Problem Statement

Prepare Detailed Report from given data and visualize it

Data

In [11]:
```
from IPython.display import Image
Image(filename = "C:/Users/Manoj/Desktop/seaspan_docs/given_data.png",width = 1000, height = 1)
```

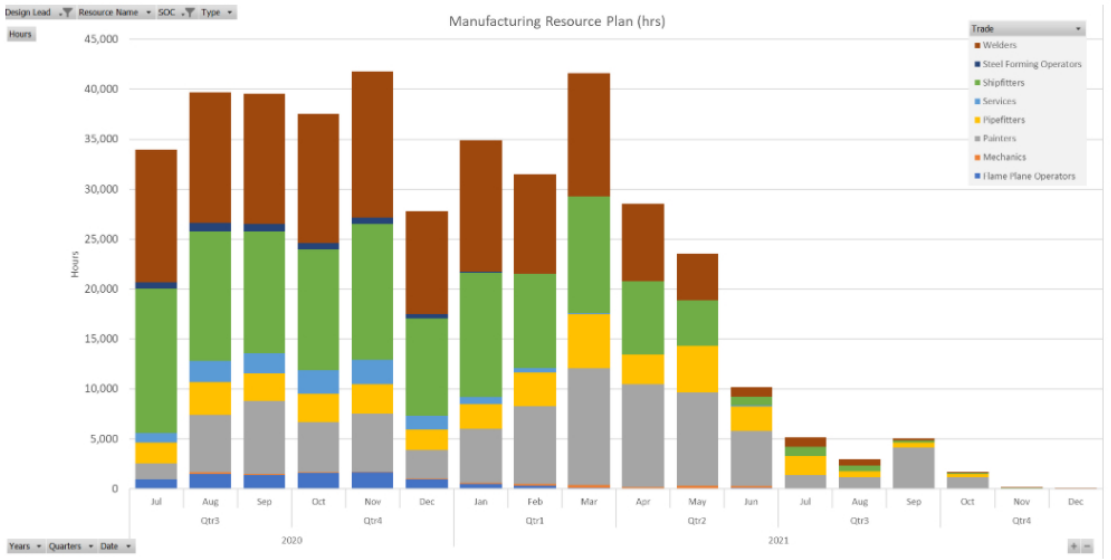
Out[11]:

Design Le:	Departme	SOC	Activity ID	Activity N	Resource	Trade	Budgeted	Spreadshe	01-Feb-18	01-Dec-18	01-Jan-19	01-Feb-19	01-Mar-19	01-Apr-19	01-May-19	01-Jun-19
VSY	OPS	5	05-BB002(	SOC 05 Cu	FP0	Flame Pla	840	Budgeted Units								
VSY	OPS	5	05-BB003(	SOC 05 Cu	FP0	Flame Pla	626	Budgeted Units								
VSY	OPS	5	05-BB007(	SOC 05 Cu	FP0	Flame Pla	160	Budgeted Units								
VSY	OPS	5	05-BD008(	SOC 05 Cu	FP0	Flame Pla	578	Budgeted Units								
VSY	OPS	5	05-BD018(	SOC 05 Cu	FP0	Flame Pla	445	Budgeted Units			47	199	189	9		
VSY	OPS	5	05-BD025(	SOC 05 Cu	FP0	Flame Pla	522	Budgeted Units						312	210	
VSY	OPS	5	05-BD026(	SOC 05 Cu	FP0	Flame Pla	967	Budgeted Units					230	505	232	
VSY	OPS	5	05-BD034(	SOC 05 Cu	FP0	Flame Pla	1743	Budgeted Units					590	683	470	
VSY	OPS	5	05-BD035(	SOC 05 Cu	FP0	Flame Pla	320	Budgeted Units				121	142	57		

Expected Report Layout

In [10]:
```
from IPython.display import Image
Image(filename = "C:/Users/Manoj/Desktop/seaspan_docs/expected_result.png",width = 1000, height = 1)
```

Out[10]:



Considered Approach for data transformation.

1: We can insert data into database and summerize it as per the requirement.
2: Transform data using excel.
3: Use python to read data from excel in rowwise fashion, transform date columns and write modified data to CSV file.

For this workbook, I have considered approach no.3

I:Python Code to fetch data from excel

In [12]:
```
import xlrd
import csv
loc = "C:\\Users\\Manoj\\Desktop\\seaspan\\ManufacturingResourceTestData.xlsx"
wb = xlrd.open_workbook(loc)
sheet = wb.sheet_by_index(0)
row1 = sheet.row_values(0)
```

II:Code for transfroming date columns from dataset and write it into CSV format.

In [15]:
```
num_rows = 2182
csvfile = open('data.csv', 'w')

for i in range(1, num_rows):
    r = sheet.row_values(i)
    count = 9
    for i in range (1, 50):
        a=r[count]
        if isinstance(r[count], str):
            a = a.replace('','0')
```

```
        data = r[6] + ',' + r[3] + ',' + str(a) + ',' + row1[count] + ','
        csvfile.write(data + '\n')
        count += 1
        if count > 55:
            break
```

After executing above code, 'data.csv' file will get generate. Snippet of the generated file is as follow:

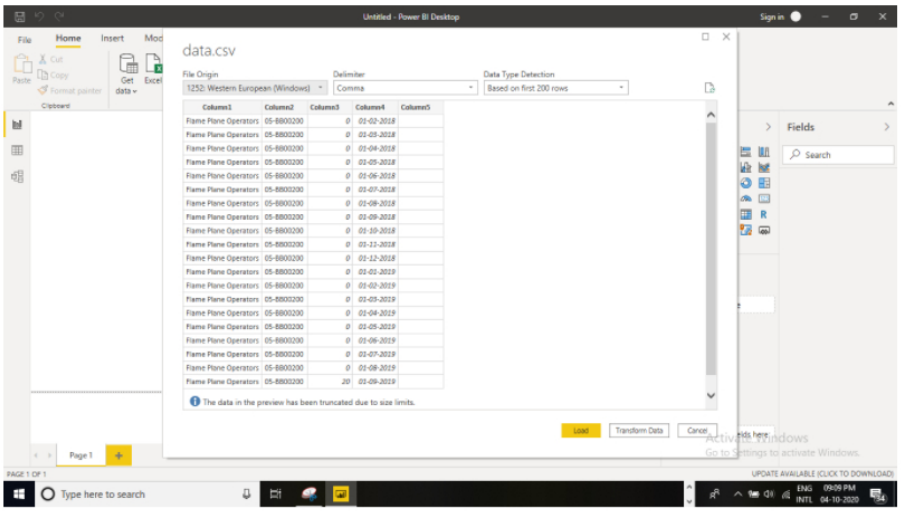
In [17]:
```
from IPython.display import Image
Image(filename = "C:/Users/Manoj/Desktop/seaspan_docs/generated_csv.png",width = 400, height = 400)
```

Out[17]:
```
Trade,  Activity, Hours, Date
Flame Plane Operators,05-BB00200,0,01-Jan-19,
Flame Plane Operators,05-BB00200,0,01-Feb-19,
Flame Plane Operators,05-BB00200,0,01-Mar-19,
Flame Plane Operators,05-BB00200,0,01-Apr-19,
Flame Plane Operators,05-BB00200,0,01-May-19,
Flame Plane Operators,05-BB00200,0,01-Jun-19,
Flame Plane Operators,05-BB00200,0,01-Jul-19,
Flame Plane Operators,05-BB00200,0,01-Aug-19,
Flame Plane Operators,05-BB00200,20.0,01-Sep-19,
Flame Plane Operators,05-BB00200,439.0,01-Oct-19,
Flame Plane Operators,05-BB00200,381.0,01-Nov-19,
Flame Plane Operators,05-BB00200,0,01-Dec-19,
```

III: Upload this CSV file data to Power BI.

In [19]:
```
from IPython.display import Image
Image(filename = "C:/Users/Manoj/Desktop/seaspan_docs/upload_data.png",width = 800, height = 800)
```

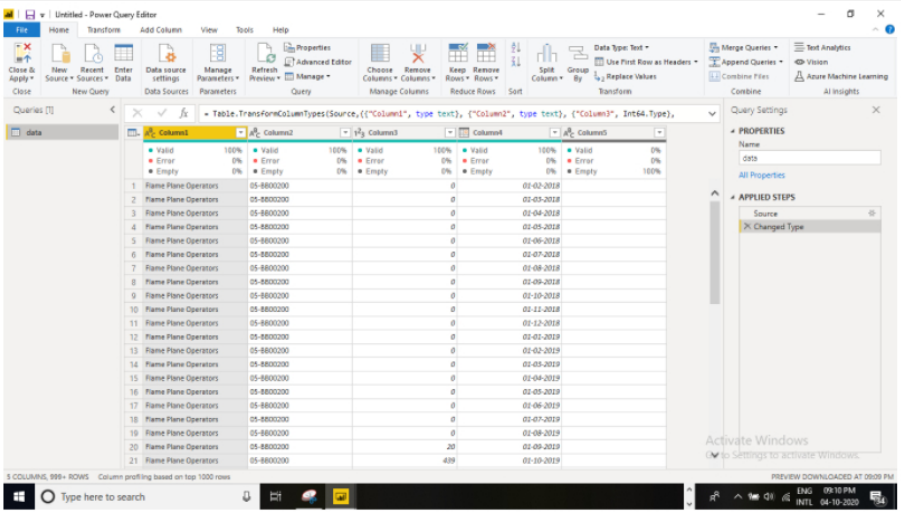
Out[19]:



IV: Transform data in Power Query Editor

In [20]:
```
from IPython.display import Image
Image(filename = "C:/Users/Manoj/Desktop/seaspan_docs/transform_data.png",width = 800, height = 800)
```

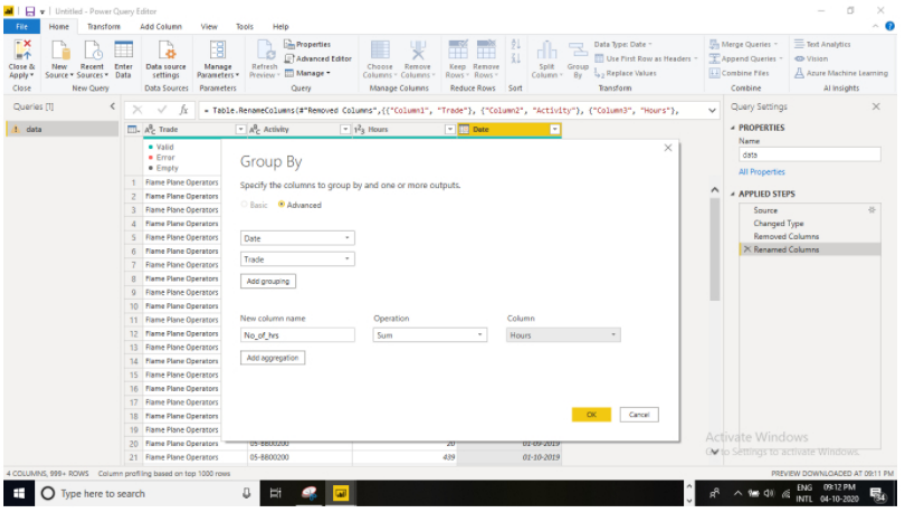
Out[20]:



V: In Power query, use group by function to summarize data according to sum(hours) per trade and date

In [21]:
```
from IPython.display import Image
Image(filename = "C:/Users/Manoj/Desktop/seaspan_docs/summarization.png",width = 800, height = 800)
```

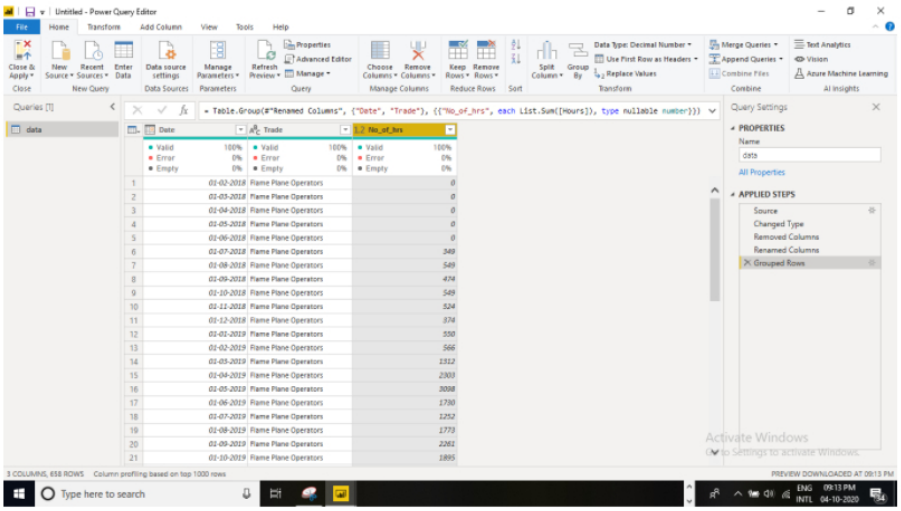
Out[21]:



After applying group by function, our data will look like:

In [22]:
```
from IPython.display import Image
Image(filename = "C:/Users/Manoj/Desktop/seaspan_docs/after_summarization.png",width = 800, height = 800)
```

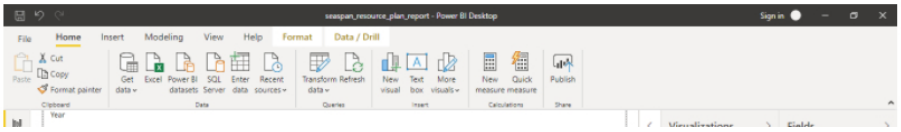
Out[22]:

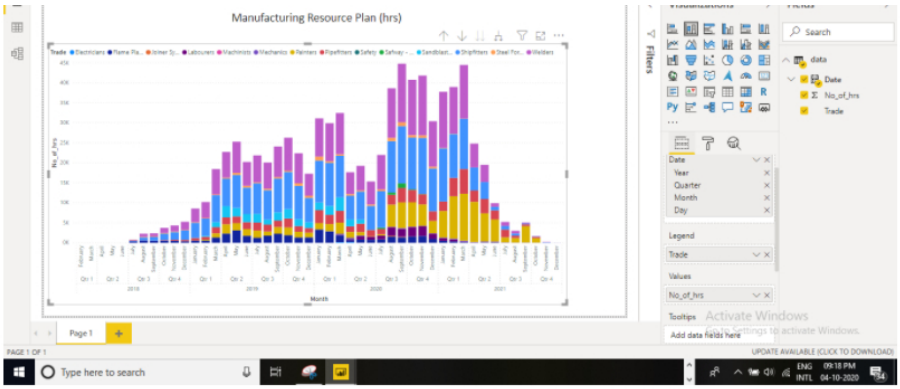


VI. Close & apply it to Power BI desktop
VII. Use 'Stack column chart' to visualize the report in given format.

In [23]:
```
from IPython.display import Image
Image(filename = "C:/Users/Manoj/Desktop/seaspan_docs/final_report.png",width = 800, height = 800)
```

Out[23]:





Conclusion

Above mentioned report can be design using various visualization tools and techniques. Final output is attached along with this workbook.

In [ ]: