

BILINGUAL LANGUAGE SPLIT REPORT

THOMAS EAPEN

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Contents

1	REPORTING & ANALYTICS	2
1.1	BILINGUAL LANGUAGE SPLIT REPORT	2
1.1.1	INITIAL DESIGN	2
1.1.2	SECOND ITERATION	4

List of Figures

1	Bilingual Language Split Report → Initial Design	3
2	Bilingual Language Split Report → Second Iteration Output	5

1 REPORTING & ANALYTICS

1.1 BILINGUAL LANGUAGE SPLIT REPORT

DELIVERABLES

1. Generate reporting on English/Language split for Bilingual Associates

1.1.1 INITIAL DESIGN

The initial design of the report included taking the raw data from Interactive Insights and mapping to data from the Main Table & Team Mapping in GWFM to generate the list of inbound Bilingual Agents from the CSS1 – CRS2 groups working for said time periods. The summarized data is now exported to an Excel sheet where it is used to generate a pivot table.

The issue with the first iteration is that there is a manual component of copying/pasting summarized data from the Anaconda output to the Excel input.

Day	(All)			
Agents	Sum of English Calls	Sum of French Calls	EN %%	FR %%
[REDACTED]	104	237	30.50%	69.50%
[REDACTED]	99	336	22.76%	77.24%
[REDACTED]	86	232	27.04%	72.96%
[REDACTED]	284	297	48.88%	51.12%
[REDACTED]	403	342	54.09%	45.91%
[REDACTED]	95	234	28.88%	71.12%
[REDACTED]	165	233	41.46%	58.54%
[REDACTED]	390	368	51.45%	48.55%
[REDACTED]	305	111	73.32%	26.68%
[REDACTED]	21	54	28.00%	72.00%
[REDACTED]	221	335	39.75%	60.25%
[REDACTED]	160	342	31.87%	68.13%
[REDACTED]	143	408	25.95%	74.05%
[REDACTED]	78	190	29.10%	70.90%
[REDACTED]	91	225	28.80%	71.20%
[REDACTED]	152	303	33.41%	66.59%
[REDACTED]	173	270	39.05%	60.95%
[REDACTED]	142	208	40.57%	59.43%
[REDACTED]	168	274	38.01%	61.99%
[REDACTED]	190	290	39.58%	60.42%
[REDACTED]	231	303	43.26%	56.74%
[REDACTED]	189	354	34.81%	65.19%
[REDACTED]	160	324	33.06%	66.94%
[REDACTED]	136	322	29.69%	70.31%
[REDACTED]	122	146	45.52%	54.48%
[REDACTED]	65	116	35.91%	64.09%
[REDACTED]	274	282	49.28%	50.72%

Figure 1: Bilingual Language Split Report → Initial Design

1.1.2 SECOND ITERATION

The second iteration uses the Matplotlib python framework to generate stack bar graphs indicating the comparative volume of English & French calls. The visualization of the stack bar graph shows an immediate comparison of the English/French split. The graphs also show numerical values to further cement the comparison.

The report has functions to generate individual day reports, weekly or biweekly reports where day to day information is compared for two different weeks. We use matplotlib's pdf generation functions to output a PDF for publishing.

```
def generate_plot(df_result):
    fig, ax1 = plt.subplots(1, 1, figsize=(15, 6))
    N = len(df_result['Agent'])
    ind = np.arange(N)
    width = 0.8

    ax1.set_title("Bilingual EN to FR ratio: " + df_result.iloc[0]['Day'])
    bar_en = ax1.bar(ind, df_result['English Calls'], width, facecolor='r', edgecolor='r')
    bar_fr = ax1.bar(ind, df_result['French Calls'], width, bottom=df_result['English Calls'], facecolor='y', edgecolor='y')
    ax1.set_xticks(np.arange(N))
    ax1.set_xticklabels(df_result['Agent'], rotation=90, fontsize='small')
    ax1.set_ylabel('Calls Taken')
    ax1.set_xlabel('Agent')
    ax1.set_ylim([0, 100])
    ax1.legend((bar_en[0], bar_fr[0]), ('English Calls', 'French Calls'))

def autolabel(bar, subplot, ratio_series, number_of_calls_series):
    i = 0
    #set_trace()
    for rect in bar:
        #height = rect.get_height()
        height = number_of_calls_series.iloc[i]
        subplot.text(rect.get_x() + rect.get_width()/2., 1.05*height, "{0:.0f}%".format(ratio_series.iloc[i] * 100),
                    ha='center', va='bottom', fontsize=7)
        i += 1
    autolabel(bar_en, ax1, df_result['EN %'], df_result['English Calls'])
    autolabel(bar_fr, ax1, df_result['FR %'], df_result["Total Calls"])
    fig.tight_layout()

#with PdfPages('foo.pdf') as pdf:
#    pdf.savefig(fig)
#    pdf.savefig(fig)

#fig.savefig("foo2.pdf", bbox_inches='tight')
return fig
```

Listing 1: Code Listing → Generate stacked bar chart

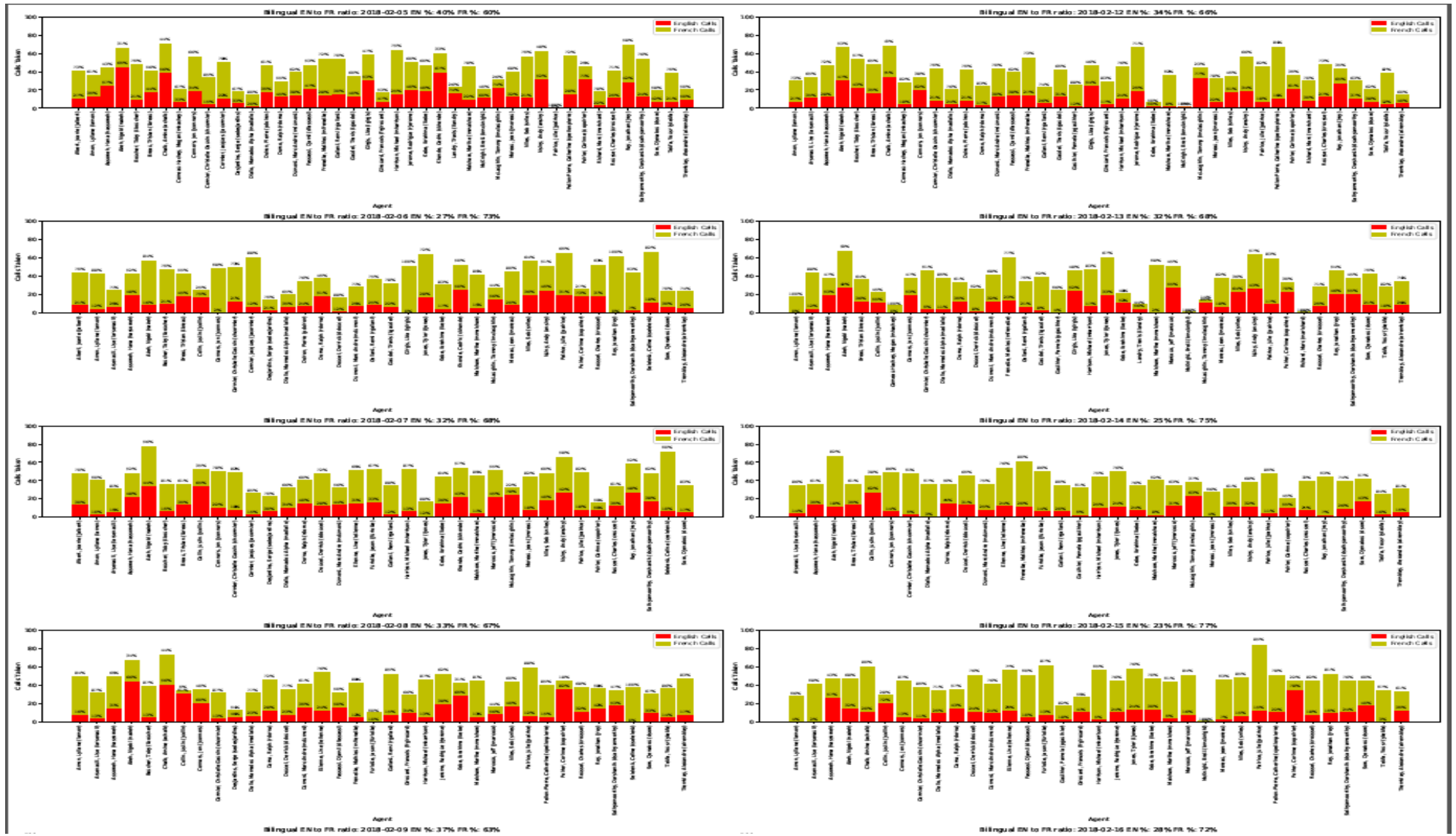


Figure 2: Bilingual Language Split Report → Second Iteration Output