Exploratory Data Analysis using BigQuery:

SELECT

COUNT(\*) as Total\_Records,

COUNT(DISTINCT Date) as Unique\_Dates,

MIN(Date) as Earliest\_Date,

MAX(Date) as Latest\_Date

FROM `Fred\_Crude\_Live\_Batch.Fred-Crude-Live-Batch`;

SELECT

FORMAT\_DATE('%Y-%m', PARSE\_DATE('%m/%d/%y', Date)) as Month,

AVG(SP500) as Average\_SP500

FROM `Fred\_Crude\_Live\_Batch.Fred-Crude-Live-Batch`

GROUP BY Month

ORDER BY Month;

SELECT

CORR(SP500, NASDAQCOM) as Correlation\_SP500\_NASDAQCOM

FROM `Fred\_Crude\_Live\_Batch.Fred-Crude-Live-Batch`;

SELECT

COUNTIF(SP500 IS NULL) as Missing\_SP500,

COUNTIF(NASDAQCOM IS NULL) as Missing\_NASDAQCOM,

COUNTIF(DJIA IS NULL) as Missing\_DJIA,

COUNTIF(RU2000PR IS NULL) as Missing\_RU2000PR,

COUNTIF(BOGMBASEW IS NULL) as Missing\_BOGMBASEW,

COUNTIF(DEXJPUS IS NULL) as Missing\_DEXJPUS,

COUNTIF(DEXUSEU IS NULL) as Missing\_DEXUSEU,

COUNTIF(DEXCHUS IS NULL) as Missing\_DEXCHUS,

COUNTIF(DEXUSAL IS NULL) as Missing\_DEXUSAL,

-- Continue adding COUNTIF() functions for other columns

COUNTIF(USDONTD156N IS NULL) as Missing\_USDONTD156N,

COUNTIF(USD1MTD156N IS NULL) as Missing\_USD1MTD156N,

COUNTIF(USD3MTD156N IS NULL) as Missing\_USD3MTD156N,

COUNTIF(USD12MD156N IS NULL) as Missing\_USD12MD156N,

COUNTIF(BAMLHYH0A0HYM2TRIV IS NULL) as Missing\_BAMLHYH0A0HYM2TRIV,

COUNTIF(BAMLCC0A1AAATRIV IS NULL) as Missing\_BAMLCC0A1AAATRIV,

COUNTIF(GOLDAMGBD228NLBM IS NULL) as Missing\_GOLDAMGBD228NLBM,

COUNTIF(DCOILWTICO IS NULL) as Missing\_DCOILWTICO,

COUNTIF(MHHNGSP IS NULL) as Missing\_MHHNGSP,

COUNTIF(VXXLECLS IS NULL) as Missing\_VXXLECLS

FROM `Fred\_Crude\_Live\_Batch.Fred-Crude-Live-Batch`;

SELECT

FORMAT\_DATE('%Y', PARSE\_DATE('%m/%d/%y', Date)) as Year,

AVG(SP500) as Average\_SP500,

AVG(NASDAQCOM) as Average\_NASDAQCOM,

AVG(DJIA) as Average\_DJIA,

AVG(RU2000PR) as Average\_RU2000PR,

AVG(BOGMBASEW) as Average\_BOGMBASEW,

AVG(DEXJPUS) as Average\_DEXJPUS,

AVG(DEXUSEU) as Average\_DEXUSEU,

AVG(DEXCHUS) as Average\_DEXCHUS,

AVG(DEXUSAL) as Average\_DEXUSAL,

-- Continue adding AVG() functions for other columns

AVG(USDONTD156N) as Average\_USDONTD156N,

AVG(USD1MTD156N) as Average\_USD1MTD156N,

AVG(USD3MTD156N) as Average\_USD3MTD156N,

AVG(USD12MD156N) as Average\_USD12MD156N,

AVG(BAMLHYH0A0HYM2TRIV) as Average\_BAMLHYH0A0HYM2TRIV,

AVG(BAMLCC0A1AAATRIV) as Average\_BAMLCC0A1AAATRIV,

AVG(GOLDAMGBD228NLBM) as Average\_GOLDAMGBD228NLBM,

AVG(DCOILWTICO) as Average\_DCOILWTICO,

AVG(MHHNGSP) as Average\_MHHNGSP,

AVG(VXXLECLS) as Average\_VXXLECLS

FROM `Fred\_Crude\_Live\_Batch.Fred-Crude-Live-Batch`

GROUP BY Year

ORDER BY Year;

SELECT

AVG(SP500) as Average\_SP500, MAX(SP500) as Max\_SP500, MIN(SP500) as Min\_SP500,

AVG(NASDAQCOM) as Average\_NASDAQCOM, MAX(NASDAQCOM) as Max\_NASDAQCOM, MIN(NASDAQCOM) as Min\_NASDAQCOM,

AVG(DJIA) as Average\_DJIA, MAX(DJIA) as Max\_DJIA, MIN(DJIA) as Min\_DJIA,

AVG(RU2000PR) as Average\_RU2000PR, MAX(RU2000PR) as Max\_RU2000PR, MIN(RU2000PR) as Min\_RU2000PR,

AVG(BOGMBASEW) as Average\_BOGMBASEW, MAX(BOGMBASEW) as Max\_BOGMBASEW, MIN(BOGMBASEW) as Min\_BOGMBASEW,

AVG(DEXJPUS) as Average\_DEXJPUS, MAX(DEXJPUS) as Max\_DEXJPUS, MIN(DEXJPUS) as Min\_DEXJPUS,

AVG(DEXUSEU) as Average\_DEXUSEU, MAX(DEXUSEU) as Max\_DEXUSEU, MIN(DEXUSEU) as Min\_DEXUSEU,

AVG(DEXCHUS) as Average\_DEXCHUS, MAX(DEXCHUS) as Max\_DEXCHUS, MIN(DEXCHUS) as Min\_DEXCHUS,

AVG(DEXUSAL) as Average\_DEXUSAL, MAX(DEXUSAL) as Max\_DEXUSAL, MIN(DEXUSAL) as Min\_DEXUSAL,

-- Continue adding AVG(), MAX(), MIN() functions for other columns

AVG(USDONTD156N) as Average\_USDONTD156N, MAX(USDONTD156N) as Max\_USDONTD156N, MIN(USDONTD156N) as Min\_USDONTD156N,

AVG(USD1MTD156N) as Average\_USD1MTD156N, MAX(USD1MTD156N) as Max\_USD1MTD156N, MIN(USD1MTD156N) as Min\_USD1MTD156N,

AVG(USD3MTD156N) as Average\_USD3MTD156N, MAX(USD3MTD156N) as Max\_USD3MTD156N, MIN(USD3MTD156N) as Min\_USD3MTD156N,

AVG(USD12MD156N) as Average\_USD12MD156N, MAX(USD12MD156N) as Max\_USD12MD156N, MIN(USD12MD156N) as Min\_USD12MD156N,

AVG(BAMLHYH0A0HYM2TRIV) as Average\_BAMLHYH0A0HYM2TRIV, MAX(BAMLHYH0A0HYM2TRIV) as Max\_BAMLHYH0A0HYM2TRIV, MIN(BAMLHYH0A0HYM2TRIV) as Min\_BAMLHYH0A0HYM2TRIV,

AVG(BAMLCC0A1AAATRIV) as Average\_BAMLCC0A1AAATRIV, MAX(BAMLCC0A1AAATRIV) as Max\_BAMLCC0A1AAATRIV, MIN(BAMLCC0A1AAATRIV) as Min\_BAMLCC0A1AAATRIV,

AVG(GOLDAMGBD228NLBM) as Average\_GOLDAMGBD228NLBM, MAX(GOLDAMGBD228NLBM) as Max\_GOLDAMGBD228NLBM, MIN(GOLDAMGBD228NLBM) as Min\_GOLDAMGBD228NLBM,

AVG(DCOILWTICO) as Average\_DCOILWTICO, MAX(DCOILWTICO) as Max\_DCOILWTICO, MIN(DCOILWTICO) as Min\_DCOILWTICO,

AVG(MHHNGSP) as Average\_MHHNGSP, MAX(MHHNGSP) as Max\_MHHNGSP, MIN(MHHNGSP) as Min\_MHHNGSP,

AVG(VXXLECLS) as Average\_VXXLECLS, MAX(VXXLECLS) as Max\_VXXLECLS, MIN(VXXLECLS) as Min\_VXXLECLS

FROM `Fred\_Crude\_Live\_Batch.Fred