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    "import matplotlib.pyplot as plt"
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    "Glucose = resultado en prueba de glucosa; variable cuantitativa discreta\n",
    "Outcome = 0 y 1; donde \"0\" indica un paciente sano y \"1\" indica un paciente diabético;
variable cuantitativa discreta"
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      "df.shape"
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         "\n",
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"     Pregnancies  Glucose  BloodPressure  SkinThickness  Insulin   BMI  \\\n",
```

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        "\n",
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       "---  ------                    --------------  -----  \n",
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       " 4   Insulin                   768 non-null    int64  \n",
       " 5   BMI                       768 non-null    float64\n",
       " 6   DiabetesPedigreeFunction  768 non-null    float64\n",
       " 7   Age                       768 non-null    int64  \n",
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     "#Muestra el total de datos, las columnas y su tipo correspondiente, dice si contiene nulos o
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       "Insulin                    186\n",
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       "DiabetesPedigreeFunction   517\n",
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       "Outcome                      2\n",
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 "\n",
 "              BMI  DiabetesPedigreeFunction         Age     Outcome  \n",
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```

```
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     "df.describe()"
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```
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    "df.Pregnancies.unique()"
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       "       106, 171, 159, 146,  71, 105, 101, 176, 150,  73, 187,  84,  44,\n",
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        "Name: Pregnancies, dtype: int64\n"
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      "mean_pregnancies = df['Pregnancies'].mean()\n",
      "median_pregnancies = df['Pregnancies'].median()\n",
      "mode_pregnancies = df['Pregnancies'].mode()\n",
      "print(\"Mean_pregnancies:\",mean_pregnancies)\n",
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      "print(\"Mode_pregnancies:\",mode_pregnancies)"
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      "La cantidad de embarazos al centro es 3  \n",
      "La cantidad de embarazos más repetida fue de 0 y 1"
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       ]
      }
```

```
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      "Name: Outcome, dtype: int64\n"
     ]
    }
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    "median_outcome = df['Outcome'].median()\n",
    "mode_outcome = df['Outcome'].mode()\n",
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    "El resultado más repetido fue de 0"
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        "4      68\n",
        "5      57\n",
        "6      50\n",
        "7      45\n",
        "8      38\n",
        "9      28\n",
        "10     24\n",
        "11     11\n",
        "13     10\n",
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        "       ..\n",
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     "# nombreDataframe['columna'].value_counts()\n",
```

```
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         "0     111\n",
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         "6      50\n",
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         "9      28\n",
         "10     24\n",
         "11     11\n",
         "13     10\n",
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         "15      1\n",
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         "99     17\n",
         "100    17\n",
         "111    14\n",
         "129    14\n",
         "125    14\n",
```

```
        "       ..\n",
        "191     1\n",
        "177     1\n",
        "44      1\n",
        "62      1\n",
        "190     1\n",
        "Name: count, Length: 136, dtype: int64"
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     "# nombreDataframe['columna'].value_counts()\n",
     "df[\"Glucose\"].value_counts()"
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        "0    500\n",
        "1    268\n",
        "Name: count, dtype: int64"
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     "# nombreDataframe['columna'].value_counts()\n",
     "df[\"Outcome\"].value_counts()"
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     "# Crear variable totalPregDiabetic que incluya la suma de las columnas Pregnancies y Outcome con
  valor \"1\"\n",
     "# Mostrar el total por cada tamaño de familia\n",
     "conteo_preg = df[\"Pregnancies\"].count()\n",
     "conteo_outcome = (df[\"Outcome\"] == 1).sum()\n",
     "df[\"totalPregDiabetic\"] = df[\"Outcome\"] + (df[\"Pregnancies\"] == 1).astype(int)"
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        "0              6      148             72             35        0  33.6   \n",
        "1              1       85             66             29        0  26.6   \n",
        "2              8      183             64              0        0  23.3   \n",
        "3              1       89             66             23       94  28.1   \n",
        "4              0      137             40             35      168  43.1   \n",
        "..           ...      ...            ...            ...      ...   ...   \n",
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        "764            2      122             70             27        0  36.8   \n",
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        "766            1      126             60              0        0  30.1   \n",
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        "\n",
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        "0                       0.627   50        1                  1  \n",
        "1                       0.351   31        0                  1  \n",
        "2                       0.672   32        1                  1  \n",
        "3                       0.167   21        0                  1  \n",
        "4                       2.288   33        1                  1  \n",
        "..                        ...  ...      ...                ...  \n",
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     "SkinThickness                35.000\n",
     "Insulin                       0.000\n",
     "BMI                          33.600\n",
     "DiabetesPedigreeFunction      0.627\n",
     "Age                          50.000\n",
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     "totalPregDiabetic             1.000\n",
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 "      <th>Insulin</th>\n",
 "      <th>BMI</th>\n",
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 "1            1       85             66             29        0  26.6   \n",
 "2            8      183             64              0        0  23.3   \n",
 "\n",
 "   DiabetesPedigreeFunction  Age  Outcome  totalPregDiabetic  \n",
```

```
        "0                    0.627   50        1                    1  \n",
        "1                    0.351   31        0                    1  \n",
        "2                    0.672   32        1                    1  "
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    "2. Si tuvieras que eliminar variables, ¿cuáles quitarías y por qué? Eliminaría los datos de \"Insulin\" y \"SkinThickness\", debido a su alto número de datos con \"0\" que deberían ser \"null\". 374 y 227, respectivamente.\n",
    "3. Si comparas el rango de las variables (min-max), ¿todas están en rangos similares? Describe sus rangos. Tomando en cuenta que el dato mínimo en \"Pregnancies\" es \"0\" y el máximo es \"17\", no se encuentran en rangos similares. En cuanto a \"Glucose\", de igual manera, el dato mínimo es \"0\", cuando este dato debería tomarse como \"null\". Debido a esto, en comparación con el dato máximo de \"199\" el rango es grande. Respecto a \"Outcome\", los datos \"0\" y \"1\" se utilizan como \"sano\" y \"diabético\", por esto, el rango no es relevante.\n",
    "4. ¿Existen variables que tengan datos atípicos? Describe cuáles sí o no. Algunos datos de \"Insulin\", \"Glucose\", \"BMI\", \"BloodPressure\" y \"SkinThickness\" aparecen con \"0\" en lugar de \"null\", lo que puede afectar los resultados.\n",
    "5. ¿Existe correlación alta entre variables? Describe algunas, indicando si es correlación positiva o negativa. Hay una correlación positiva mayor a 0.50 entre las variables Age-totalPregDiabetic (0.556) y Age-Pregnancies (0.544). Las correlaciones negativas no son relevantes."
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      "SkinThickness: Min=0, Max=99, Rango=99\n",
      "Insulin: Min=0, Max=846, Rango=846\n",
      "BMI: Min=0.0, Max=67.1, Rango=67.1\n",
      "DiabetesPedigreeFunction: Min=0.078, Max=2.42, Rango=2.342\n",
      "Age: Min=21, Max=81, Rango=60\n",
      "Outcome: Min=0, Max=1, Rango=1\n",
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