

Good or Bad Predictions

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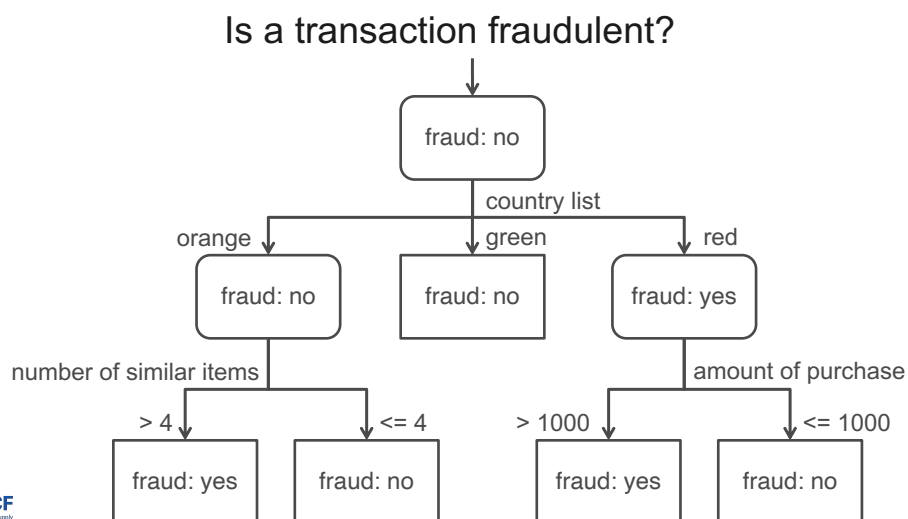
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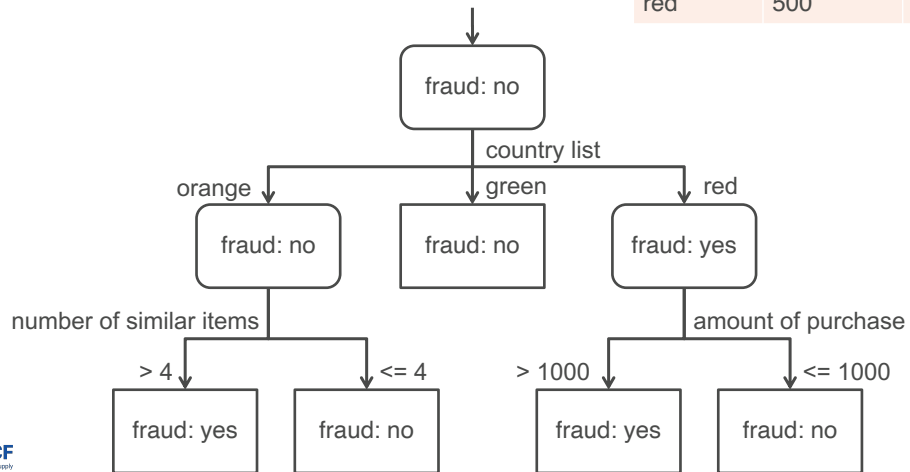
Decision Trees



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Decision Trees

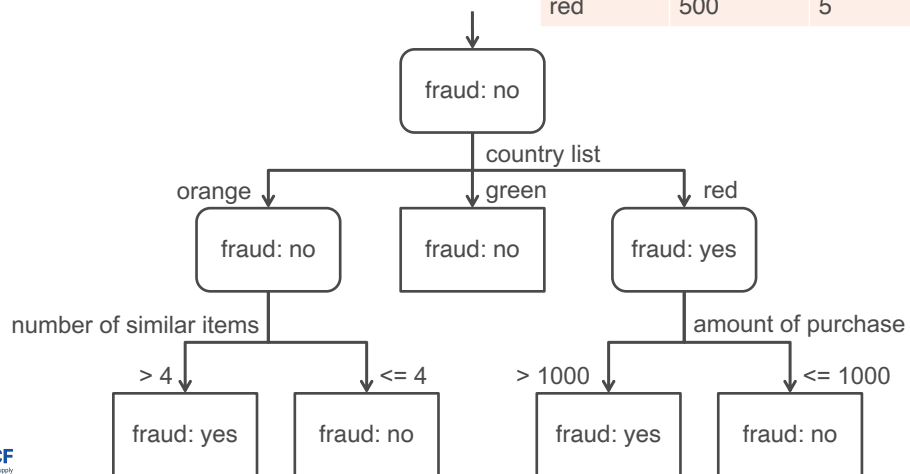
| Country | Amount | Similar items |
|---------|--------|---------------|
| green | 2,000 | 1 |
| orange | 2,000 | 2 |
| orange | 1,500 | 10 |
| red | 500 | 5 |



3

Decision Trees

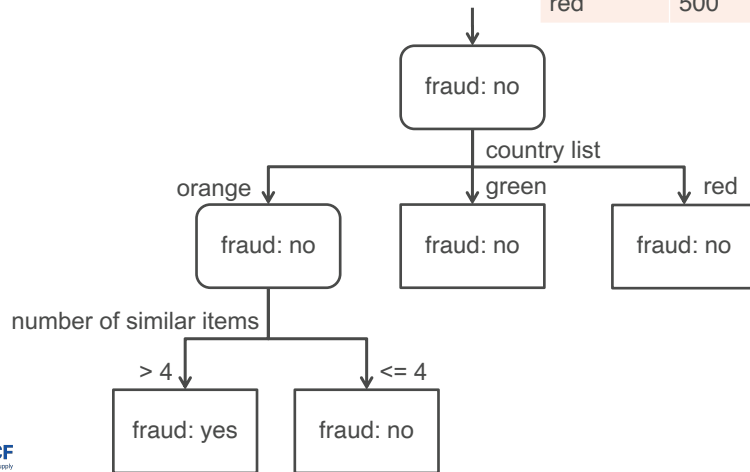
| Country | Amount | Similar items | Fraud |
|---------|--------|---------------|-------|
| green | 2,000 | 1 | no |
| orange | 2,000 | 2 | no |
| orange | 1,500 | 10 | yes |
| red | 500 | 5 | no |



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Decision Trees

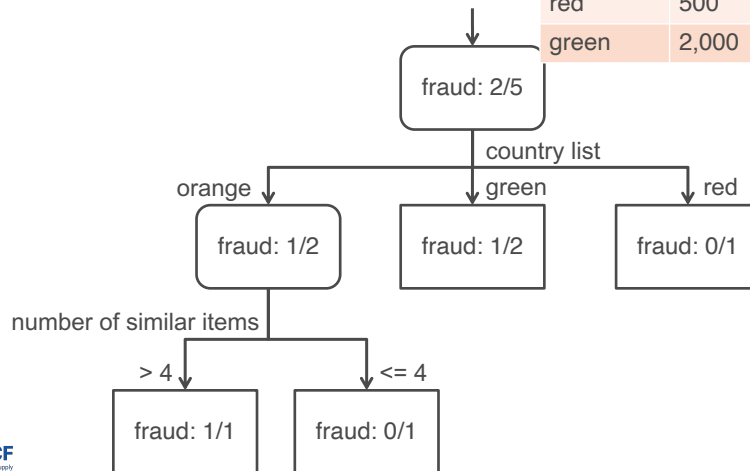
| Country | Amount | Similar items | Fraud |
|---------|--------|---------------|-------|
| green | 2,000 | 1 | no |
| orange | 2,000 | 2 | no |
| orange | 1,500 | 10 | yes |
| red | 500 | 5 | no |



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Decision Trees

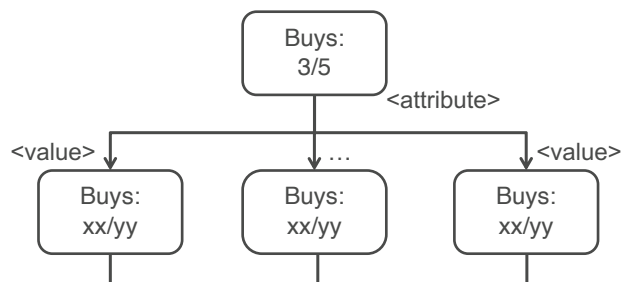
| Country | Amount | Similar items | Fraud |
|---------|--------|---------------|-------|
| green | 2,000 | 1 | no |
| orange | 2,000 | 2 | no |
| orange | 1,500 | 10 | yes |
| red | 500 | 5 | no |
| green | 2,000 | 1 | yes |



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Decision Trees

| Case | Advertised | Location | Type | Buys |
|------|------------|---------------|-----------------|------|
| 1 | In store | Cash register | Two-for-one | Yes |
| 2 | In paper | Cash register | X% off | Yes |
| 3 | In store | In store | X% off | No |
| 4 | In store | Cash register | Two-for-one | Yes |
| 5 | In paper | In store | Today's special | No |



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Introduction

Your company receives its sales predictions from customers. Unfortunately, customers sometimes send incorrect predictions. Your task is to detect incorrect predictions, such that you can ask your customers to revise them.

Obviously, you do not want to bother your customers when it not necessary. Also, you do not want to use incorrect predictions, because that may lead to missed sales or excess stock. So you will want to be as precise as possible about which predictions are correct.

Can you use an AI to find incorrect predictions for you?



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Predictions

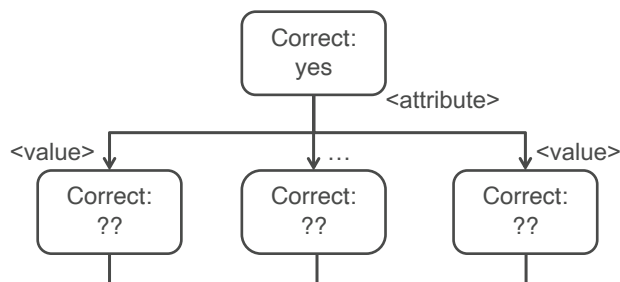
For each week we have:

- number ordered
- number predicted to be ordered next week (plus1)
- number predicted to be ordered in two weeks (plus2)
- number predicted to be ordered in three weeks (plus3)
- pmi index
- aex index

| week | actual | plus1 | plus2 | plus3 | pmi | aex | correct |
|------|--------|-------|-------|-------|------|-----|---------|
| 1 | 0 | 0 | 3 | 0 | 57.0 | 469 | True |
| 2 | 0 | 4 | 0 | 4 | 52.0 | 474 | True |
| 3 | 5 | 3 | 4 | 3 | 50.2 | 484 | False |
| 4 | 0 | 3 | 1 | 0 | 53.1 | 487 | True |
| 5 | 3 | 2 | 2 | 1 | 50.4 | 494 | True |
| 6 | 1 | 1 | 0 | 2 | 50.9 | 500 | True |
| 7 | 1 | 0 | 4 | 3 | 54.2 | 490 | True |
| 8 | 0 | 3 | -1 | 3 | 54.1 | 496 | False |
| 9 | 3 | 2 | 5 | 2 | 52.0 | 508 | True |
| 10 | 2 | -1 | 1 | 0 | 52.0 | 497 | False |
| 11 | 3 | 2 | 0 | 0 | 49.1 | 504 | True |
| 12 | 2 | 0 | 2 | 3 | 49.9 | 488 | False |
| 13 | 0 | 0 | 3 | 1 | 56.5 | 491 | True |
| 14 | 0 | 4 | 3 | 1 | 53.9 | 491 | True |
| 15 | 5 | 2 | 1 | 3 | 47.7 | 503 | True |



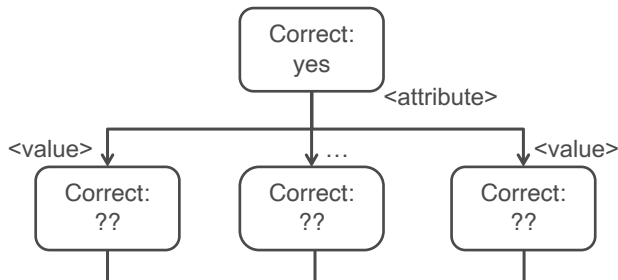
Build your decision tree



| week | actual | plus1 | plus2 | plus3 | pmi | aex | correct |
|------|--------|-------|-------|-------|------|-----|---------|
| 1 | 0 | 0 | 3 | 0 | 57.0 | 469 | True |
| 2 | 0 | 4 | 0 | 4 | 52.0 | 474 | True |
| 3 | 5 | 3 | 4 | 3 | 50.2 | 484 | False |
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Test your decision tree



| week | actual | plus1 | plus2 | plus3 | pmi | aex | correct |
|------|--------|-------|-------|-------|------|-----|---------|
| 1 | 0 | 0 | 3 | 0 | 57.0 | 469 | True |
| 2 | 0 | 4 | 0 | 4 | 52.0 | 474 | True |
| 3 | 5 | 3 | 4 | 3 | 50.2 | 484 | False |
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Thank you



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