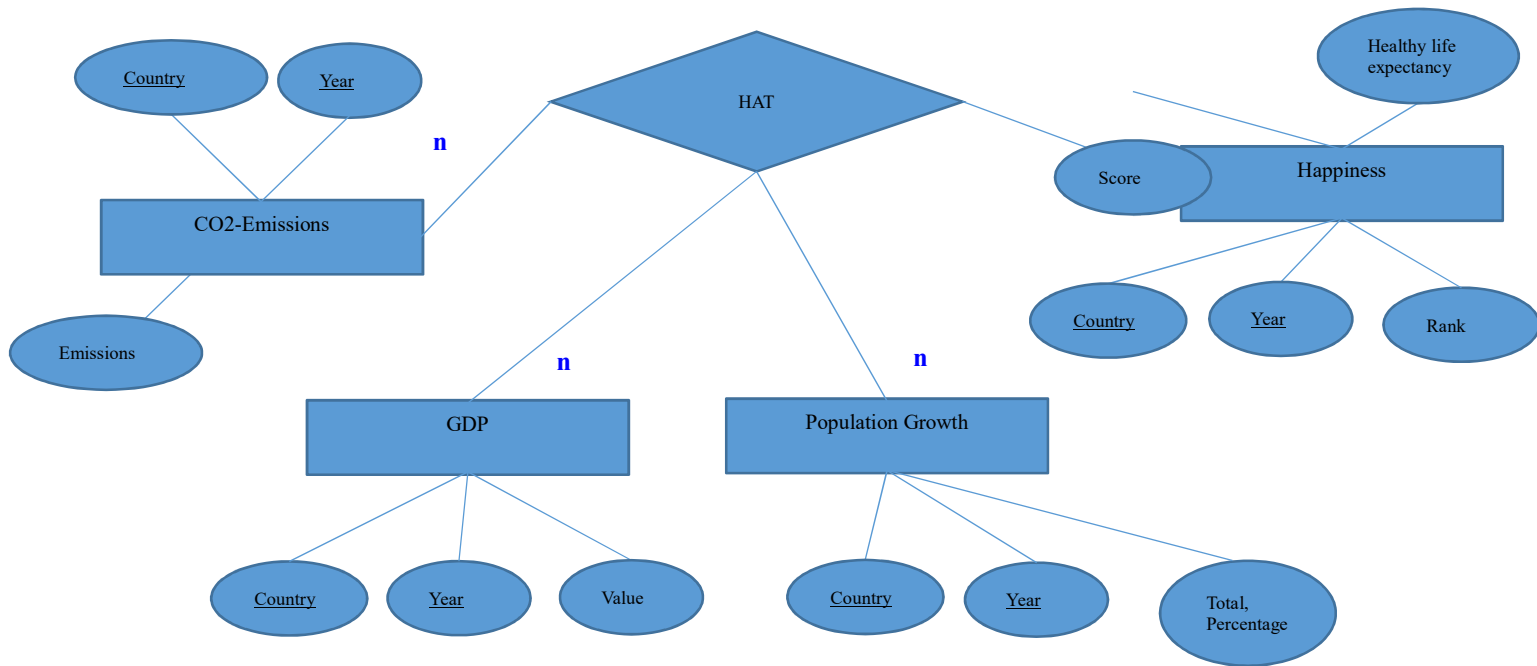


Entity-Relationship-Modell zur Fragestellung:

"In welchem Zusammenhang stehen wirtschaftliche Entwicklung (gemessen mit BIP), CO2-Emissionen und das Glücksgefühl miteinander"



Hypothesen für die Fragestellung, die überprüft werden müssen:

- Erhöht ein höheres **BIP** und ein niedriges **CO2-Emissionen-Wert** das **Glücksgefühl in einem Lande**?
- Erhöhen sich die **CO2-Emissionen** mit dem **Bevölkerungswachstum** in einem Lande?

Relationales Modell:

- GDP(Country, Year, Value)
- CO2-Emissions(Emissions, Year)
- Happiness(Country, Year, Rank, Score, Healthy life expectancy, GINI index)
- Population Growth(Country, Year, Value)
- **HAT**(Name, Emissions, Year, CountryG, YearG, ValueG, CountryP, YearP, ValueP, CountryH, YearH, ValueH, Rank, Score, Gini Index, Healthy life expectancy)
 - keys sind: Name, Emissions, Year, CountryG, YearG, CountryP, YearP, CountryH, YearH

Schema (Tabelle):

Die oben gezeigten Modelle werden in **PostgreSQL** mit diesen Kommandos erstellt:

```
CREATE TABLE Compare(  
  Happy_Country varchar(50)    CHECK (Happy_Country = GDP_Country),  
  Happy_Year INT NOT NULL      CHECK (Happy_Year = GDP_Year),  
  GDP_Country varchar(50)      CHECK (GDP_Country = CO2_Country),  
  GDP_Year INT NOT NULL        CHECK (GDP_Year = CO2_Year),  
  CO2_Country varchar(50)      CHECK (CO2_Country = Pop_Country),  
  CO2_Year INT NOT NULL        CHECK (CO2_Year = Pop_Year),  
  Pop_Country varchar(50)      CHECK (Happy_Country = Pop_Country),  
  Pop_Year INT NOT NULL        CHECK (Happy_Year = Pop_Year),  
  
  CONSTRAINT fk_happy  
    FOREIGN KEY(Happy_Country, Happy_Year)  
    REFERENCES World_Happiness_Index(CountryName, Year)  
  ,  
  CONSTRAINT fk_gdp  
    FOREIGN KEY(GDP_Country, GDP_Year)  
    REFERENCES GDP(CountryName, Year)  
  ,  
  CONSTRAINT fk_CO2  
    FOREIGN KEY(CO2_Country, CO2_Year)  
    REFERENCES CO2(CountryName, Year)  
  ,  
  CONSTRAINT fk_pop  
    FOREIGN KEY(Pop_Country, Pop_Year)  
    REFERENCES Population(CountryName, Year)  
);  
  
CREATE TABLE CO2 (  
  CountryName varchar(50),  
  Year INT NOT NULL,  
  CO2Emissions DECIMAL,  
  PRIMARY KEY (CountryName, Year)  
);
```

```
CREATE TABLE World_Happiness_Index (  
CountryName varchar(50),  
Year INT NOT NULL,  
HappinessRank INT,  
HappinessScore DECIMAL,  
HealthyLifeExpectancy DECIMAL,  
PRIMARY KEY (CountryName, Year)  
);  
CREATE TABLE Population(  
CountryName varchar(50),  
Year INT NOT NULL,  
PopTotal INT,  
PopGrowth DECIMAL,  
PRIMARY KEY (CountryName, Year)  
);  
CREATE TABLE GDP (  
CountryName varchar(50),  
Year INT NOT NULL,  
GDP_Value DECIMAL,  
PRIMARY KEY (CountryName, Year)  
);
```