Analyze customer feedback from a fictional car rental company and recommend the most suitable promotional offers with watsonx.ai

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The Problem and Solution

Problem – Analyze customer feedback from a fictional car rental company and recommend the most suitable promotional offers with watsonx.ai

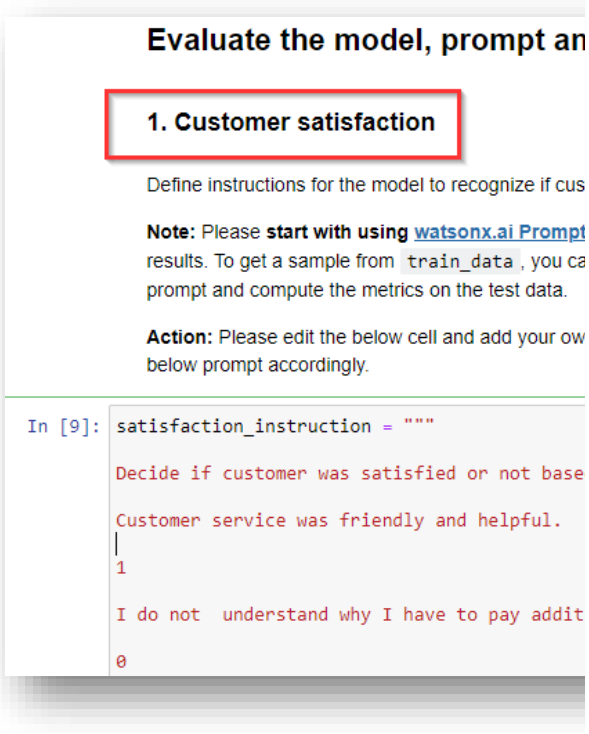
Solution – Using IBM WatsonX.AI, Prolifics was able to improve customer satisfaction detection to being 100% correct. Additionally, customer offer recommendations were improved to 100%.

With these successful detection rates, we were able to do a fictional car rental company customer Satisfaction and recommend the most suitable promotional offers with watsonx.ai

Let’s look at the technical details of the WatsonX.AI solution

Customer Satisfaction

Prompt Data improved f1_micro_score to 1.0



Evaluate the model, prompt an

1. Customer satisfaction

Define instructions for the model to recognize if cus

Note: Please **start with using** watsonx.ai Prompt results. To get a sample from `train_data`, you ca prompt and compute the metrics on the test data.

Action: Please edit the below cell and add your ow below prompt accordingly.

```
In [9]: satisfaction_instruction = """

Decide if customer was satisfied or not base

Customer service was friendly and helpful.

1

I do not  understand why I have to pay addit

0
```

```
In [9]: satisfaction_instruction = """

Decide if customer was satisfied or not based on the given feedback by customer. Respond 1 if satisfied and 0 if unsatisfied.

last time I rented a car was at Manchester, NH airport and they do not have office there anymore

0

Please lower the prices.

0

Excellent response dealing with child seat.
1

all went quite smoothly... it was Enterprise, so they even picked me up to get the car... it was very convenient.

1
```

Calculate the F1 micro score

```
In [12]: from sklearn.metrics import f1_score

print('f1_micro_score', f1_score(satisfaction, results, average='micro'))

    f1_micro_score 1.0
```

Offering Recommendation

Improved from 0.33 to 1.0 after providing enhanced prompting

2. Offer Recommendation

Define instructions for the model to recommend I

Note: Please **start with using** watsonx.ai Pron
`train_data` , you can use e.g. `train_data.he`

Action: Please edit the below cell and add your

In [14]:
```
offer_recommendation_instruction = """Gene

I do not  understand why I have to pay add

Premium features

Based on the customer service personnel I

On-demand pickup location

VERY slow service!

Free Upgrade

It was absolutely ATROCIOUS! My wife and I

Voucher

Provide more convenient car pickup from th

On-demand pickup location
```

In [13]:
```
offer_recommendation_instruction = """Generate next best offer to unsatisfied customer. Choose offer recommendation from the following


Please lower the prices.

Free Upgrade

last time I rented a car was at Manchester, NH airport and they do not have office there anymore

On-demand pickup location

Slow, long lineup

On-demand pickup location

Customer is important for the enjoyment of the car.  If it's a bad experience we won't return to that company if we can avoid it - they

Voucher

They should upgrade me every time.

Free Upgrade
```

Calculate the F1 micro score

In [17]:
```
from sklearn.metrics import f1_score

print('f1_micro_score', f1_score(offer_recommended, results, average='micro'))
```

```
f1_micro_score 1.0
```

Defining the model parameters

We need to provide a set of model parameters that will influ

In [15]:
```
parameters = {
    "decoding_method": "greedy",
    "max_new_tokens": 30,
    "min_new_tokens": 1,
    "repetition_penalty": 1
}

model_id = "ibm/granite-13b-instruct-v2"
```

The Idea & Our Recommendation

Conclusion – Using IBM WatsonX.AI, Prolifics was able to improve customer satisfaction detection to being 100% correct. Additionally, customer offer recommendations were improved to 100%

With these successful detection rates, Analyze customer feedback from a fictional car rental company and recommend the most suitable promotional offers