3_1 __ .

15. : - MySQL . - Excel . - CSV
. : .

1

3

1. Excel (_ .xlsx)

```python
import pandas as pd
import numpy as np

#
streets = [
    '     ', '    ', '       ', '       ', '        ', '      ', '      ', '       ',
    '        ', '        ', '       ', '       ', '      ', '       ', '       ',
    '        ', '       ', '       ', '       ', '       ', '       ', '        ', '       ',
    '       ', '       ', '         ', '       ', '        ', '       ', '    '
]

#
data = {
    'id_object': np.random.randint(1, 101, 300),  #       id      ( 1   100)
    'mark': np.random.randint(1, 6, 300),  #               1   5
    'date_mark': pd.to_datetime(np.random.choice(pd.
 ↪date_range(start='2023-01-01', end='2023-12-31', freq='D'), 300))  #        ␣
 ↪
}

#       DataFrame
df_excel = pd.DataFrame(data)

#          Excel
df_excel.to_excel('   _      .xlsx', index=False)
```

2. SQL (_ .sql)

```python
import pandas as pd
import numpy as np

#
streets = [
    '     ', '    ', '       ', '      ', '        ', '      ', '      ', '      ',
    '        ', '         ', '        ', '       ', '         ', '     ', '       ',
    '         ', '        ', '      ', '       ', '      ', '      ', '        ', '        ',
    '       ', '       ', '         ', '       ', '        ', '         ', '      '
]

#
data = {
    '    ': [f'  . {np.random.choice(streets)}, {i}' for i in range(1, 301)],  #
    '  _      ': np.random.choice(['      ', '          ', '    ', '          '], 300),  #
    '     ': np.random.uniform(50, 1500, 300).round(2),  #
    '  _       ': pd.to_datetime(np.random.choice(pd.
date_range(start='1950-01-01', end='2023-12-31', freq='D'), 300))  #
}

#       DataFrame
df_sql = pd.DataFrame(data)

#        SQL-
sql_queries = []
for _, row in df_sql.iterrows():
    sql_queries.append(
        f"('{row['    ']}', '{row['  _     ']}', {row['     ']}, '{row['  _      ']}.
strftime('%Y-%m-%d')}')"
    )

#          SQL
with open('   _        .sql', 'w', encoding='utf-8') as f:
    f.write("CREATE TABLE    _           (\n")
    f.write("    id INT PRIMARY KEY AUTO_INCREMENT,\n")
    f.write("          VARCHAR(255) NOT NULL,\n")
    f.write("      _         VARCHAR(50) NOT NULL,\n")
    f.write("            DECIMAL(10, 2) NOT NULL,\n")
    f.write("        _           DATE NOT NULL\n")
    f.write(");\n\n")
    f.write("INSERT INTO    _          ( ,   _     ,     ,    _      ) VALUES\n")
    f.write(",\n".join(sql_queries) + ";\n")
```

3. CSV (_ .csv)

```python
import pandas as pd
import numpy as np

# 
data = {
    'id': range(1, 301),  # 
    'id_   ': np.random.randint(1, 100, 300),  # 
    '   _   ': pd.date_range(start='2023-01-01', periods=300, freq='D'),  # ↵
    '   _   ': np.random.randint(30000, 80000, 300),  # 
    '   _   ': np.random.choice(['    ', '        '], 300)  # 
}

#     DataFrame
df_csv = pd.DataFrame(data)

#        CSV
df_csv.to_csv('   _   .csv', index=False)
```

2

```python
ls
```

sample_data/   _   .csv   _   .sql
    _   .xlsx

```python
# 
!pip install pandas numpy openpyxl mysql-connector-python sqlalchemy

# 
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
from sqlalchemy import create_engine
import mysql.connector

#       Google Colab
# from google.colab import files
# uploaded = files.upload()
```

```
Requirement already satisfied: pandas in /usr/local/lib/python3.11/dist-packages
(2.2.2)
Requirement already satisfied: numpy in /usr/local/lib/python3.11/dist-packages
(1.26.4)
```

```
Requirement already satisfied: openpyxl in /usr/local/lib/python3.11/dist-
packages (3.1.5)
Collecting mysql-connector-python
  Downloading
mysql_connector_python-9.2.0-cp311-cp311-manylinux_2_28_x86_64.whl.metadata (6.0
kB)
Requirement already satisfied: sqlalchemy in /usr/local/lib/python3.11/dist-
packages (2.0.38)
Requirement already satisfied: python-dateutil>=2.8.2 in
/usr/local/lib/python3.11/dist-packages (from pandas) (2.8.2)
Requirement already satisfied: pytz>=2020.1 in /usr/local/lib/python3.11/dist-
packages (from pandas) (2025.1)
Requirement already satisfied: tzdata>=2022.7 in /usr/local/lib/python3.11/dist-
packages (from pandas) (2025.1)
Requirement already satisfied: et-xmlfile in /usr/local/lib/python3.11/dist-
packages (from openpyxl) (2.0.0)
Requirement already satisfied: greenlet!=0.4.17 in
/usr/local/lib/python3.11/dist-packages (from sqlalchemy) (3.1.1)
Requirement already satisfied: typing-extensions>=4.6.0 in
/usr/local/lib/python3.11/dist-packages (from sqlalchemy) (4.12.2)
Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.11/dist-
packages (from python-dateutil>=2.8.2->pandas) (1.17.0)
Downloading mysql_connector_python-9.2.0-cp311-cp311-manylinux_2_28_x86_64.whl
(34.0 MB)
                           34.0/34.0 MB
50.1 MB/s eta 0:00:00
Installing collected packages: mysql-connector-python
Successfully installed mysql-connector-python-9.2.0
```

```python
[13]:  #     Excel
       df_excel = pd.read_excel('    _     .xlsx')

       #     CSV
       df_csv = pd.read_csv('    _    .csv')

       #              MySQL (       ,                      )
       #          MySQL
       conn = mysql.connector.connect(
           host="95.131.149.21",
           user="mgpu_ico_etl_15",
           password="K8DQAKTc",
           database="mgpu_ico_etl_15"
       )


       #
       df_mysql = pd.read_sql("SELECT * FROM     _        ", conn)
```

4

```
#
conn.close()
```

<ipython-input-13-735a11d23918>:17: UserWarning: pandas only supports SQLAlchemy
connectable (engine/connection) or database string URI or sqlite3 DBAPI2
connection. Other DBAPI2 objects are not tested. Please consider using
SQLAlchemy.
  df_mysql = pd.read_sql("SELECT * FROM   _   ", conn)

2.0.1   df_excel

```
[14]: df_excel.head()
```

```
[14]:    id_object  mark  date_mark
      0         37     1 2023-08-22
      1          6     3 2023-03-13
      2         68     2 2023-10-26
      3         89     1 2023-12-01
      4         35     2 2023-12-26
```

```
[15]: df_excel.describe()
```

```
[15]:             id_object       mark            date_mark
      count  300.000000  300.00000                  300
      mean    48.776667    2.99000  2023-06-30 15:40:48
      min      1.000000    1.00000  2023-01-02 00:00:00
      25%     23.750000    2.00000  2023-04-03 00:00:00
      50%     46.000000    3.00000  2023-07-11 00:00:00
      75%     73.000000    4.00000  2023-09-28 00:00:00
      max    100.000000    5.00000  2023-12-28 00:00:00
      std     29.449125    1.43647                  NaN
```

```
[16]: df_excel.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 300 entries, 0 to 299
Data columns (total 3 columns):
 #   Column     Non-Null Count  Dtype
---  ------     --------------  -----
 0   id_object  300 non-null    int64
 1   mark       300 non-null    int64
 2   date_mark  300 non-null    datetime64[ns]
dtypes: datetime64[ns](1), int64(2)
memory usage: 7.2 KB
```

```
[17]: df_excel = df_excel.drop_duplicates()   #
```

2.0.2   df_csv

```
[18]: df_csv.head()
```

```
[18]:    id  id_       _          _             _
      0   1       64    2023-01-01        36980
      1   2       83    2023-01-02        36972
      2   3       67    2023-01-03        55614
      3   4       90    2023-01-04        64423
      4   5        5    2023-01-05        60842
```

```
[19]: df_csv.describe()
```

```
[19]:                 id          id_              _
      count  300.000000   300.000000     300.000000
      mean   150.500000    52.440000   53963.206667
      std     86.746758    28.372223   14279.541600
      min      1.000000     1.000000   30328.000000
      25%     75.750000    30.000000   41223.250000
      50%    150.500000    54.500000   53029.000000
      75%    225.250000    77.000000   66469.500000
      max    300.000000    99.000000   79547.000000
```

```
[20]: df_csv.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 300 entries, 0 to 299
Data columns (total 5 columns):
 #   Column        Non-Null Count  Dtype
---  ------        --------------  -----
 0   id               300 non-null    int64
 1   id_              300 non-null    int64
 2    _               300 non-null    object
 3    _               300 non-null    int64
 4    _               300 non-null    object
dtypes: int64(3), object(2)
memory usage: 11.8+ KB
```

```
[21]: df_csv[' _   '] = pd.to_datetime(df_csv[' _   '])
```

```
[22]: df_csv.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 300 entries, 0 to 299
Data columns (total 5 columns):
 #   Column        Non-Null Count  Dtype
---  ------        --------------  -----
 0   id               300 non-null    int64
```

```
 1   id_          300 non-null    int64
 2   _            300 non-null    datetime64[ns]
 3   _            300 non-null    int64
 4   _            300 non-null    object
dtypes: datetime64[ns](1), int64(3), object(1)
memory usage: 11.8+ KB
```

2.0.3   df_mysql

```
[23]: df_mysql.head()
```

```
[23]:    id                    _              _
      0   1   .      , 1        982.96     2004-07-08
      1   2   .      , 2       1320.56     1989-09-27
      2   3   .      , 3       1326.79     1985-08-18
      3   4      .   , 4         133.33      1984-06-21
      4   5      .   , 5         541.16      1973-07-18
```

```
[24]: df_mysql.describe()
```

```
[24]:              id
      count  300.000000   300.000000
      mean   150.500000   776.602500
      std     86.746758   423.572519
      min      1.000000    52.480000
      25%     75.750000   425.850000
      50%    150.500000   757.945000
      75%    225.250000  1123.210000
      max    300.000000  1498.060000
```

```
[25]: df_mysql.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 300 entries, 0 to 299
Data columns (total 5 columns):
 #   Column         Non-Null Count  Dtype
---  ------         --------------  -----
 0   id             300 non-null    int64
 1                  300 non-null    object
 2   _              300 non-null    object
 3                  300 non-null    float64
 4       _          300 non-null    object
dtypes: float64(1), int64(1), object(3)
memory usage: 11.8+ KB
```

```
[26]: df_mysql['  _    '] = pd.to_datetime(df_mysql['  _    '])  #
```

```
[27]: df_mysql.isna()
```

```
[27]:          id        _              _
      0     False  False        False    False           False
      1     False  False        False    False           False
      2     False  False        False    False           False
      3     False  False        False    False           False
      4     False  False        False    False           False
      ..      …      …        …        …             …
      295   False  False        False    False           False
      296   False  False        False    False           False
      297   False  False        False    False           False
      298   False  False        False    False           False
      299   False  False        False    False           False

      [300 rows x 5 columns]
```

2.0.4

```
[72]: #
      merged_df = pd.merge(df_mysql, df_excel, left_on='id', right_on='id_object',␣
       ↪how='inner')
      merged_df = pd.merge(merged_df, df_csv, left_on='id', right_on='id_     ',␣
       ↪how='inner')

      merged_df = merged_df[[
          '    ', '    _    ', '      ', '    _      ',
          'mark', 'date_mark', '    _    ', '    _      ', '    _    '
      ]]
      print(merged_df.head())
```

```
               _                    _      mark  date_mark  \
      0   .     , 1            982.96     2004-07-08      3 2023-12-18
      1   .     , 1            982.96     2004-07-08      3 2023-12-18
      2   .     , 1            982.96     2004-07-08      3 2023-05-13
      3   .     , 1            982.96     2004-07-08      3 2023-05-13
      4   .     , 1            982.96     2004-07-08      3 2023-08-07


           _          _         _
      0   2023-04-03         40873
      1   2023-07-02         55183
      2   2023-04-03         40873
```

```
3     2023-07-02          55183
4     2023-04-03          40873
```

```python
from tabulate import tabulate

merged_df_ozenka = pd.merge(df_mysql, df_excel, left_on='id',
 ↪right_on='id_object', how='inner')
merged_df_ozenka = pd.merge(merged_df_ozenka, df_csv, left_on='id',
 ↪right_on='id_    ', how='inner')


#
result_df = merged_df_ozenka.groupby(['    _    ', '    _    ', '    _    ']).agg(
        =('    ', 'first'),
      _    =('    _    ', 'first'),
      =('    ', 'first'),
    _      =('    _      ', 'first'),
    _    =('mark', 'mean'),
      _  _    =('date_mark', 'max')
).reset_index()


#
result_df['    _    '] = result_df['    _    '].round(2)

novaya_table = (
    result_df.head(30)
    .style
    .format('{:.2f}', subset=['    _    '])   #                 "    _    "
    .format({
        '    ': lambda x: x.upper(),   #
        '    _    ': lambda x: x.lower(),   #
        '    _    ': lambda x: '  ' if x == '      ' else '  '   #
    })
    .bar(subset=['    _    '],   #
        align='mid',
        color=['#ffcccc', '#ccffcc'],   #
        vmin=result_df['    _    '].min(),
        vmax=result_df['    _    '].max())
    .set_properties(**{'text-align': 'center'})   #
)

novaya_table
```

[71]: <pandas.io.formats.style.Styler at 0x7a2556567950>

3
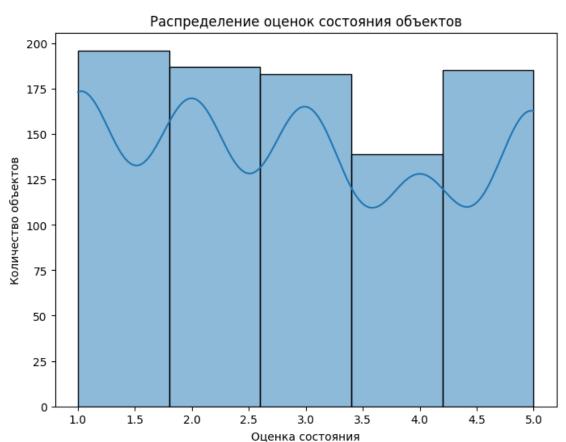
```python
[73]: #    .
      mean_rating = merged_df['mark'].mean()
      print(f"   .                  : {mean_rating:.2f}")

      #
      total_rent = merged_df['   _    '].sum()
      print(f"       : {total_rent}   .")

      #    .        .
      payment_status = merged_df['    _   '].value_counts()
      print("         :")
      print(payment_status)

      #
      mean_rating_by_type = merged_df.groupby('   _    ')['mark'].mean()
      print("\n                        :")
      print(mean_rating_by_type)

      #
      total_rent_by_type = merged_df.groupby('   _   ')['    _    '].sum()
      print("\n                        :")
      print(total_rent_by_type)

      #
      object_count_by_type = merged_df['   _    '].value_counts()
      print("\n                 :")
      print(object_count_by_type)

      #
      mean_payment_by_status = merged_df.groupby('     _   ')['    _    '].mean()
      print("\n                        :")
      print(mean_payment_by_status)
```

```
    .               : 2.92
        : 48648663   .
        :

    _
            449
          441
Name: count, dtype: int64


                      :

    _
              2.984906
            2.663415
                3.074074
```

```
                  2.952381
    Name: mark, dtype: float64


                            :

      -
                  14211312
              11462939
                  10207812
              12766600
    Name:      _    , dtype: int64


                      :

      -
                  265
            231
            205
                189
    Name: count, dtype: int64


                      :

      -
            56496.111111
            52859.416481
    Name:      _    , dtype: float64
```
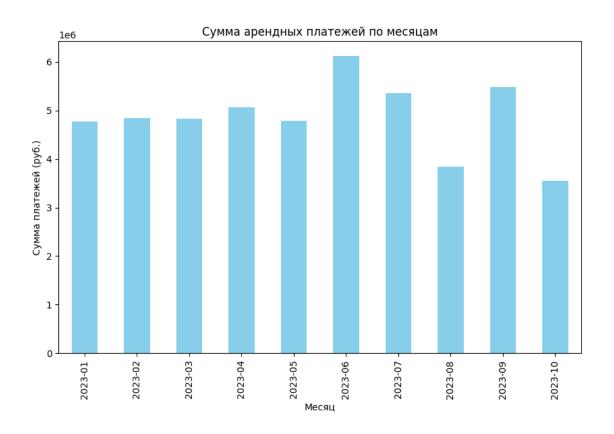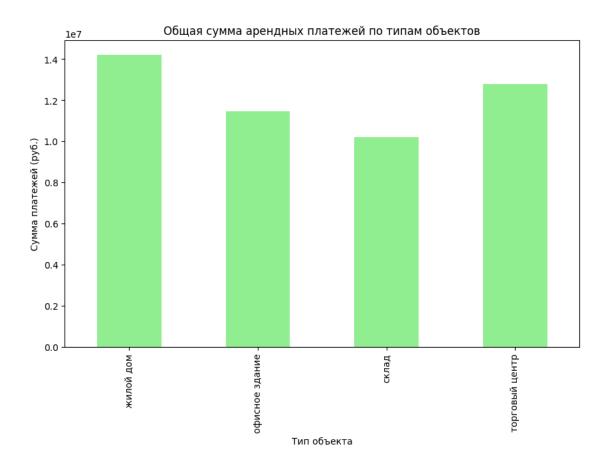
[75]:
```python
import matplotlib.pyplot as plt
import seaborn as sns

#
plt.figure(figsize=(8, 6))
sns.histplot(merged_df['mark'], bins=5, kde=True)
plt.title('                            ')
plt.xlabel('           ')
plt.ylabel('             ')
plt.show()

#
merged_df['   '] = merged_df['   _    '].dt.to_period('M')
monthly_rent = merged_df.groupby('   ')['   _    '].sum()

plt.figure(figsize=(10, 6))
monthly_rent.plot(kind='bar', color='skyblue')
plt.title('                    ')
plt.xlabel('   ')
plt.ylabel('          ( .)')
plt.show()
```

```
#
total_rent_by_type = merged_df.groupby('  _    ')['   _      '].sum()

plt.figure(figsize=(10, 6))
total_rent_by_type.plot(kind='bar', color='lightgreen')
plt.title('                                ')
plt.xlabel('       ')
plt.ylabel('           ( .)')
plt.show()
```

Распределение оценок состояния объектов

Сумма арендных платежей по месяцам

Общая сумма арендных платежей по типам объектов


```
[76]: #
merged_df['   '] = merged_df['  _    '].dt.to_period('M')
payment_status_by_month = merged_df.groupby(['  ', '  _    ']).size().unstack()

print("                   :")
print(payment_status_by_month)

plt.figure(figsize=(12, 6))
payment_status_by_month.plot(kind='bar', stacked=True)
plt.title('                ')
plt.xlabel('   ')
plt.ylabel('            ')
plt.show()
```

                :

   –

2023-01	56	27
2023-02	33	50
2023-03	54	37

```
2023-04                64         32
2023-05                24         65
2023-06                57         46
2023-07                41         50
2023-08                36         46
2023-09                47         52
2023-10                29         44
```

```
<Figure size 1200x600 with 0 Axes>
```


4

```
[87]: !apt-get install pandoc
```

```
Reading package lists… Done
Building dependency tree… Done
Reading state information… Done
The following additional packages will be installed:
```

```
  libcmark-gfm-extensions0.29.0.gfm.3 libcmark-gfm0.29.0.gfm.3 pandoc-data
Suggested packages:
  texlive-luatex pandoc-citeproc context wkhtmltopdf librsvg2-bin groff ghc
nodejs php python
  libjs-mathjax libjs-katex citation-style-language-styles
The following NEW packages will be installed:
  libcmark-gfm-extensions0.29.0.gfm.3 libcmark-gfm0.29.0.gfm.3 pandoc pandoc-
data
0 upgraded, 4 newly installed, 0 to remove and 29 not upgraded.
Need to get 20.6 MB of archives.
After this operation, 156 MB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu jammy/universe amd64 libcmark-
gfm0.29.0.gfm.3 amd64 0.29.0.gfm.3-3 [115 kB]
Get:2 http://archive.ubuntu.com/ubuntu jammy/universe amd64 libcmark-gfm-
extensions0.29.0.gfm.3 amd64 0.29.0.gfm.3-3 [25.1 kB]
Get:3 http://archive.ubuntu.com/ubuntu jammy/universe amd64 pandoc-data all
2.9.2.1-3ubuntu2 [81.8 kB]
Get:4 http://archive.ubuntu.com/ubuntu jammy/universe amd64 pandoc amd64
2.9.2.1-3ubuntu2 [20.3 MB]
Fetched 20.6 MB in 3s (6,497 kB/s)
Selecting previously unselected package libcmark-gfm0.29.0.gfm.3:amd64.
(Reading database … 161776 files and directories currently installed.)
Preparing to unpack …/libcmark-gfm0.29.0.gfm.3_0.29.0.gfm.3-3_amd64.deb …
Unpacking libcmark-gfm0.29.0.gfm.3:amd64 (0.29.0.gfm.3-3) …
Selecting previously unselected package libcmark-gfm-
extensions0.29.0.gfm.3:amd64.
Preparing to unpack …/libcmark-gfm-
extensions0.29.0.gfm.3_0.29.0.gfm.3-3_amd64.deb …
Unpacking libcmark-gfm-extensions0.29.0.gfm.3:amd64 (0.29.0.gfm.3-3) …
Selecting previously unselected package pandoc-data.
Preparing to unpack …/pandoc-data_2.9.2.1-3ubuntu2_all.deb …
Unpacking pandoc-data (2.9.2.1-3ubuntu2) …
Selecting previously unselected package pandoc.
Preparing to unpack …/pandoc_2.9.2.1-3ubuntu2_amd64.deb …
Unpacking pandoc (2.9.2.1-3ubuntu2) …
Setting up libcmark-gfm0.29.0.gfm.3:amd64 (0.29.0.gfm.3-3) …
Setting up libcmark-gfm-extensions0.29.0.gfm.3:amd64 (0.29.0.gfm.3-3) …
Setting up pandoc-data (2.9.2.1-3ubuntu2) …
Setting up pandoc (2.9.2.1-3ubuntu2) …
Processing triggers for man-db (2.10.2-1) …
Processing triggers for libc-bin (2.35-0ubuntu3.8) …
/sbin/ldconfig.real: /usr/local/lib/libtcm.so.1 is not a symbolic link

/sbin/ldconfig.real: /usr/local/lib/libur_loader.so.0 is not a symbolic link

/sbin/ldconfig.real: /usr/local/lib/libhwloc.so.15 is not a symbolic link

/sbin/ldconfig.real: /usr/local/lib/libur_adapter_opencl.so.0 is not a symbolic
```

link

/sbin/ldconfig.real: /usr/local/lib/libtcm_debug.so.1 is not a symbolic link

/sbin/ldconfig.real: /usr/local/lib/libur_adapter_level_zero.so.0 is not a symbolic link

/sbin/ldconfig.real: /usr/local/lib/libtbbbind.so.3 is not a symbolic link

/sbin/ldconfig.real: /usr/local/lib/libtbbmalloc_proxy.so.2 is not a symbolic link

/sbin/ldconfig.real: /usr/local/lib/libtbbbind_2_0.so.3 is not a symbolic link

/sbin/ldconfig.real: /usr/local/lib/libtbbmalloc.so.2 is not a symbolic link

/sbin/ldconfig.real: /usr/local/lib/libtbb.so.12 is not a symbolic link

/sbin/ldconfig.real: /usr/local/lib/libtbbbind_2_5.so.3 is not a symbolic link

/sbin/ldconfig.real: /usr/local/lib/libumf.so.0 is not a symbolic link

[83]: `!apt-get install texlive-xetex texlive-fonts-recommended texlive-plain-generic`

```
Reading package lists… Done
Building dependency tree… Done
Reading state information… Done
The following additional packages will be installed:
  dvisvgm fonts-droid-fallback fonts-lato fonts-lmodern fonts-noto-mono fonts-
texgyre
  fonts-urw-base35 libapache-pom-java libcommons-logging-java libcommons-parent-
java
  libfontbox-java libfontenc1 libgs9 libgs9-common libidn12 libijs-0.35
libjbig2dec0 libkpathsea6
  libpdfbox-java libptexenc1 libruby3.0 libsynctex2 libteckit0 libtexlua53
libtexluajit2 libwoff1
  libzzip-0-13 lmodern poppler-data preview-latex-style rake ruby ruby-net-
telnet ruby-rubygems
  ruby-webrick ruby-xmlrpc ruby3.0 rubygems-integration t1utils teckit tex-
common tex-gyre
  texlive-base texlive-binaries texlive-latex-base texlive-latex-extra texlive-
latex-recommended
  texlive-pictures tipa xfonts-encodings xfonts-utils
Suggested packages:
  fonts-noto fonts-freefont-otf | fonts-freefont-ttf libavalon-framework-java
  libcommons-logging-java-doc libexcalibur-logkit-java liblog4j1.2-java poppler-
utils ghostscript
```

```
  fonts-japanese-mincho | fonts-ipafont-mincho fonts-japanese-gothic | fonts-
ipafont-gothic
  fonts-arphic-ukai fonts-arphic-uming fonts-nanum ri ruby-dev bundler debhelper
gv
  | postscript-viewer perl-tk xpdf | pdf-viewer xzdec texlive-fonts-recommended-
doc
  texlive-latex-base-doc python3-pygments icc-profiles libfile-which-perl
  libspreadsheet-parseexcel-perl texlive-latex-extra-doc texlive-latex-
recommended-doc
  texlive-luatex texlive-pstricks dot2tex prerex texlive-pictures-doc vprerex
default-jre-headless
  tipa-doc
The following NEW packages will be installed:
  dvisvgm fonts-droid-fallback fonts-lato fonts-lmodern fonts-noto-mono fonts-
texgyre
  fonts-urw-base35 libapache-pom-java libcommons-logging-java libcommons-parent-
java
  libfontbox-java libfontenc1 libgs9 libgs9-common libidn12 libijs-0.35
libjbig2dec0 libkpathsea6
  libpdfbox-java libptexenc1 libruby3.0 libsynctex2 libteckit0 libtexlua53
libtexluajit2 libwoff1
  libzzip-0-13 lmodern poppler-data preview-latex-style rake ruby ruby-net-
telnet ruby-rubygems
  ruby-webrick ruby-xmlrpc ruby3.0 rubygems-integration t1utils teckit tex-
common tex-gyre
  texlive-base texlive-binaries texlive-fonts-recommended texlive-latex-base
texlive-latex-extra
  texlive-latex-recommended texlive-pictures texlive-plain-generic texlive-xetex
tipa
  xfonts-encodings xfonts-utils
0 upgraded, 54 newly installed, 0 to remove and 29 not upgraded.
Need to get 182 MB of archives.
After this operation, 571 MB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu jammy/main amd64 fonts-droid-fallback all
1:6.0.1r16-1.1build1 [1,805 kB]
Get:2 http://archive.ubuntu.com/ubuntu jammy/main amd64 fonts-lato all 2.0-2.1
[2,696 kB]
Get:3 http://archive.ubuntu.com/ubuntu jammy/main amd64 poppler-data all
0.4.11-1 [2,171 kB]
Get:4 http://archive.ubuntu.com/ubuntu jammy/universe amd64 tex-common all 6.17
[33.7 kB]
Get:5 http://archive.ubuntu.com/ubuntu jammy/main amd64 fonts-urw-base35 all
20200910-1 [6,367 kB]
Get:6 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 libgs9-common
all 9.55.0~dfsg1-0ubuntu5.10 [752 kB]
Get:7 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 libidn12 amd64
1.38-4ubuntu1 [60.0 kB]
Get:8 http://archive.ubuntu.com/ubuntu jammy/main amd64 libijs-0.35 amd64
```

0.35-15build2 [16.5 kB]
Get:9 http://archive.ubuntu.com/ubuntu jammy/main amd64 libjbig2dec0 amd64
0.19-3build2 [64.7 kB]
Get:10 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 libgs9 amd64
9.55.0~dfsg1-0ubuntu5.10 [5,031 kB]
Get:11 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 libkpathsea6
amd64 2021.20210626.59705-1ubuntu0.2 [60.4 kB]
Get:12 http://archive.ubuntu.com/ubuntu jammy/main amd64 libwoff1 amd64
1.0.2-1build4 [45.2 kB]
Get:13 http://archive.ubuntu.com/ubuntu jammy/universe amd64 dvisvgm amd64
2.13.1-1 [1,221 kB]
Get:14 http://archive.ubuntu.com/ubuntu jammy/universe amd64 fonts-lmodern all
2.004.5-6.1 [4,532 kB]
Get:15 http://archive.ubuntu.com/ubuntu jammy/main amd64 fonts-noto-mono all
20201225-1build1 [397 kB]
Get:16 http://archive.ubuntu.com/ubuntu jammy/universe amd64 fonts-texgyre all
20180621-3.1 [10.2 MB]
Get:17 http://archive.ubuntu.com/ubuntu jammy/universe amd64 libapache-pom-java
all 18-1 [4,720 B]
Get:18 http://archive.ubuntu.com/ubuntu jammy/universe amd64 libcommons-parent-
java all 43-1 [10.8 kB]
Get:19 http://archive.ubuntu.com/ubuntu jammy/universe amd64 libcommons-logging-
java all 1.2-2 [60.3 kB]
Get:20 http://archive.ubuntu.com/ubuntu jammy/main amd64 libfontenc1 amd64
1:1.1.4-1build3 [14.7 kB]
Get:21 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 libptexenc1
amd64 2021.20210626.59705-1ubuntu0.2 [39.1 kB]
Get:22 http://archive.ubuntu.com/ubuntu jammy/main amd64 rubygems-integration
all 1.18 [5,336 B]
Get:23 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 ruby3.0 amd64
3.0.2-7ubuntu2.8 [50.1 kB]
Get:24 http://archive.ubuntu.com/ubuntu jammy/main amd64 ruby-rubygems all
3.3.5-2 [228 kB]
Get:25 http://archive.ubuntu.com/ubuntu jammy/main amd64 ruby amd64 1:3.0~exp1
[5,100 B]
Get:26 http://archive.ubuntu.com/ubuntu jammy/main amd64 rake all 13.0.6-2 [61.7
kB]
Get:27 http://archive.ubuntu.com/ubuntu jammy/main amd64 ruby-net-telnet all
0.1.1-2 [12.6 kB]
Get:28 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 ruby-webrick
all 1.7.0-3ubuntu0.1 [52.1 kB]
Get:29 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 ruby-xmlrpc all
0.3.2-1ubuntu0.1 [24.9 kB]
Get:30 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 libruby3.0
amd64 3.0.2-7ubuntu2.8 [5,113 kB]
Get:31 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 libsynctex2
amd64 2021.20210626.59705-1ubuntu0.2 [55.6 kB]
Get:32 http://archive.ubuntu.com/ubuntu jammy/universe amd64 libteckit0 amd64

```
2.5.11+ds1-1 [421 kB]
Get:33 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 libtexlua53
amd64 2021.20210626.59705-1ubuntu0.2 [120 kB]
Get:34 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 libtexluajit2
amd64 2021.20210626.59705-1ubuntu0.2 [267 kB]
Get:35 http://archive.ubuntu.com/ubuntu jammy/universe amd64 libzzip-0-13 amd64
0.13.72+dfsg.1-1.1 [27.0 kB]
Get:36 http://archive.ubuntu.com/ubuntu jammy/main amd64 xfonts-encodings all
1:1.0.5-0ubuntu2 [578 kB]
Get:37 http://archive.ubuntu.com/ubuntu jammy/main amd64 xfonts-utils amd64
1:7.7+6build2 [94.6 kB]
Get:38 http://archive.ubuntu.com/ubuntu jammy/universe amd64 lmodern all
2.004.5-6.1 [9,471 kB]
Get:39 http://archive.ubuntu.com/ubuntu jammy/universe amd64 preview-latex-style
all 12.2-1ubuntu1 [185 kB]
Get:40 http://archive.ubuntu.com/ubuntu jammy/main amd64 t1utils amd64
1.41-4build2 [61.3 kB]
Get:41 http://archive.ubuntu.com/ubuntu jammy/universe amd64 teckit amd64
2.5.11+ds1-1 [699 kB]
Get:42 http://archive.ubuntu.com/ubuntu jammy/universe amd64 tex-gyre all
20180621-3.1 [6,209 kB]
Get:43 http://archive.ubuntu.com/ubuntu jammy-updates/universe amd64 texlive-
binaries amd64 2021.20210626.59705-1ubuntu0.2 [9,860 kB]
Get:44 http://archive.ubuntu.com/ubuntu jammy/universe amd64 texlive-base all
2021.20220204-1 [21.0 MB]
Get:45 http://archive.ubuntu.com/ubuntu jammy/universe amd64 texlive-fonts-
recommended all 2021.20220204-1 [4,972 kB]
Get:46 http://archive.ubuntu.com/ubuntu jammy/universe amd64 texlive-latex-base
all 2021.20220204-1 [1,128 kB]
Get:47 http://archive.ubuntu.com/ubuntu jammy/universe amd64 libfontbox-java all
1:1.8.16-2 [207 kB]
Get:48 http://archive.ubuntu.com/ubuntu jammy/universe amd64 libpdfbox-java all
1:1.8.16-2 [5,199 kB]
Get:49 http://archive.ubuntu.com/ubuntu jammy/universe amd64 texlive-latex-
recommended all 2021.20220204-1 [14.4 MB]
Get:50 http://archive.ubuntu.com/ubuntu jammy/universe amd64 texlive-pictures
all 2021.20220204-1 [8,720 kB]
Get:51 http://archive.ubuntu.com/ubuntu jammy/universe amd64 texlive-latex-extra
all 2021.20220204-1 [13.9 MB]
Get:52 http://archive.ubuntu.com/ubuntu jammy/universe amd64 texlive-plain-
generic all 2021.20220204-1 [27.5 MB]
Get:53 http://archive.ubuntu.com/ubuntu jammy/universe amd64 tipa all 2:1.3-21
[2,967 kB]
Get:54 http://archive.ubuntu.com/ubuntu jammy/universe amd64 texlive-xetex all
2021.20220204-1 [12.4 MB]
Fetched 182 MB in 14s (12.6 MB/s)
Extracting templates from packages: 100%
Preconfiguring packages …
```

```
Selecting previously unselected package fonts-droid-fallback.
(Reading database … 124947 files and directories currently installed.)
Preparing to unpack …/00-fonts-droid-fallback_1%3a6.0.1r16-1.1build1_all.deb
…
Unpacking fonts-droid-fallback (1:6.0.1r16-1.1build1) …
Selecting previously unselected package fonts-lato.
Preparing to unpack …/01-fonts-lato_2.0-2.1_all.deb …
Unpacking fonts-lato (2.0-2.1) …
Selecting previously unselected package poppler-data.
Preparing to unpack …/02-poppler-data_0.4.11-1_all.deb …
Unpacking poppler-data (0.4.11-1) …
Selecting previously unselected package tex-common.
Preparing to unpack …/03-tex-common_6.17_all.deb …
Unpacking tex-common (6.17) …
Selecting previously unselected package fonts-urw-base35.
Preparing to unpack …/04-fonts-urw-base35_20200910-1_all.deb …
Unpacking fonts-urw-base35 (20200910-1) …
Selecting previously unselected package libgs9-common.
Preparing to unpack …/05-libgs9-common_9.55.0~dfsg1-0ubuntu5.10_all.deb …
Unpacking libgs9-common (9.55.0~dfsg1-0ubuntu5.10) …
Selecting previously unselected package libidn12:amd64.
Preparing to unpack …/06-libidn12_1.38-4ubuntu1_amd64.deb …
Unpacking libidn12:amd64 (1.38-4ubuntu1) …
Selecting previously unselected package libijs-0.35:amd64.
Preparing to unpack …/07-libijs-0.35_0.35-15build2_amd64.deb …
Unpacking libijs-0.35:amd64 (0.35-15build2) …
Selecting previously unselected package libjbig2dec0:amd64.
Preparing to unpack …/08-libjbig2dec0_0.19-3build2_amd64.deb …
Unpacking libjbig2dec0:amd64 (0.19-3build2) …
Selecting previously unselected package libgs9:amd64.
Preparing to unpack …/09-libgs9_9.55.0~dfsg1-0ubuntu5.10_amd64.deb …
Unpacking libgs9:amd64 (9.55.0~dfsg1-0ubuntu5.10) …
Selecting previously unselected package libkpathsea6:amd64.
Preparing to unpack …/10-libkpathsea6_2021.20210626.59705-1ubuntu0.2_amd64.deb
…
Unpacking libkpathsea6:amd64 (2021.20210626.59705-1ubuntu0.2) …
Selecting previously unselected package libwoff1:amd64.
Preparing to unpack …/11-libwoff1_1.0.2-1build4_amd64.deb …
Unpacking libwoff1:amd64 (1.0.2-1build4) …
Selecting previously unselected package dvisvgm.
Preparing to unpack …/12-dvisvgm_2.13.1-1_amd64.deb …
Unpacking dvisvgm (2.13.1-1) …
Selecting previously unselected package fonts-lmodern.
Preparing to unpack …/13-fonts-lmodern_2.004.5-6.1_all.deb …
Unpacking fonts-lmodern (2.004.5-6.1) …
Selecting previously unselected package fonts-noto-mono.
Preparing to unpack …/14-fonts-noto-mono_20201225-1build1_all.deb …
Unpacking fonts-noto-mono (20201225-1build1) …
```

```
Selecting previously unselected package fonts-texgyre.
Preparing to unpack …/15-fonts-texgyre_20180621-3.1_all.deb …
Unpacking fonts-texgyre (20180621-3.1) …
Selecting previously unselected package libapache-pom-java.
Preparing to unpack …/16-libapache-pom-java_18-1_all.deb …
Unpacking libapache-pom-java (18-1) …
Selecting previously unselected package libcommons-parent-java.
Preparing to unpack …/17-libcommons-parent-java_43-1_all.deb …
Unpacking libcommons-parent-java (43-1) …
Selecting previously unselected package libcommons-logging-java.
Preparing to unpack …/18-libcommons-logging-java_1.2-2_all.deb …
Unpacking libcommons-logging-java (1.2-2) …
Selecting previously unselected package libfontenc1:amd64.
Preparing to unpack …/19-libfontenc1_1%3a1.1.4-1build3_amd64.deb …
Unpacking libfontenc1:amd64 (1:1.1.4-1build3) …
Selecting previously unselected package libptexenc1:amd64.
Preparing to unpack …/20-libptexenc1_2021.20210626.59705-1ubuntu0.2_amd64.deb
…
Unpacking libptexenc1:amd64 (2021.20210626.59705-1ubuntu0.2) …
Selecting previously unselected package rubygems-integration.
Preparing to unpack …/21-rubygems-integration_1.18_all.deb …
Unpacking rubygems-integration (1.18) …
Selecting previously unselected package ruby3.0.
Preparing to unpack …/22-ruby3.0_3.0.2-7ubuntu2.8_amd64.deb …
Unpacking ruby3.0 (3.0.2-7ubuntu2.8) …
Selecting previously unselected package ruby-rubygems.
Preparing to unpack …/23-ruby-rubygems_3.3.5-2_all.deb …
Unpacking ruby-rubygems (3.3.5-2) …
Selecting previously unselected package ruby.
Preparing to unpack …/24-ruby_1%3a3.0~exp1_amd64.deb …
Unpacking ruby (1:3.0~exp1) …
Selecting previously unselected package rake.
Preparing to unpack …/25-rake_13.0.6-2_all.deb …
Unpacking rake (13.0.6-2) …
Selecting previously unselected package ruby-net-telnet.
Preparing to unpack …/26-ruby-net-telnet_0.1.1-2_all.deb …
Unpacking ruby-net-telnet (0.1.1-2) …
Selecting previously unselected package ruby-webrick.
Preparing to unpack …/27-ruby-webrick_1.7.0-3ubuntu0.1_all.deb …
Unpacking ruby-webrick (1.7.0-3ubuntu0.1) …
Selecting previously unselected package ruby-xmlrpc.
Preparing to unpack …/28-ruby-xmlrpc_0.3.2-1ubuntu0.1_all.deb …
Unpacking ruby-xmlrpc (0.3.2-1ubuntu0.1) …
Selecting previously unselected package libruby3.0:amd64.
Preparing to unpack …/29-libruby3.0_3.0.2-7ubuntu2.8_amd64.deb …
Unpacking libruby3.0:amd64 (3.0.2-7ubuntu2.8) …
Selecting previously unselected package libsynctex2:amd64.
Preparing to unpack …/30-libsynctex2_2021.20210626.59705-1ubuntu0.2_amd64.deb
```

…
Unpacking libsynctex2:amd64 (2021.20210626.59705-1ubuntu0.2) …
Selecting previously unselected package libteckit0:amd64.
Preparing to unpack …/31-libteckit0_2.5.11+ds1-1_amd64.deb …
Unpacking libteckit0:amd64 (2.5.11+ds1-1) …
Selecting previously unselected package libtexlua53:amd64.
Preparing to unpack …/32-libtexlua53_2021.20210626.59705-1ubuntu0.2_amd64.deb
…
Unpacking libtexlua53:amd64 (2021.20210626.59705-1ubuntu0.2) …
Selecting previously unselected package libtexluajit2:amd64.
Preparing to unpack
…/33-libtexluajit2_2021.20210626.59705-1ubuntu0.2_amd64.deb …
Unpacking libtexluajit2:amd64 (2021.20210626.59705-1ubuntu0.2) …
Selecting previously unselected package libzzip-0-13:amd64.
Preparing to unpack …/34-libzzip-0-13_0.13.72+dfsg.1-1.1_amd64.deb …
Unpacking libzzip-0-13:amd64 (0.13.72+dfsg.1-1.1) …
Selecting previously unselected package xfonts-encodings.
Preparing to unpack …/35-xfonts-encodings_1%3a1.0.5-0ubuntu2_all.deb …
Unpacking xfonts-encodings (1:1.0.5-0ubuntu2) …
Selecting previously unselected package xfonts-utils.
Preparing to unpack …/36-xfonts-utils_1%3a7.7+6build2_amd64.deb …
Unpacking xfonts-utils (1:7.7+6build2) …
Selecting previously unselected package lmodern.
Preparing to unpack …/37-lmodern_2.004.5-6.1_all.deb …
Unpacking lmodern (2.004.5-6.1) …
Selecting previously unselected package preview-latex-style.
Preparing to unpack …/38-preview-latex-style_12.2-1ubuntu1_all.deb …
Unpacking preview-latex-style (12.2-1ubuntu1) …
Selecting previously unselected package t1utils.
Preparing to unpack …/39-t1utils_1.41-4build2_amd64.deb …
Unpacking t1utils (1.41-4build2) …
Selecting previously unselected package teckit.
Preparing to unpack …/40-teckit_2.5.11+ds1-1_amd64.deb …
Unpacking teckit (2.5.11+ds1-1) …
Selecting previously unselected package tex-gyre.
Preparing to unpack …/41-tex-gyre_20180621-3.1_all.deb …
Unpacking tex-gyre (20180621-3.1) …
Selecting previously unselected package texlive-binaries.
Preparing to unpack …/42-texlive-
binaries_2021.20210626.59705-1ubuntu0.2_amd64.deb …
Unpacking texlive-binaries (2021.20210626.59705-1ubuntu0.2) …
Selecting previously unselected package texlive-base.
Preparing to unpack …/43-texlive-base_2021.20220204-1_all.deb …
Unpacking texlive-base (2021.20220204-1) …
Selecting previously unselected package texlive-fonts-recommended.
Preparing to unpack …/44-texlive-fonts-recommended_2021.20220204-1_all.deb …
Unpacking texlive-fonts-recommended (2021.20220204-1) …
Selecting previously unselected package texlive-latex-base.

```
Preparing to unpack …/45-texlive-latex-base_2021.20220204-1_all.deb …
Unpacking texlive-latex-base (2021.20220204-1) …
Selecting previously unselected package libfontbox-java.
Preparing to unpack …/46-libfontbox-java_1%3a1.8.16-2_all.deb …
Unpacking libfontbox-java (1:1.8.16-2) …
Selecting previously unselected package libpdfbox-java.
Preparing to unpack …/47-libpdfbox-java_1%3a1.8.16-2_all.deb …
Unpacking libpdfbox-java (1:1.8.16-2) …
Selecting previously unselected package texlive-latex-recommended.
Preparing to unpack …/48-texlive-latex-recommended_2021.20220204-1_all.deb …
Unpacking texlive-latex-recommended (2021.20220204-1) …
Selecting previously unselected package texlive-pictures.
Preparing to unpack …/49-texlive-pictures_2021.20220204-1_all.deb …
Unpacking texlive-pictures (2021.20220204-1) …
Selecting previously unselected package texlive-latex-extra.
Preparing to unpack …/50-texlive-latex-extra_2021.20220204-1_all.deb …
Unpacking texlive-latex-extra (2021.20220204-1) …
Selecting previously unselected package texlive-plain-generic.
Preparing to unpack …/51-texlive-plain-generic_2021.20220204-1_all.deb …
Unpacking texlive-plain-generic (2021.20220204-1) …
Selecting previously unselected package tipa.
Preparing to unpack …/52-tipa_2%3a1.3-21_all.deb …
Unpacking tipa (2:1.3-21) …
Selecting previously unselected package texlive-xetex.
Preparing to unpack …/53-texlive-xetex_2021.20220204-1_all.deb …
Unpacking texlive-xetex (2021.20220204-1) …
Setting up fonts-lato (2.0-2.1) …
Setting up fonts-noto-mono (20201225-1build1) …
Setting up libwoff1:amd64 (1.0.2-1build4) …
Setting up libtexlua53:amd64 (2021.20210626.59705-1ubuntu0.2) …
Setting up libijs-0.35:amd64 (0.35-15build2) …
Setting up libtexluajit2:amd64 (2021.20210626.59705-1ubuntu0.2) …
Setting up libfontbox-java (1:1.8.16-2) …
Setting up rubygems-integration (1.18) …
Setting up libzzip-0-13:amd64 (0.13.72+dfsg.1-1.1) …
Setting up fonts-urw-base35 (20200910-1) …
Setting up poppler-data (0.4.11-1) …
Setting up tex-common (6.17) …
update-language: texlive-base not installed and configured, doing nothing!
Setting up libfontenc1:amd64 (1:1.1.4-1build3) …
Setting up libjbig2dec0:amd64 (0.19-3build2) …
Setting up libteckit0:amd64 (2.5.11+ds1-1) …
Setting up libapache-pom-java (18-1) …
Setting up ruby-net-telnet (0.1.1-2) …
Setting up xfonts-encodings (1:1.0.5-0ubuntu2) …
Setting up t1utils (1.41-4build2) …
Setting up libidn12:amd64 (1.38-4ubuntu1) …
Setting up fonts-texgyre (20180621-3.1) …
```

```
Setting up libkpathsea6:amd64 (2021.20210626.59705-1ubuntu0.2) …
Setting up ruby-webrick (1.7.0-3ubuntu0.1) …
Setting up fonts-lmodern (2.004.5-6.1) …
Setting up fonts-droid-fallback (1:6.0.1r16-1.1build1) …
Setting up ruby-xmlrpc (0.3.2-1ubuntu0.1) …
Setting up libsynctex2:amd64 (2021.20210626.59705-1ubuntu0.2) …
Setting up libgs9-common (9.55.0~dfsg1-0ubuntu5.10) …
Setting up teckit (2.5.11+ds1-1) …
Setting up libpdfbox-java (1:1.8.16-2) …
Setting up libgs9:amd64 (9.55.0~dfsg1-0ubuntu5.10) …
Setting up preview-latex-style (12.2-1ubuntu1) …
Setting up libcommons-parent-java (43-1) …
Setting up dvisvgm (2.13.1-1) …
Setting up libcommons-logging-java (1.2-2) …
Setting up xfonts-utils (1:7.7+6build2) …
Setting up libptexenc1:amd64 (2021.20210626.59705-1ubuntu0.2) …
Setting up texlive-binaries (2021.20210626.59705-1ubuntu0.2) …
update-alternatives: using /usr/bin/xdvi-xaw to provide /usr/bin/xdvi.bin
(xdvi.bin) in auto mode
update-alternatives: using /usr/bin/bibtex.original to provide /usr/bin/bibtex
(bibtex) in auto mode
Setting up lmodern (2.004.5-6.1) …
Setting up texlive-base (2021.20220204-1) …
/usr/bin/ucfr
/usr/bin/ucfr
/usr/bin/ucfr
/usr/bin/ucfr
mktexlsr: Updating /var/lib/texmf/ls-R-TEXLIVEDIST…
mktexlsr: Updating /var/lib/texmf/ls-R-TEXMFMAIN…
mktexlsr: Updating /var/lib/texmf/ls-R…
mktexlsr: Done.
tl-paper: setting paper size for dvips to a4:
/var/lib/texmf/dvips/config/config-paper.ps
tl-paper: setting paper size for dvipdfmx to a4:
/var/lib/texmf/dvipdfmx/dvipdfmx-paper.cfg
tl-paper: setting paper size for xdvi to a4: /var/lib/texmf/xdvi/XDvi-paper
tl-paper: setting paper size for pdftex to a4: /var/lib/texmf/tex/generic/tex-
ini-files/pdftexconfig.tex
Setting up tex-gyre (20180621-3.1) …
Setting up texlive-plain-generic (2021.20220204-1) …
Setting up texlive-latex-base (2021.20220204-1) …
Setting up texlive-latex-recommended (2021.20220204-1) …
Setting up texlive-pictures (2021.20220204-1) …
Setting up texlive-fonts-recommended (2021.20220204-1) …
Setting up tipa (2:1.3-21) …
Setting up texlive-latex-extra (2021.20220204-1) …
Setting up texlive-xetex (2021.20220204-1) …
Setting up rake (13.0.6-2) …
```

```
Setting up libruby3.0:amd64 (3.0.2-7ubuntu2.8) …
Setting up ruby3.0 (3.0.2-7ubuntu2.8) …
Setting up ruby (1:3.0~exp1) …
Setting up ruby-rubygems (3.3.5-2) …
Processing triggers for man-db (2.10.2-1) …
Processing triggers for mailcap (3.70+nmu1ubuntu1) …
Processing triggers for fontconfig (2.13.1-4.2ubuntu5) …
Processing triggers for libc-bin (2.35-0ubuntu3.8) …
/sbin/ldconfig.real: /usr/local/lib/libtcm.so.1 is not a symbolic link

/sbin/ldconfig.real: /usr/local/lib/libur_loader.so.0 is not a symbolic link

/sbin/ldconfig.real: /usr/local/lib/libhwloc.so.15 is not a symbolic link

/sbin/ldconfig.real: /usr/local/lib/libur_adapter_opencl.so.0 is not a symbolic
link

/sbin/ldconfig.real: /usr/local/lib/libtcm_debug.so.1 is not a symbolic link

/sbin/ldconfig.real: /usr/local/lib/libur_adapter_level_zero.so.0 is not a
symbolic link

/sbin/ldconfig.real: /usr/local/lib/libtbbbind.so.3 is not a symbolic link

/sbin/ldconfig.real: /usr/local/lib/libtbbmalloc_proxy.so.2 is not a symbolic
link

/sbin/ldconfig.real: /usr/local/lib/libtbbbind_2_0.so.3 is not a symbolic link

/sbin/ldconfig.real: /usr/local/lib/libtbbmalloc.so.2 is not a symbolic link

/sbin/ldconfig.real: /usr/local/lib/libtbb.so.12 is not a symbolic link

/sbin/ldconfig.real: /usr/local/lib/libtbbbind_2_5.so.3 is not a symbolic link

/sbin/ldconfig.real: /usr/local/lib/libumf.so.0 is not a symbolic link

Processing triggers for tex-common (6.17) …
Running updmap-sys. This may take some time… done.
Running mktexlsr /var/lib/texmf … done.
Building format(s) --all.
        This may take some time… done.
```

[88]: `!Pandoc --version`

```
/bin/bash: line 1: Pandoc: command not found
```

```
[48]:    from google.colab import drive
         drive.flush_and_unmount()
```

```
[49]:   from google.colab import drive
        drive.mount('/content/gdrive')
```

Mounted at /content/gdrive

```
[78]:   %cd /content/gdrive/MyDrive/Colab\ Notebooks/
```

/content/gdrive/MyDrive/Colab Notebooks

```
[86]:  # Convert
       !jupyter nbconvert --to pdf 3_1    _ . .ipynb
```

```
[NbConvertApp] Converting notebook 3_1    _ . .ipynb to pdf
[NbConvertApp] ERROR | Error while converting '3_1    _ . .ipynb'
Traceback (most recent call last):
  File "/usr/local/lib/python3.11/dist-packages/nbconvert/nbconvertapp.py", line
487, in export_single_notebook
    output, resources = self.exporter.from_filename(
                        ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
  File "/usr/local/lib/python3.11/dist-
packages/nbconvert/exporters/templateexporter.py", line 390, in from_filename
    return super().from_filename(filename, resources, **kw)  #
type:ignore[return-value]
           ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
  File "/usr/local/lib/python3.11/dist-
packages/nbconvert/exporters/exporter.py", line 201, in from_filename
    return self.from_file(f, resources=resources, **kw)
           ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
  File "/usr/local/lib/python3.11/dist-
packages/nbconvert/exporters/templateexporter.py", line 396, in from_file
    return super().from_file(file_stream, resources, **kw)  #
type:ignore[return-value]
           ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
  File "/usr/local/lib/python3.11/dist-
packages/nbconvert/exporters/exporter.py", line 220, in from_file
    return self.from_notebook_node(
           ~~~~~~~~~~~~~~~~~~~~~~~~~
  File "/usr/local/lib/python3.11/dist-packages/nbconvert/exporters/pdf.py",
line 184, in from_notebook_node
    latex, resources = super().from_notebook_node(nb, resources=resources, **kw)
                       ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
  File "/usr/local/lib/python3.11/dist-packages/nbconvert/exporters/latex.py",
line 92, in from_notebook_node
    return super().from_notebook_node(nb, resources, **kw)
           ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
```

```
  File "/usr/local/lib/python3.11/dist-
packages/nbconvert/exporters/templateexporter.py", line 429, in
from_notebook_node
    output = self.template.render(nb=nb_copy, resources=resources)
             ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
  File "/usr/local/lib/python3.11/dist-packages/jinja2/environment.py", line
1295, in render
    self.environment.handle_exception()
  File "/usr/local/lib/python3.11/dist-packages/jinja2/environment.py", line
942, in handle_exception
    raise rewrite_traceback_stack(source=source)
  File "/usr/local/share/jupyter/nbconvert/templates/latex/index.tex.j2", line
8, in top-level template code
    ((* extends cell_style *))
    ~~~~~~~~~~~~~~~~~~~~~~~~~~
  File
"/usr/local/share/jupyter/nbconvert/templates/latex/style_jupyter.tex.j2", line
176, in top-level template code
    \prompt{(((prompt)))}{(((prompt_color)))}{(((execution_count)))}{(((extra_sp
ace)))}
    ~~~~~~~~~~~~~~~~~~~~~~~~~~
  File "/usr/local/share/jupyter/nbconvert/templates/latex/base.tex.j2", line 7,
in top-level template code
    ((*- extends 'document_contents.tex.j2' -*))
    ~~~~~~~~~~~~~~~~~~~~~~~~~~
  File
"/usr/local/share/jupyter/nbconvert/templates/latex/document_contents.tex.j2",
line 51, in top-level template code
    ((*- block figure scoped -*))
    ~~~~~~~~~~~~~~~~~~~~~~~~~~
  File "/usr/local/share/jupyter/nbconvert/templates/latex/display_priority.j2",
line 5, in top-level template code
    ((*- extends 'null.j2' -*))
    ~~~~~~~~~~~~~~~~~~~~~~~~~~
  File "/usr/local/share/jupyter/nbconvert/templates/latex/null.j2", line 30, in
top-level template code
    ((*- block body -*))
  File "/usr/local/share/jupyter/nbconvert/templates/latex/base.tex.j2", line
241, in block 'body'
    ((( super() )))
  File "/usr/local/share/jupyter/nbconvert/templates/latex/null.j2", line 32, in
block 'body'
    ((*- block any_cell scoped -*))
    ~~~~~~~~~~~~~~~~~~~~~~~~~~
  File "/usr/local/share/jupyter/nbconvert/templates/latex/null.j2", line 85, in
block 'any_cell'
    ((*- block markdowncell scoped-*)) ((*- endblock markdowncell -*))
    ~~~~~~~~~~~~~~~~~~~~~~~~~~
```

```
  File
"/usr/local/share/jupyter/nbconvert/templates/latex/document_contents.tex.j2",
line 68, in block 'markdowncell'
    ((( cell.source | citation2latex | strip_files_prefix |
convert_pandoc('markdown+tex_math_double_backslash', 'json',extra_args=[]) |
resolve_references | convert_explicitly_relative_paths |
convert_pandoc('json','latex'))))
      ^^^^^^^^^^^^^^^^^^^^^^^^^^^^
  File "/usr/local/lib/python3.11/dist-packages/nbconvert/filters/pandoc.py",
line 36, in convert_pandoc
    return pandoc(source, from_format, to_format, extra_args=extra_args)
          ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
  File "/usr/local/lib/python3.11/dist-packages/nbconvert/utils/pandoc.py", line
50, in pandoc
    check_pandoc_version()
  File "/usr/local/lib/python3.11/dist-packages/nbconvert/utils/pandoc.py", line
98, in check_pandoc_version
    v = get_pandoc_version()
        ^^^^^^^^^^^^^^^^^^^^
  File "/usr/local/lib/python3.11/dist-packages/nbconvert/utils/pandoc.py", line
75, in get_pandoc_version
    raise PandocMissing()
nbconvert.utils.pandoc.PandocMissing: Pandoc wasn't found.
Please check that pandoc is installed:
https://pandoc.org/installing.html
```

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https://habr.com/ru/articles/521894/

https://www.geeksforgeeks.org/seaborn-plots-in-a-loop-efficient-data-visualization-techniques/

https://www.geeksforgeeks.org/how-to-connect-python-with-sql-database/

https://pandas.pydata.org/pandas-docs/stable/user_guide/style.html#Setting-styles