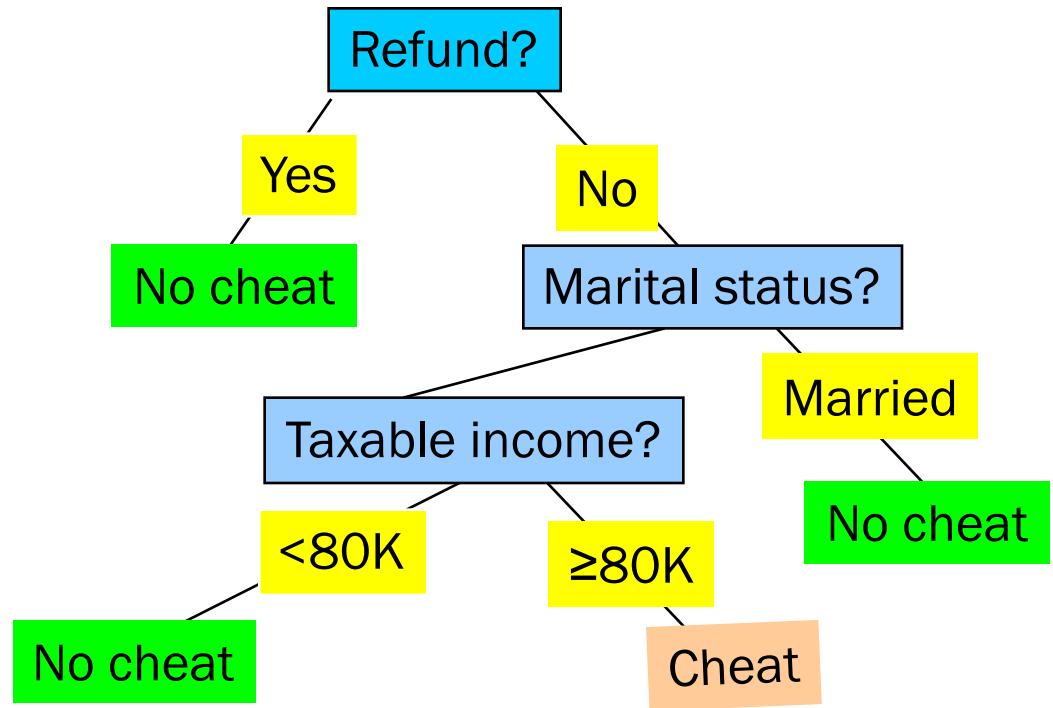




# APPLY MODEL

**SYRACUSE UNIVERSITY**  
School of Information Studies

# CONVERTING DECISION TREE TO DECISION RULES



Tree can be displayed  
as a set of rules:

```
if Refund = "Yes," then "No cheat"
else if Marital_status = "Married," then "No cheat"
  else if Taxable_income < 80K, then "No cheat"
  else "Cheat"
```

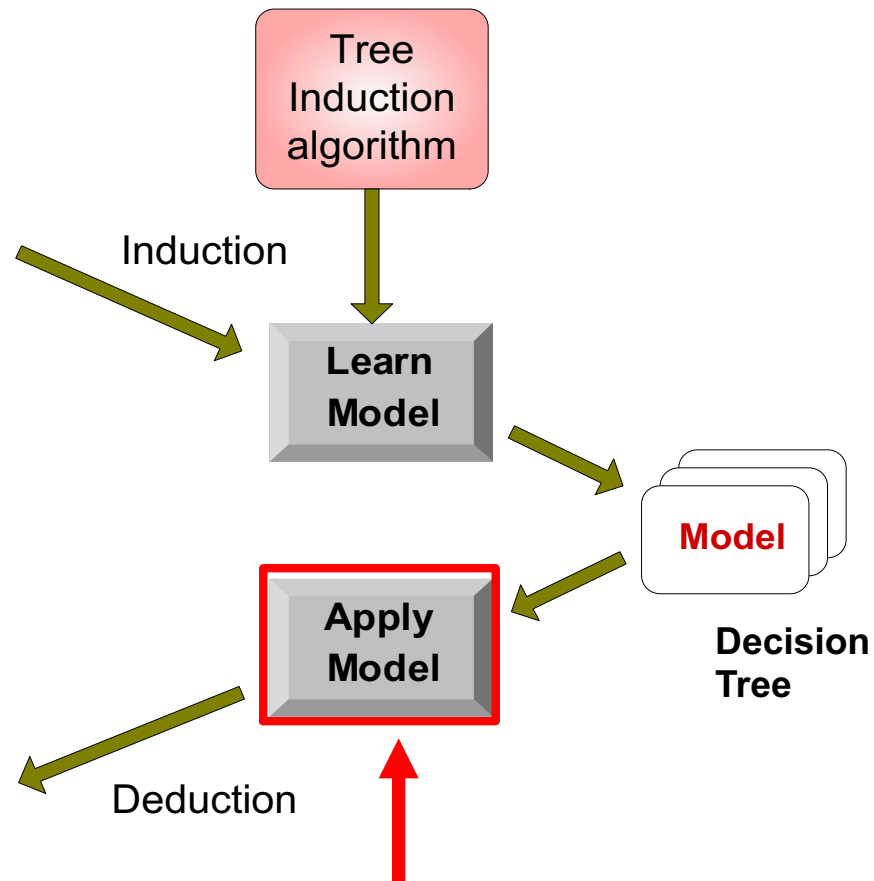
# DECISION TREE CLASSIFICATION TASK

| Tid | Attrib1 | Attrib2 | Attrib3 | Class |
|-----|---------|---------|---------|-------|
| 1   | Yes     | Large   | 125K    | No    |
| 2   | No      | Medium  | 100K    | No    |
| 3   | No      | Small   | 70K     | No    |
| 4   | Yes     | Medium  | 120K    | No    |
| 5   | No      | Large   | 95K     | Yes   |
| 6   | No      | Medium  | 60K     | No    |
| 7   | Yes     | Large   | 220K    | No    |
| 8   | No      | Small   | 85K     | Yes   |
| 9   | No      | Medium  | 75K     | No    |
| 10  | No      | Small   | 90K     | Yes   |

Training Set

| Tid | Attrib1 | Attrib2 | Attrib3 | Class |
|-----|---------|---------|---------|-------|
| 11  | No      | Small   | 55K     | ?     |
| 12  | Yes     | Medium  | 80K     | ?     |
| 13  | Yes     | Large   | 110K    | ?     |
| 14  | No      | Small   | 95K     | ?     |
| 15  | No      | Large   | 67K     | ?     |

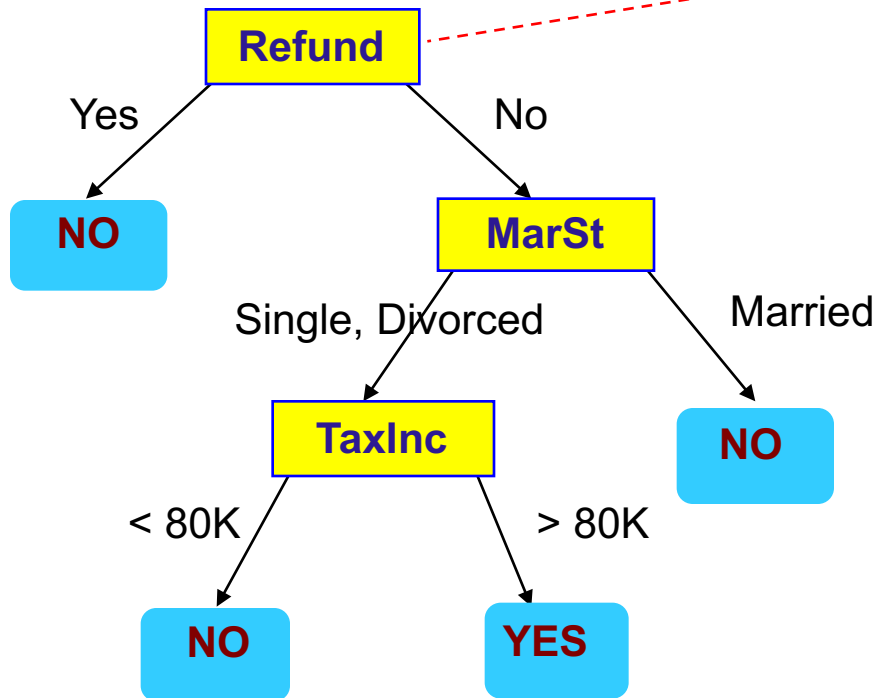
Test Set



# APPLY MODEL TO TEST DATA

## Test Data

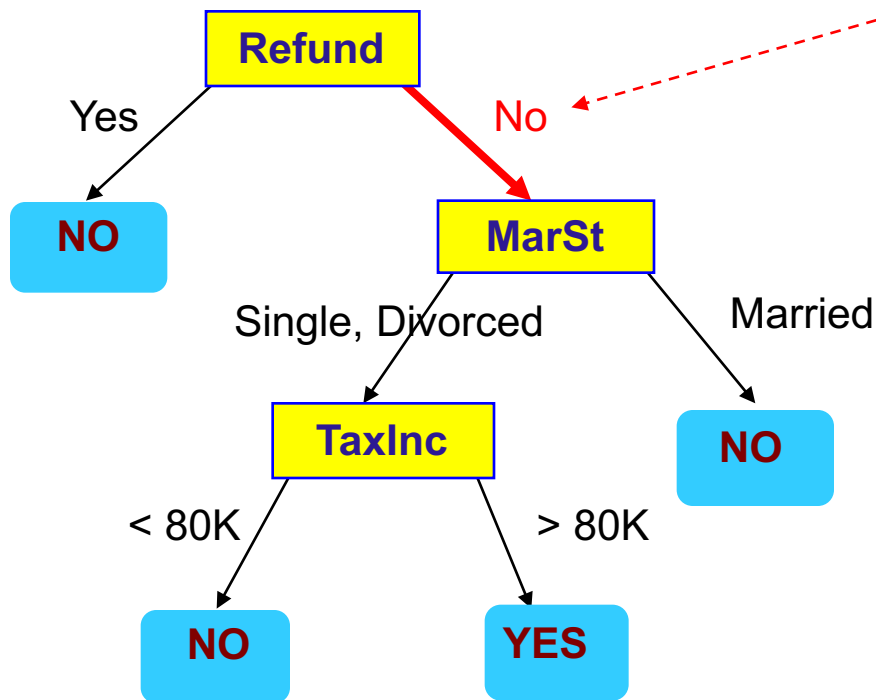
| Refund | Marital Status | Taxable Income | Cheat |
|--------|----------------|----------------|-------|
| No     | Married        | 80K            | ?     |



# APPLY MODEL TO TEST DATA

## Test Data

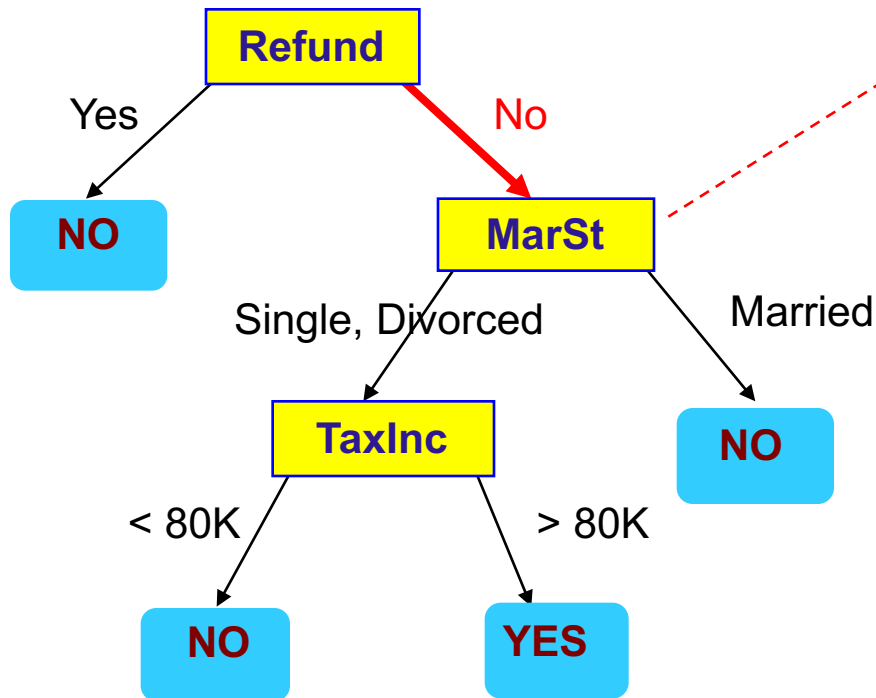
| Refund | Marital Status | Taxable Income | Cheat |
|--------|----------------|----------------|-------|
| No     | Married        | 80K            | ?     |



# APPLY MODEL TO TEST DATA

## Test Data

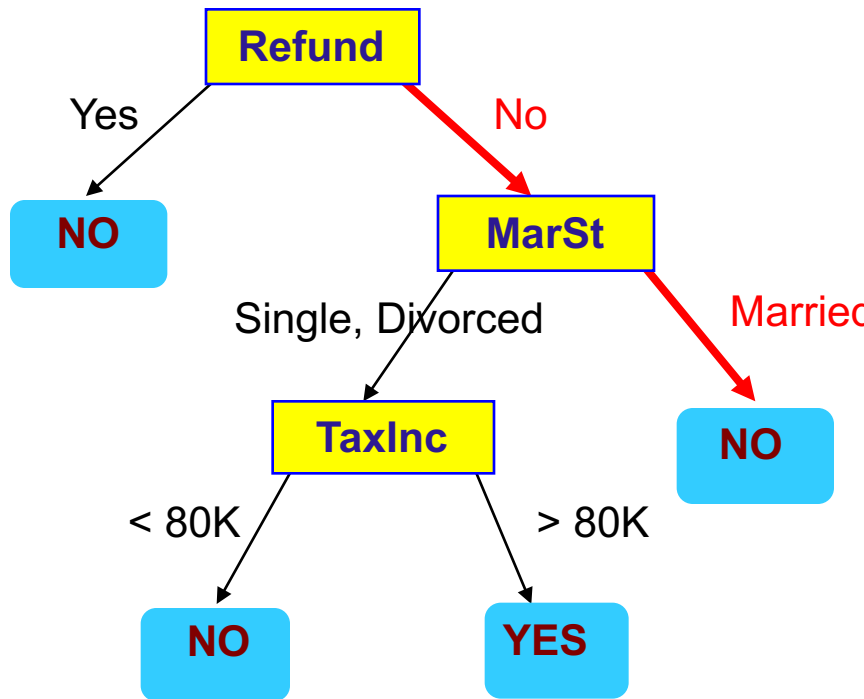
| Refund | Marital Status | Taxable Income | Cheat |
|--------|----------------|----------------|-------|
| No     | Married        | 80K            | ?     |



# APPLY MODEL TO TEST DATA

## Test Data

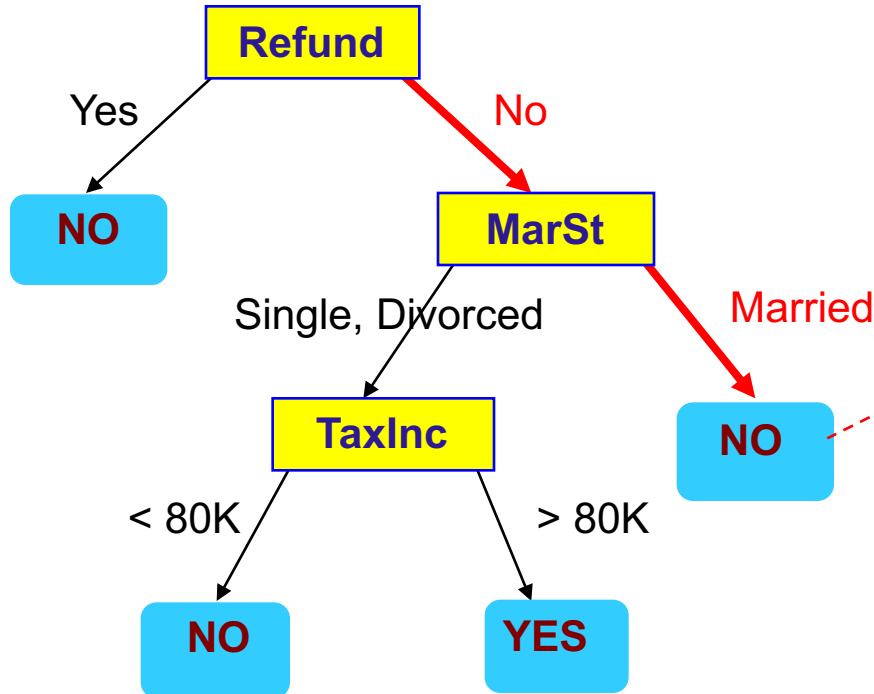
| Refund | Marital Status | Taxable Income | Cheat |
|--------|----------------|----------------|-------|
| No     | Married        | 80K            | ?     |



# APPLY MODEL TO TEST DATA

## Test Data

| Refund | Marital Status | Taxable Income | Cheat |
|--------|----------------|----------------|-------|
| No     | Married        | 80K            | ?     |



Assign Cheat to "No."