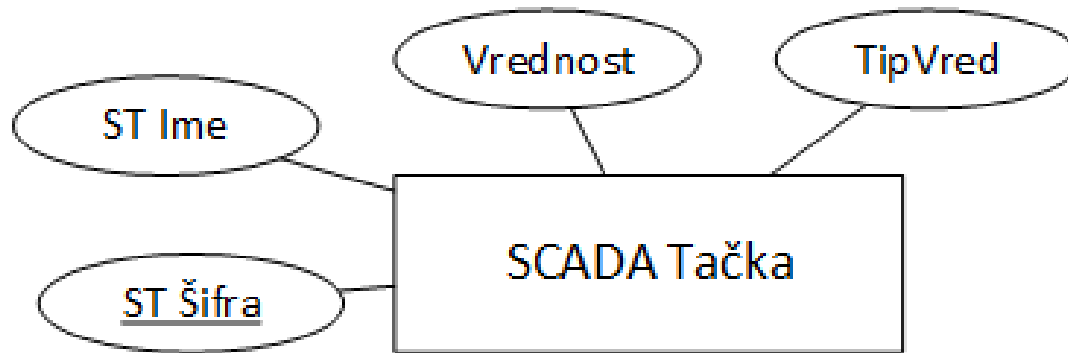
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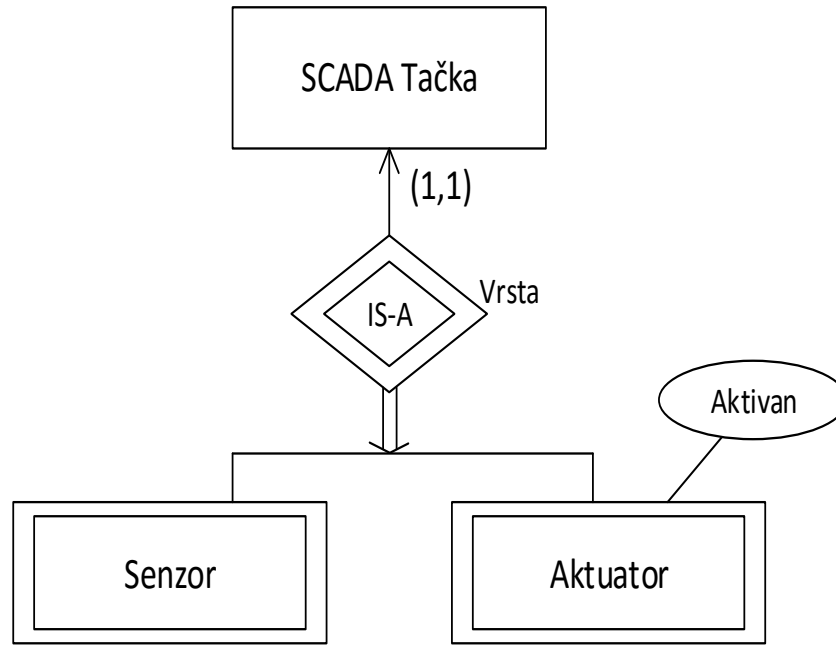
Primer prevođenja





SCADATacka({STSifra, STIme, Vrsta, Vrednost, TipVred},
{STSifra})

```
CREATE TABLE SCADATacka(  
    STSifra integer NOT NULL,  
    STIme varchar(50) NOT NULL,  
    TipVred integer,  
    Vrednost decimal(10, 6),  
    Vrsta integer,  
    CONSTRAINT SCADATacka_PK PRIMARY KEY (STSifra)  
);
```



$\text{Senzor}(\{\text{STSifra}\}, \{\text{STSifra}\})$

$\text{Aktuator}(\{\text{STSifra}, \text{Aktivan}\}, \{\text{STSifra}\})$

$\text{Senzor}[\text{STSifra}] \subseteq \text{SCADATacka}[\text{STSifra}]$

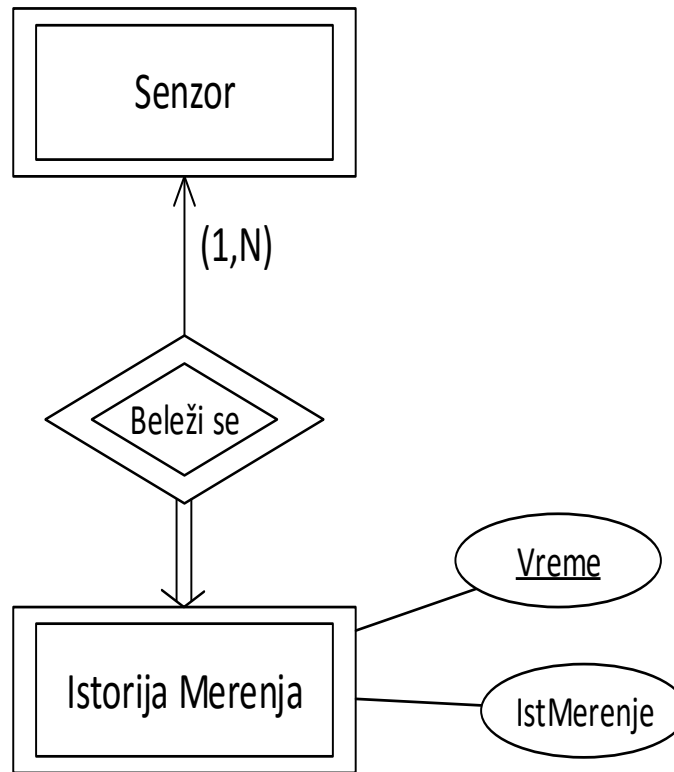
$\text{Aktuator}[\text{STSifra}] \subseteq \text{SCADATacka}[\text{STSifra}]$

$\text{SCADATacka}[\text{STSifra}] \subseteq \text{Senzor}[\text{STSifra}] \cup \text{Aktuator}[\text{STSifra}]$

$\text{Senzor}[\text{STSifra}] \cap \text{Aktuator}[\text{STSifra}] = \emptyset$

```
CREATE TABLE Senzor(  
    STSifra integer NOT NULL,  
    CONSTRAINT Senzor_PK PRIMARY KEY (STSifra),  
    CONSTRAINT Senzor_FK FOREIGN KEY (STSifra)  
        REFERENCES SCADATacka (STSifra)  
);
```

```
CREATE TABLE Aktuator(  
    STSifra integer NOT NULL,  
    Aktivan bit,  
    CONSTRAINT Aktuator_PK PRIMARY KEY (STSifra),  
    CONSTRAINT Aktuator_FK FOREIGN KEY (STSifra)  
        REFERENCES SCADATacka (STSifra)  
);
```

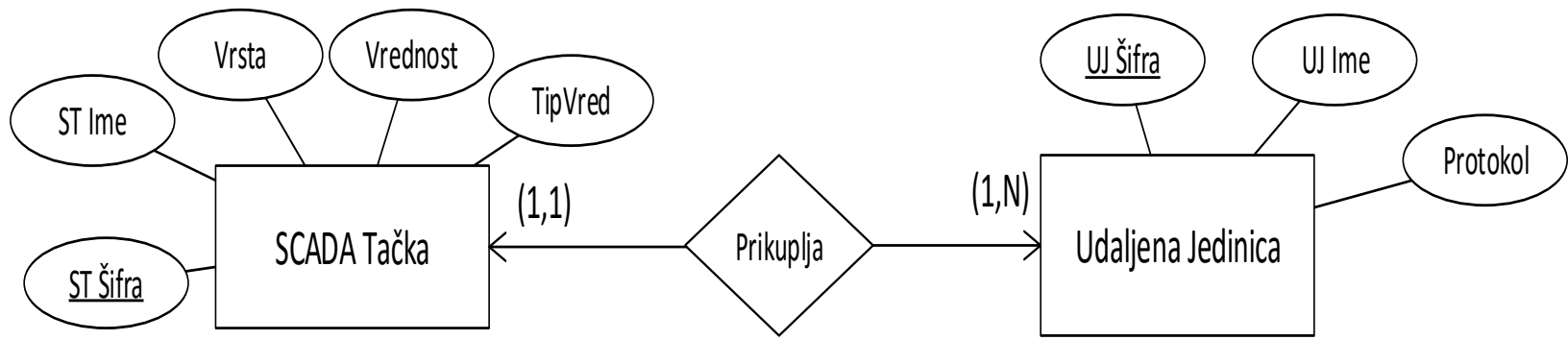


IstorijaMerenja({STSifra, Vreme, IstMerenje},
 {STSifra+Vreme})

IstorijaMerenja[STSifra] \subseteq Senzor[STSifra]

Senzor[STSifra] \subseteq IstorijaMerenja[STSifra]

```
CREATE TABLE IstorijaMerenja(  
    STSifra integer NOT NULL,  
    Vreme datetime NOT NULL,  
    IstVrednost decimal(10, 6),  
    CONSTRAINT IstMer_PK PRIMARY KEY (STSifra, Vreme),  
    CONSTRAINT IstMer_FK FOREIGN KEY (STSifra)  
        REFERENCES Senzor (STSifra)  
);
```

UdaljenaJedinica({UJSifra, UJIme,Protokol}, {UJSifra})
 SCADATacka({STSifra, ST_Ime, Vrsta, Vrednost, TipVred,
UJSifra}, {STSifra})

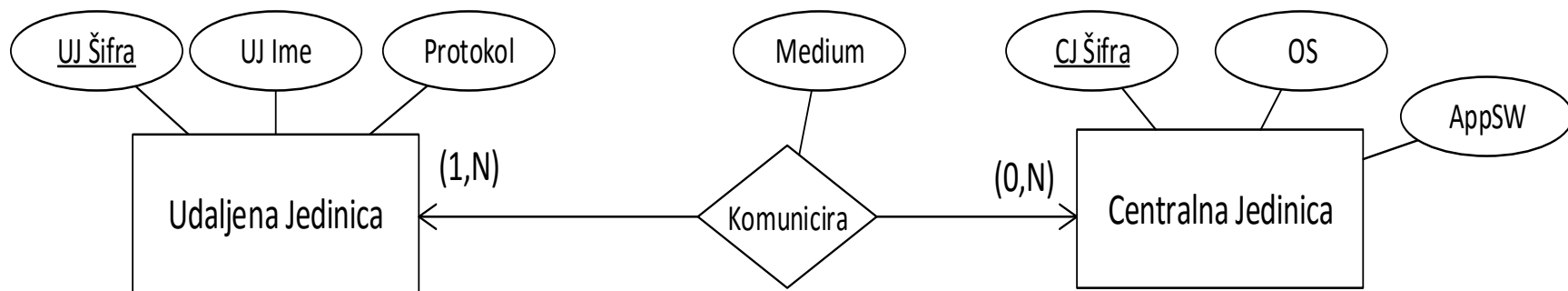
$\text{Null}(\text{SCADATacka}, \text{UJSifra}) = \perp$

$\text{SCADATacka}[\text{UJSifra}] \subseteq \text{UdaljenaJedinica}[\text{UJSifra}]$

$\text{UdaljenaJedinica}[\text{UJSifra}] \subseteq \text{SCADATacka}[\text{UJSifra}]$

```
CREATE TABLE UdaljenaJedinica(  
    UJSifra integer NOT NULL,  
    UJIme varchar(50),  
    Protokol integer,  
    CONSTRAINT UdJed_PK PRIMARY KEY (UJSifra)  
);
```

```
CREATE TABLE SCADATacka(  
    STSifra integer NOT NULL,  
    STIme varchar(50) NOT NULL,  
    TipVred integer,  
    Vrednost decimal(10, 6),  
    UJSifra integer NOT NULL,  
    CONSTRAINT SCADATacka_PK PRIMARY KEY (STSifra),  
    CONSTRAINT ST_FK FOREIGN KEY (UJSifra)  
        REFERENCES UdaljenaJedinica (UJSifra)  
);
```



CentralnaJedinica({CJSifra, OS, AppSW}, {CJSifra})

Komunicira({UJSifra, CJSifra, Medium}, {UJSifra+CJSifra})

Komunicira[UJSifra] \subseteq UdaljenaJedinica[UJSifra]

UdaljenaJedinica[UJSifra] \subseteq Komunicira[UJSifra]

Komunicira[CJSifra] \subseteq CentralnaJedinica[CJSifra]

```
CREATE TABLE CentralnaJedinica(  
    CJSifra integer NOT NULL,  
    UJIme varchar(50),  
    Protokol integer,  
    CONSTRAINT CenJed_PK PRIMARY KEY (CJSifra)  
);
```

```
CREATE TABLE Komunicira(  
    UJSifra integer NOT NULL,  
    CJSifra integer NOT NULL,  
    Medium integer,  
    CONSTRAINT Komunicira_PK PRIMARY KEY (UJSifra, CJSifra),  
    CONSTRAINT Kom_UJ_FK FOREIGN KEY (UJSifra)  
        REFERENCES UdaljenaJedinica (UJSifra),  
    CONSTRAINT Kom_CJ_FK FOREIGN KEY (CJSifra)  
        REFERENCES CentralnaJedinica (CJSifra)  
);
```