assessment_analysis2

December 15, 2025

1 Meeting Log Sheet Analysis

[160]:
```
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
import numpy as np
```

[161]:
```
data=pd.read_excel("Sample Month End Report for Assesment.xlsx",sheet_name=None)
```

[162]:
```
xls=pd.ExcelFile("Sample Month End Report for Assesment.xlsx")
```

[163]:
```
xls.sheet_names
```

[163]:
```
['Time spent Analysis', 'Key Accounts', 'Meeting Log', 'Inquiry Tracker']
```

[164]:
```
data=pd.read_excel("Sample Month End Report for Assesment.
 ↪xlsx",sheet_name="Meeting Log")
data.head()
```

[164]:

	Date of Activity	Activity Type	Company	\
0	2025-02-03 00:00:00	NaN	SN Estates & innotech	
1	2025-02-03 00:00:00	NaN	VSR Constructions	
2	2025-02-04 00:00:00	NaN	Somersett pharma	
3	2025-02-04 00:00:00	NaN	Bhoruka	
4	2025-02-05 00:00:00	NaN	Novotel	

	Project	Hours spent	Accomplishment / Summary	\
0	SNN Serenity	1.75	NaN	
1	KC General hospital	1.25	Project is in Initial Stage	
2	Somerset pharma	1	NaN	
3	Bhoruka Tech park	0.75	NaN	
4	Novotel Hotels	1	Project is in Initial Stage	

	Remarks	Unnamed: 7	Unnamed: 8	Unnamed: 9	Unnamed: 10	Unnamed: 11	\
0	Site	NaN	NaN	NaN	NaN	NaN	
1	Office	NaN	NaN	NaN	NaN	NaN	
2	Office & site	NaN	NaN	NaN	NaN	NaN	
3	Office	NaN	NaN	NaN	NaN	NaN	

```
4           Site         NaN         NaN        NaN         NaN         NaN

  Unnamed: 12
0         NaN
1         NaN
2         NaN
3         NaN
4         NaN
```

[165]:
```
data.columns.tolist()
```

[165]:
```
['Date of Activity',
 'Activity Type',
 'Company',
 'Project',
 'Hours spent',
 'Accomplishment / Summary',
 'Remarks',
 'Unnamed: 7',
 'Unnamed: 8',
 'Unnamed: 9',
 'Unnamed: 10',
 'Unnamed: 11',
 'Unnamed: 12']
```

[166]:
```
data.drop(["Unnamed: 7","Unnamed: 8","Unnamed: 9","Unnamed: 10","Unnamed:␣
 ↪11","Unnamed: 12"], axis=1, inplace=True)
```

[167]:
```
data
```

[167]:
```
        Date of Activity          Activity Type                Company  \
0    2025-02-03 00:00:00                    NaN  SN Estates & innotech
1    2025-02-03 00:00:00                    NaN      VSR Constructions
2    2025-02-04 00:00:00                    NaN       Somersett pharma
3    2025-02-04 00:00:00                    NaN                Bhoruka
4    2025-02-05 00:00:00                    NaN                Novotel
..                   …                      …                      …
463  2025-11-10 00:00:00  Internal team meeting               Pidilite
464  2025-11-11 00:00:00  Internal team meeting               Pidilite
465  2025-11-14 00:00:00  Internal team meeting                    MRM
466  2025-11-26 00:00:00      Techno commercial               Pidilite
467  2025-11-27 00:00:00  Internal team meeting               Genotek

                 Project Hours spent  \
0          SNN Serenity        1.75
1    KC General hospital        1.25
2        Somerset pharma           1
```

```
3      Bhoruka Tech park        0.75
4         Novotel Hotels           1
..                    …         …
463             Pidilite        3.25
464             Pidilite        3.25
465                  MRM           1
466             Pidilite         0.5
467              Genotek         0.5

                              Accomplishment / Summary        Remarks
0                                                    NaN           Site
1                          Project is in Initial Stage         Office
2                                                    NaN  Office & site
3                                                    NaN         Office
4                          Project is in Initial Stage           Site
..                                                   …             …
463                        Discussion with sales team             NaN
464                           Discussion with PPS team            NaN
465                     Review meeting with bijoy sir             NaN
466             Discussion with manu and mondelez team            NaN
467  Discuusion with gerry for JSVK project require…            NaN

[468 rows x 7 columns]
```

[168]:
```
data.dtypes
```

[168]:
```
Date of Activity           object
Activity Type              object
Company                    object
Project                    object
Hours spent                object
Accomplishment / Summary   object
Remarks                    object
dtype: object
```

[169]:
```
data['Company'] = data['Company'].str.lower().str.strip()
```

[170]:
```
data['Hours spent'] = pd.to_numeric(data['Hours spent'], errors='coerce')
```

[171]:
```
data['Hours spent']
```

[171]:
```
0      1.75
1      1.25
2      1.00
3      0.75
4      1.00
       …
```

```
463    3.25
464    3.25
465    1.00
466    0.50
467    0.50
Name: Hours spent, Length: 468, dtype: float64
```

[172]:
```
Company_hours=data.groupby('Company')["Hours spent"].sum()
```

[173]:
```
sorted_hrs=Company_hours.sort_values(ascending=False)
sorted_hrs.head(50)
```

[173]:
```
Company
chennai                                      32.00
pidilite                                     22.75
design tree                                  21.25
bagmane developers                           18.25
kalpataru projects international limited     17.75
asg win                                      17.75
hyderabad travel                             16.00
crn architects                               14.00
birla groups                                 12.00
colliers                                     11.90
sumadhura developers                         11.50
innotech                                     10.75
sattva projects                               9.75
embassy developers                            9.75
a n prakash consultants                       9.50
mrm                                           8.75
prestige developers                           8.50
redeconn event                                8.25
pidilite - pps - delhi                        8.00
concorde developers                           8.00
kochi travel                                  8.00
pondicherry visit                             8.00
mumbai travel                                 8.00
kollar city                                   8.00
crn architect                                 7.50
kalpataru projects                            7.50
space must architects                         7.25
assetz home                                   7.25
sriram properties                             7.00
simha associates                              7.00
symmetric architects                          6.50
murthy & manyam architects                    6.50
sundaram architects                           6.25
rmz developers                                6.00
```

```
somerset pharma                                5.75
sattva groups                                  5.50
genotek                                        5.50
abb india pvt ltd                              5.25
prestige groups                                5.25
concorde projects                              5.00
brigade developers                             5.00
inform architects                              4.75
nadig consultant                               4.50
shapoorji & pallonji constructions             4.50
bps                                            4.25
mrm and hubspot update                         4.00
magcor pvt ltd                                 4.00
meet                                           4.00
hubspot discussion with jayanth                4.00
optimus structural                             4.00
Name: Hours spent, dtype: float64
```

[174]:
```
data['Company'].value_counts()
```

[174]:
```
Company
design tree                                  15
asg win                                      13
kalpataru projects international limited     12
crn architects                               11
bagmane developers                           11
                                             ..
sterling engineers                            1
bandari constructions                         1
venkatramana associates                       1
vasvani developers                            1
pidilite - pps - delhi                        1
Name: count, Length: 216, dtype: int64
```

[175]:
```
data.isnull().sum()
```

[175]:
```
Date of Activity             1
Activity Type              309
Company                      2
Project                     18
Hours spent                 26
Accomplishment / Summary    64
Remarks                    167
dtype: int64
```

[176]:
```
columns=data.columns.str.lower().str.strip()
data.columns=columns.str.replace(' ','_')
```

```
data.columns
```

[176]:
```
Index(['date_of_activity', 'activity_type', 'company', 'project',
       'hours_spent', 'accomplishment_/_summary', 'remarks'],
      dtype='object')
```

[177]:
```
data['date_of_activity']=pd.
 ↪to_datetime(data['date_of_activity'],errors='coerce')
```

[178]:
```
data
```

[178]:

	date_of_activity	activity_type	company	project	hours_spent	accomplishment_/_summary	remarks
0	2025-02-03	NaN	sn estates & innotech	SNN Serenity	1.75	NaN	Site
1	2025-02-03	NaN	vsr constructions	KC General hospital	1.25	Project is in Initial Stage	Office
2	2025-02-04	NaN	somersett pharma	Somerset pharma	1.00	NaN	Office & site
3	2025-02-04	NaN	bhoruka	Bhoruka Tech park	0.75	NaN	Office
4	2025-02-05	NaN	novotel	Novotel Hotels	1.00	Project is in Initial Stage	Site
..	…	…	…	…	…	…	…
463	2025-11-10	Internal team meeting	pidilite	Pidilite	3.25	Discussion with sales team	NaN
464	2025-11-11	Internal team meeting	pidilite	Pidilite	3.25	Discussion with PPS team	NaN
465	2025-11-14	Internal team meeting	mrm	MRM	1.00	Review meeting with bijoy sir	NaN
466	2025-11-26	Techno commercial	pidilite	Pidilite	0.50		
467	2025-11-27	Internal team meeting	genotek	Genotek	0.50		

```
466             Discussion with manu and mondelez team            NaN
467  Discuusion with gerry for JSVK project require…           NaN

[468 rows x 7 columns]
```

[179]:
```
data.isnull().sum()
```

[179]:
```
date_of_activity             2
activity_type              309
company                      2
project                     18
hours_spent                 26
accomplishment_/_summary    64
remarks                    167
dtype: int64
```

[180]:
```
data.iloc[324:328]
```

[180]:
```
    date_of_activity                activity_type  company  \
324              NaT                          NaN      NaN
325              NaT              Activity Type  company
326       2025-09-22         Applicator Meeting  asg win
327       2025-10-07  Applicator Techno Commercial  asg win

               project  hours_spent  \
324                NaN          NaN
325            Project          NaN
326  Multiple projects          2.0
327  Multiple Projects          1.5

                           accomplishment_/_summary  remarks
324                                            NaN      NaN
325                        Accomplishment / Summary  Remarks
326  Discussion of product approval for bagmane pro…     Site
327                  Discussion for multiple projects   Office
```

[181]:
```
data=data.dropna(subset=['date_of_activity'])
```

[182]:
```
data.dtypes
```

[182]:
```
date_of_activity           datetime64[ns]
activity_type                      object
company                            object
project                            object
hours_spent                       float64
accomplishment_/_summary           object
remarks                            object
```

```
dtype: object
```

[183]:
```
data['hours_spent'].isnull().sum()
```

[183]:
```
np.int64(24)
```

[184]:
```
data['hours_spent']=data['hours_spent'].fillna(0)
```

```
C:\Users\LENOVO\AppData\Local\Temp\ipykernel_10560\1227422218.py:1:
SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-
docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy
  data['hours_spent']=data['hours_spent'].fillna(0)
```

[185]:
```
data['hours_spent'].isnull().sum()
```

[185]:
```
np.int64(0)
```

[186]:
```
data.isnull().sum()
```

[186]:
```
date_of_activity              0
activity_type               308
company                       1
project                      17
hours_spent                   0
accomplishment_/_summary     63
remarks                     166
dtype: int64
```

[187]:
```
data.isnull().sum()
```

[187]:
```
date_of_activity              0
activity_type               308
company                       1
project                      17
hours_spent                   0
accomplishment_/_summary     63
remarks                     166
dtype: int64
```

[188]:
```
data.loc[458:461, 'company'] = (
    data.loc[458:461, 'company'].replace('-', np.nan)
)
```

```
C:\Users\LENOVO\AppData\Local\Temp\ipykernel_10560\2599336696.py:2:
FutureWarning: Downcasting behavior in `replace` is deprecated and will be
```

```
removed in a future version. To retain the old behavior, explicitly call
`result.infer_objects(copy=False)`. To opt-in to the future behavior, set
`pd.set_option('future.no_silent_downcasting', True)`
  data.loc[458:461, 'company'].replace('-', np.nan)
```

[189]:
```
data['company'] = data['company'].replace(r'^\s*$', np.nan, regex=True)
```

```
C:\Users\LENOVO\AppData\Local\Temp\ipykernel_10560\3254796833.py:1:
SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-
docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy
  data['company'] = data['company'].replace(r'^\s*$', np.nan, regex=True)
```

[190]:
```
data['company'].loc[449:450]
```

[190]:
```
449    -
450    -
Name: company, dtype: object
```

[191]:
```
data=data.drop(450)
```

[192]:
```
data.shape
```

[192]:
```
(465, 7)
```

[193]:
```
data.isnull().sum()
```

[193]:
```
date_of_activity             0
activity_type              308
company                      5
project                     17
hours_spent                  0
accomplishment_/_summary    62
remarks                    166
dtype: int64
```

[194]:
```
data=data.dropna(subset=['company'])
```

[195]:
```
data.shape
```

[195]:
```
(460, 7)
```

[196]:
```
data = data.rename(columns={'accomplishment_/_summary': 'accomplishment/
↪summary'})
```

[197]:
```
data.columns
```

[197]:
```
Index(['date_of_activity', 'activity_type', 'company', 'project',
       'hours_spent', 'accomplishment/summary', 'remarks'],
      dtype='object')
```

[198]:
```
data.isnull().sum()
```

[198]:
```
date_of_activity            0
activity_type             307
company                     0
project                    17
hours_spent                 0
accomplishment/summary     58
remarks                   161
dtype: int64
```

[199]:
```
categorical_col=['activity_type','project','accomplishment/summary','remarks']
for col in categorical_col:
    data[col]=data[col].fillna('Unknown')
```

[200]:
```
data.isnull().sum()
```

[200]:
```
date_of_activity          0
activity_type             0
company                   0
project                   0
hours_spent               0
accomplishment/summary    0
remarks                   0
dtype: int64
```

[201]:
```
data['accomplishment/summary']=data['accomplishment/summary'].str.
 ↪replace('Unknown','Not Mentioned')
```

[202]:
```
data['accomplishment/summary']
```

[202]:
```
0                                        Not Mentioned
1                           Project is in Initial Stage
2                                        Not Mentioned
3                                        Not Mentioned
4                           Project is in Initial Stage
                                …
463                         Discussion with sales team
464                            Discussion with PPS team
465                       Review meeting with bijoy sir
466               Discussion with manu and mondelez team
467    Discuusion with gerry for JSVK project require…
Name: accomplishment/summary, Length: 460, dtype: object
```

[203]:
```
data['remarks']=data['remarks'].str.replace('Unknown','No remarks')
```

[204]:
```
data['remarks']
```

[204]:
```
0              Site
1            Office
2      Office & site
3            Office
4              Site
           …
463       No remarks
464       No remarks
465       No remarks
466       No remarks
467       No remarks
Name: remarks, Length: 460, dtype: object
```

[205]:
```
text_cols = [
    'activity_type',
    'company',
    'project',
    'remarks',
    'accomplishment/summary'
]

for col in text_cols:
    data[col] = data[col].str.strip().str.lower()
```

[206]:
```
data
```

[206]:
```
    date_of_activity          activity_type                company  \
0         2025-02-03                unknown  sn estates & innotech
1         2025-02-03                unknown      vsr constructions
2         2025-02-04                unknown       somersett pharma
3         2025-02-04                unknown                bhoruka
4         2025-02-05                unknown                novotel
..               …                      …                      …
463       2025-11-10  internal team meeting               pidilite
464       2025-11-11  internal team meeting               pidilite
465       2025-11-14  internal team meeting                    mrm
466       2025-11-26      techno commercial               pidilite
467       2025-11-27  internal team meeting                genotek

                 project  hours_spent  \
0          snn serenity         1.75
1    kc general hospital         1.25
2        somerset pharma         1.00
```

```
3      bhoruka tech park         0.75
4         novotel hotels         1.00
..                    …          …
463             pidilite         3.25
464             pidilite         3.25
465                  mrm         1.00
466             pidilite         0.50
467              genotek         0.50

                                accomplishment/summary        remarks
0                                        not mentioned           site
1                          project is in initial stage         office
2                                        not mentioned  office & site
3                                        not mentioned         office
4                          project is in initial stage           site
..                                                 …            …
463                         discussion with sales team     no remarks
464                           discussion with pps team     no remarks
465                       review meeting with bijoy sir     no remarks
466             discussion with manu and mondelez team     no remarks
467  discuusion with gerry for jsvk project require…     no remarks

[460 rows x 7 columns]
```

[207]:
```
data = data.drop_duplicates()
```

[208]:
```
data['activity_type'].unique()
```

[208]:
```
array(['unknown', 'techno - commercial', 'introduction pitch',
       'internal team meeting', 'group presntation', 'applicator meeting',
       'applicator techno commercial', 'techno commercial', 'site visit',
       'leave', 'internal meeting', 'technical presentation', 'admin'],
      dtype=object)
```

[209]:
```
data['activity_type']=data['activity_type'].str.replace('techno -␣
 ↪commercial','techno commercial')
```

[210]:
```
data['activity_type'] = data['activity_type'].replace(
    'internal meeting',
    'internal team meeting'
)
```

[211]:
```
data['activity_type'].value_counts()
```

[211]:
```
activity_type
unknown                307
techno commercial       62
```

```
introduction pitch               50
site visit                       24
internal team meeting            11
applicator meeting                1
group presntation                 1
applicator techno commercial      1
leave                             1
technical presentation            1
admin                             1
Name: count, dtype: int64
```

[212]:
```
data['activity_type'].unique()
```

[212]:
```
array(['unknown', 'techno commercial', 'introduction pitch',
       'internal team meeting', 'group presntation', 'applicator meeting',
       'applicator techno commercial', 'site visit', 'leave',
       'technical presentation', 'admin'], dtype=object)
```

[213]:
```
data['accomplishment/summary'].value_counts()
```

[213]:
```
accomplishment/summary
product presentation                                          80
not mentioned                                                 58
multiple project discussion                                   32
project discussion                                            28
site visit                                                    26
                                                              ..
meet - niranjan for updating key accounts and projections.     1
meet with bijoy sir                                            1
discussion with pps team                                       1
discussion with manu and mondelez team                         1
discuusion with gerry for jsvk project requiremnts             1
Name: count, Length: 156, dtype: int64
```

[214]:
```
# Create a boolean mask
presentation_rows = data['accomplishment/summary'].str.contains('discussion',␣
 ↪case=False, na=False)

# Retrieve only the values from that column
presentation_values = data.loc[presentation_rows, 'accomplishment/summary']

# View the results
print(presentation_values)
```

```
8                        discussion of multiple projects
10                       discussion of multiple projects
12                       discussion for upcoming project
13                     discussion for ejc in bms college
```

```
15                        discussion of multiple projects
                                    …
451     multiple project discussion and po status for …
454        discussion with pps team for upcoming projects
463                              discussion with sales team
464                                discussion with pps team
466                 discussion with manu and mondelez team
Name: accomplishment/summary, Length: 175, dtype: object
```

[215]:
```
data['accomplishment/summary']
```

[215]:
```
0                                              not mentioned
1                              project is in initial stage
2                                              not mentioned
3                                              not mentioned
4                              project is in initial stage
                                    …
463                             discussion with sales team
464                               discussion with pps team
465                           review meeting with bijoy sir
466                 discussion with manu and mondelez team
467     discuusion with gerry for jsvk project require…
Name: accomplishment/summary, Length: 460, dtype: object
```

[216]:
```
def summary_category(text):
    if pd.isna(text):
        return 'Not Mentioned'

    text = text.lower()

    if 'presentation' in text or 'training' in text or 'exhibition' in text:
        return 'Product Presentation'

    elif 'site visit' in text or 'inspection' in text or 'site survey' in text:
        return 'Site Visit'

    elif 'technical' in text or 'qc' in text:
        return 'Technical Discussion'

    elif 'approval' in text or 'negotiation' in text or 'loi' in text:
        return 'Approval / Negotiation'

    elif 'sample' in text or 'mock up' in text:
        return 'Sample / Mock-up'

    elif 'pricing' in text or 'po' in text or 'boq' in text or 'order' in text:
        return 'Commercial / Order'
```

```
    elif 'meet' in text or 'meeting' in text:
        return 'Meeting'

    elif 'event' in text:
        return 'Event / Training'

    elif 'discussion' in text:
        return 'Project Discussion'
    elif 'initial' in text:
        return 'Project is in initial stage'
    else:
        return 'Not Mentioned'
```

[217]:
```
data['summary_category'] = data['accomplishment/summary'].
↪apply(summary_category)
```

[218]:
```
data
```

[218]:

	date_of_activity	activity_type	company	project	hours_spent	accomplishment/summary	remarks
0	2025-02-03	unknown	sn estates & innotech	snn serenity	1.75	not mentioned	site
1	2025-02-03	unknown	vsr constructions	kc general hospital	1.25	project is in initial stage	office
2	2025-02-04	unknown	somersett pharma	somerset pharma	1.00		
3	2025-02-04	unknown	bhoruka	bhoruka tech park	0.75		
4	2025-02-05	unknown	novotel	novotel hotels	1.00		
..	…	…	…	…	…		
463	2025-11-10	internal team meeting	pidilite	pidilite	3.25		
464	2025-11-11	internal team meeting	pidilite	pidilite	3.25		
465	2025-11-14	internal team meeting	mrm	mrm	1.00		
466	2025-11-26	techno commercial	pidilite	pidilite	0.50		
467	2025-11-27	internal team meeting	genotek	genotek	0.50		

```
2                                        not mentioned  office & site
3                                        not mentioned         office
4                          project is in initial stage           site
..                                                  …            …
463                         discussion with sales team     no remarks
464                           discussion with pps team     no remarks
465                       review meeting with bijoy sir     no remarks
466              discussion with manu and mondelez team     no remarks
467  discuusion with gerry for jsvk project require…     no remarks

                summary_category
0                   Not Mentioned
1    Project is in initial stage
2                   Not Mentioned
3                   Not Mentioned
4    Project is in initial stage
..                             …
463           Project Discussion
464           Project Discussion
465                      Meeting
466           Project Discussion
467                 Not Mentioned

[460 rows x 8 columns]
```

[219]:
```
data['summary_category'].value_counts()
```

[219]:
```
summary_category
Product Presentation           130
Project Discussion             120
Not Mentioned                   72
Site Visit                      51
Technical Discussion            29
Approval / Negotiation          17
Meeting                         15
Commercial / Order               9
Sample / Mock-up                 9
Project is in initial stage      6
Event / Training                 2
Name: count, dtype: int64
```

[220]:
```
data.groupby('summary_category')['accomplishment/summary'].count()
```

[220]:
```
summary_category
Approval / Negotiation          17
Commercial / Order               9
Event / Training                 2
```

```
Meeting                          15
Not Mentioned                    72
Product Presentation            130
Project Discussion              120
Project is in initial stage       6
Sample / Mock-up                  9
Site Visit                       51
Technical Discussion             29
Name: accomplishment/summary, dtype: int64
```

2 Analysis

[221]:
```
data.describe()
```

[221]:
```
                      date_of_activity  hours_spent
count                              460   460.000000
mean   2025-06-29 15:39:07.826086912     1.505217
min              2025-02-03 00:00:00     0.000000
25%              2025-04-15 18:00:00     1.000000
50%              2025-06-26 12:00:00     1.250000
75%              2025-09-12 06:00:00     1.750000
max              2025-11-27 00:00:00     8.000000
std                              NaN     1.311170
```

[222]:
```
data['hours_spent'].skew()
```

[222]:
```
np.float64(3.1127385074659153)
```

[223]:
```
# Right skew → few activities consume more time
# Median < Mean → some long meetings exist
```

[224]:
```
data.groupby('date_of_activity').size()
```

[224]:
```
date_of_activity
2025-02-03    2
2025-02-04    2
2025-02-05    2
2025-02-06    3
2025-02-07    2
             ..
2025-11-21    2
2025-11-24    2
2025-11-25    3
2025-11-26    4
2025-11-27    4
Length: 205, dtype: int64
```

[225]:
```
data.groupby('date_of_activity')['hours_spent'].sum().describe()
# each day hours spentand their description
```

[225]:
```
count    205.000000
mean       3.377561
std        2.105707
min        0.000000
25%        2.500000
50%        3.250000
75%        4.000000
max       13.500000
Name: hours_spent, dtype: float64
```

[226]:
```
#75% of days → 4 hours
#Only 25% of days → more than 4 hours
#Daily work hours are right-skewed
#Most days fall between 2.5 - 4 hours
#A few days have very high workload, pulling the average up
```

[227]:
```
daily_hours = data.groupby('date_of_activity')['hours_spent'].sum()
daily_hours
```

[227]:
```
date_of_activity
2025-02-03    3.00
2025-02-04    1.75
2025-02-05    1.75
2025-02-06    2.75
2025-02-07    2.75
              …
2025-11-21    3.50
2025-11-24    4.00
2025-11-25    4.00
2025-11-26    3.00
2025-11-27    3.75
Name: hours_spent, Length: 205, dtype: float64
```

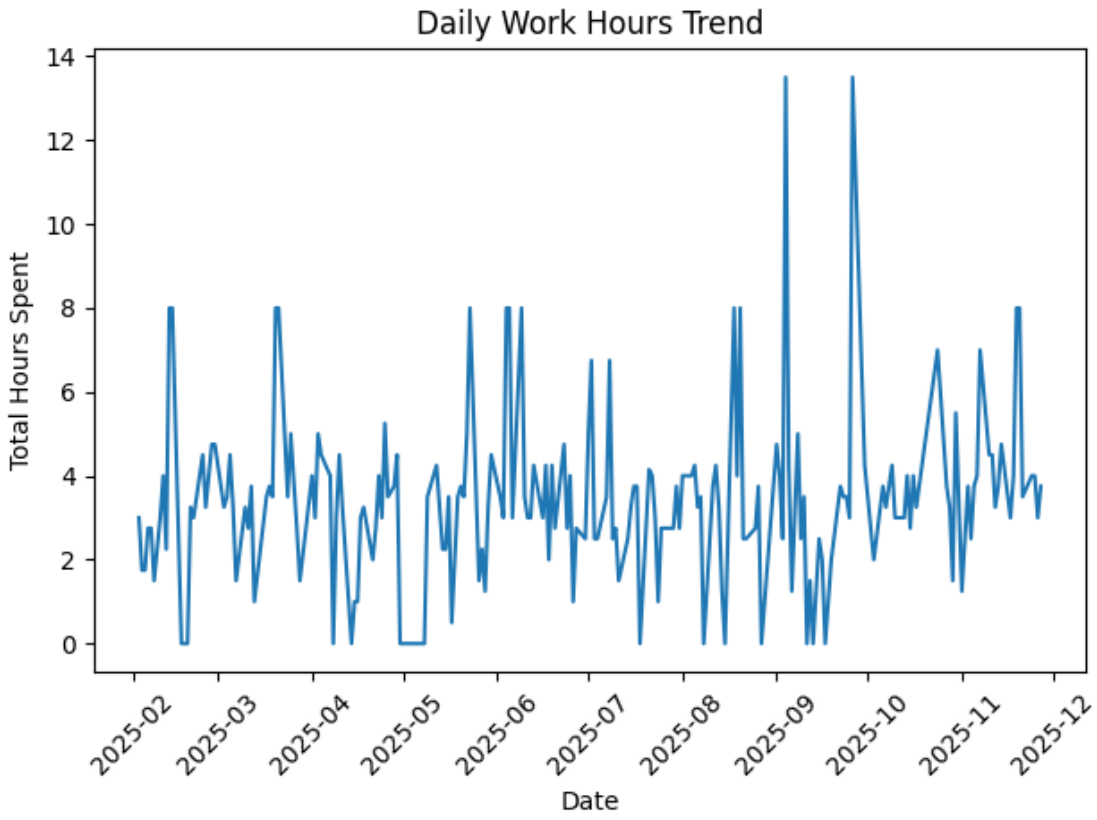
[228]:
```
high_load_days = daily_hours[daily_hours >= 13]
```

[229]:
```
high_load_days
```

[229]:
```
date_of_activity
2025-09-04    13.5
2025-09-26    13.5
Name: hours_spent, dtype: float64
```

[230]:
```
daily_hours = data.groupby('date_of_activity')['hours_spent'].sum()

plt.figure()
```

```
plt.plot(daily_hours.index, daily_hours.values)
plt.xlabel("Date")
plt.ylabel("Total Hours Spent")
plt.title("Daily Work Hours Trend")
plt.xticks(rotation=45)
plt.tight_layout()
plt.show()
```



[231]:
```
data['month'] = data['date_of_activity'].dt.to_period('M')
monthly_hours = data.groupby('month')['hours_spent'].sum().
  ↪sort_values(ascending=False)
monthly_hours
```

[231]:
```
month
2025-11    84.25
2025-09    82.00
2025-06    81.25
2025-07    71.15
2025-04    68.25
2025-03    66.25
```

```
2025-08    63.00
2025-02    62.25
2025-10    58.00
2025-05    56.00
Freq: M, Name: hours_spent, dtype: float64
```

[232]:
```
activity_count=data.groupby('month')['activity_type'].count().
 ↪sort_values(ascending=False)
activity_count
```

[232]:
```
month
2025-07    56
2025-11    53
2025-05    49
2025-03    47
2025-02    46
2025-04    46
2025-06    46
2025-09    44
2025-10    40
2025-08    33
Freq: M, Name: activity_type, dtype: int64
```

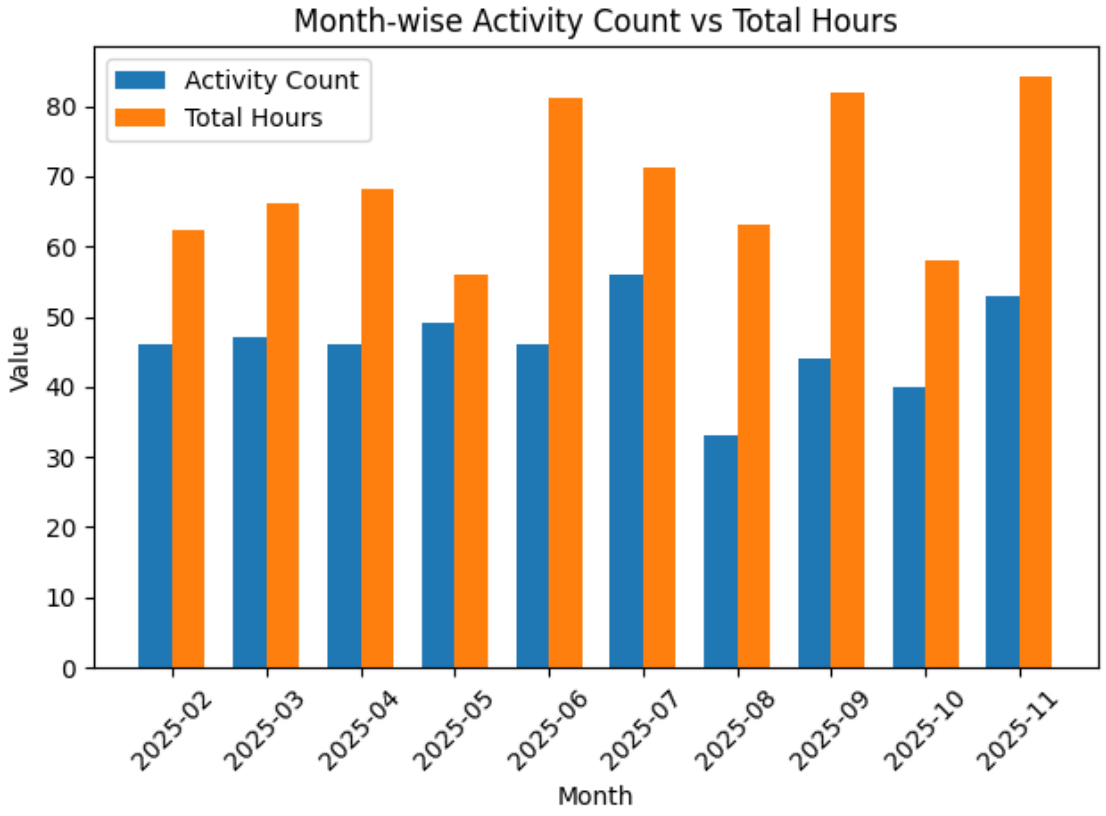
[233]:
```
data
```

[233]:
```
    date_of_activity          activity_type                company  \
0         2025-02-03                unknown  sn estates & innotech
1         2025-02-03                unknown     vsr constructions
2         2025-02-04                unknown      somersett pharma
3         2025-02-04                unknown               bhoruka
4         2025-02-05                unknown               novotel
..               …                      …                     …
463       2025-11-10  internal team meeting              pidilite
464       2025-11-11  internal team meeting              pidilite
465       2025-11-14  internal team meeting                   mrm
466       2025-11-26      techno commercial              pidilite
467       2025-11-27  internal team meeting               genotek

                 project  hours_spent  \
0          snn serenity         1.75
1    kc general hospital         1.25
2        somerset pharma         1.00
3      bhoruka tech park         0.75
4         novotel hotels         1.00
..                   …          …
463            pidilite         3.25
464            pidilite         3.25
```

```
465                  mrm         1.00
466             pidilite         0.50
467              genotek         0.50

                               accomplishment/summary        remarks  \
0                                        not mentioned           site
1                          project is in initial stage         office
2                                        not mentioned  office & site
3                                        not mentioned         office
4                          project is in initial stage           site
..                                                 …            …
463                         discussion with sales team     no remarks
464                           discussion with pps team     no remarks
465                       review meeting with bijoy sir     no remarks
466             discussion with manu and mondelez team     no remarks
467  discuusion with gerry for jsvk project require…     no remarks

                summary_category    month
0                   Not Mentioned  2025-02
1    Project is in initial stage  2025-02
2                   Not Mentioned  2025-02
3                   Not Mentioned  2025-02
4    Project is in initial stage  2025-02
..                             …      …
463           Project Discussion  2025-11
464           Project Discussion  2025-11
465                      Meeting  2025-11
466           Project Discussion  2025-11
467                 Not Mentioned  2025-11

[460 rows x 9 columns]
```

[234]:
```
monthly_comparison = pd.DataFrame({
    'monthly_activity_count':activity_count,
    'monthly_hours': monthly_hours
}).sort_index()
x = np.arange(len(monthly_comparison))
width = 0.35

# Plot
plt.figure()
plt.bar(x - width/2, monthly_comparison['monthly_activity_count'], width,␣
 ↪label='Activity Count')
plt.bar(x + width/2, monthly_comparison['monthly_hours'], width, label='Total␣
 ↪Hours')

plt.xlabel("Month")
```

```
plt.ylabel("Value")
plt.title("Month-wise Activity Count vs Total Hours")
plt.xticks(x, monthly_comparison.index, rotation=45)
plt.legend()
plt.tight_layout()
plt.show()
```



[235]:
```
data['remarks'].unique()
```

[235]:
```
array(['site', 'office', 'office & site', 'no remarks', 'site & office',
       'site visit', 'hyderabad visit', 'online', 'mysore visit',
       'delhi visit', 'bannerghatta road site', 'office and site'],
      dtype=object)
```

[240]:
```
data['remarks']=data['remarks'].str.replace('office & site','office and site')
```

[237]:
```
data['remarks']=data['remarks'].str.replace('site visit','site')
```

[241]:
```
data['remarks'].unique()
```

[241]:
```
array(['site', 'office', 'office and site', 'no remarks',
       'hyderabad visit', 'online', 'mysore visit', 'delhi visit',
       'bannerghatta road site'], dtype=object)
```

[239]:
```
data
```

[239]:

	date_of_activity	activity_type	company	project	hours_spent	accomplishment/summary	remarks	summary_category	month
0	2025-02-03	unknown	sn estates & innotech	snn serenity	1.75	not mentioned	site	Not Mentioned	2025-02
1	2025-02-03	unknown	vsr constructions	kc general hospital	1.25	project is in initial stage	office		
2	2025-02-04	unknown	somersett pharma	somerset pharma	1.00	not mentioned	office & site		
3	2025-02-04	unknown	bhoruka	bhoruka tech park	0.75	not mentioned	office		
4	2025-02-05	unknown	novotel	novotel hotels	1.00	project is in initial stage	site		
..	…	…	…	…	…	…	…		
463	2025-11-10	internal team meeting	pidilite	pidilite	3.25	discussion with sales team	no remarks		
464	2025-11-11	internal team meeting	pidilite	pidilite	3.25	discussion with pps team	no remarks		
465	2025-11-14	internal team meeting	mrm	mrm	1.00	review meeting with bijoy sir	no remarks		
466	2025-11-26	techno commercial	pidilite	pidilite	0.50	discussion with manu and mondelez team	no remarks		
467	2025-11-27	internal team meeting	genotek	genotek	0.50	discuusion with gerry for jsvk project require…	no remarks		

```
1    Project is in initial stage  2025-02
2                  Not Mentioned  2025-02
3                  Not Mentioned  2025-02
4    Project is in initial stage  2025-02
..                             …      …
463           Project Discussion  2025-11
464           Project Discussion  2025-11
465                      Meeting  2025-11
466           Project Discussion  2025-11
467                Not Mentioned  2025-11

[460 rows x 9 columns]
```

[242]:
```
summary_cat_wise_hours = data.groupby('summary_category')['hours_spent'].sum().
 ↪sort_values(ascending=False)
```

[243]:
```
summary_cat_wise_hours
```

[243]:
```
summary_category
Product Presentation           191.75
Project Discussion             189.40
Not Mentioned                   91.00
Site Visit                      74.25
Technical Discussion            40.50
Meeting                         31.50
Approval / Negotiation          25.50
Commercial / Order              16.25
Event / Training                16.00
Sample / Mock-up                10.25
Project is in initial stage      6.00
Name: hours_spent, dtype: float64
```

3 Most of the presentation and discussion have done

[247]:
```
location = data.groupby('remarks')['hours_spent'].sum().
 ↪sort_values(ascending=False)
location
```

[247]:
```
remarks
office                    260.75
no remarks                259.15
site                      126.75
office and site            16.50
hyderabad visit            16.00
online                     10.25
bannerghatta road site      1.25
```

```
delhi visit                 1.00
mysore visit                0.75
Name: hours_spent, dtype: float64
```

4 The most activities done at office and second most not mentioned then at site.

[251]:
```
monthly_project_count=data.groupby('month')['project'].count().
↪sort_values(ascending=False)
monthly_project_count
```

[251]:
```
month
2025-07    56
2025-11    53
2025-05    49
2025-03    47
2025-02    46
2025-04    46
2025-06    46
2025-09    44
2025-10    40
2025-08    33
Freq: M, Name: project, dtype: int64
```

5 July 2025 had the highest number of project activities (56),

6 followed by November 2025 (53),

7 indicating these months had the highest project engagement.

[ ]:
```

```