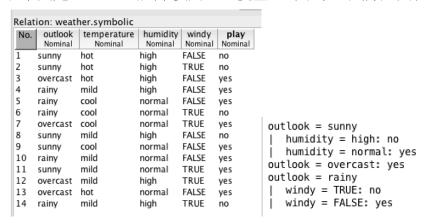
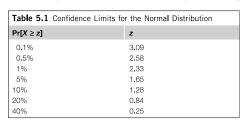
電子商務技術 期中考

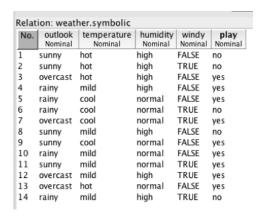
- *** 請按照題號順序作答,不會的題目也請寫上題號 所有的計算過程都應寫出,否則扣分
- 1. 右下圖是 weather 測試集使用 ID3 後產生的結果,試據此回答以下問題:



- (1.1) 為何根節點 (root) 為 outlook ? (15%)
- (1.2) 如果使用 J48 是否根節點仍為 outlook? (10%)
- 2. 某訓練出來的預測模型於 4000 筆資料的測試後得到 75%的正確率,試問它在 90%信心度條件下的真實正確率為何?(10%)



3. 假設 support=30%, confidence=90%, 使用 Apriori Algorithm 回答以下問題:



- (3.1) 所有 Frequent Itemsets。(10%)
- (3.2) 3 條關聯規則。(10%)

- 4. 使用 single-linkage agglomerative clustering 將以下 9 點分為三群: (15%) p₁(1,0), p₂(1,1), p₃(2,2), p₄(4,0), p₅(5,2), p₆(6,3), p₇(4,5), p₈(4,4), p₉(3,4)
- 5. 下圖為資料集與利用 NaiveBayes 訓練 watch-promo 後的預測結果,請依序回答以下問題:

No.	Income-Range Nominal	Watch-Promo Nominal	Credit-Card-Ins Nominal	Sex Nominal	Age Numeric
1	40-50000	No	No	Male	45.0
2	30-40000	Yes	No	Female	40.0
3	40-50000	No	No	Male	42.0
4	30-40000	Yes	Yes	Male	43.0
5	50-60000	No	No	Female	38.0
6	20-30000	No	No	Female	55.0
7	30-40000	No	Yes	Male	35.0
8	20-30000	Yes	No	Male	27.0
9	30-40000	No	No	Male	43.0
10	30-40000	Yes	No	Female	41.0
11	40-50000	Yes	No	Female	43.0
12	20-30000	Yes	No	Male	29.0
13	50-60000	Yes	No	Female	39.0
14	40-50000	Yes	No	Male	55.0
15	20-30000	No	Yes	Female	19.0

=== Predictions on training set ===

```
inst#,
      actual, predicted, error, probability distribution
                             + *0.546 0.454
         2:No
                  1:Yes
 1
 2
        1:Yes
                  1:Yes
                                *0.692 0.308
 3
         2:No
                  1:Yes
                             + *0.565 0.435
 4
        1:Yes
                   2:No
                                0.464 *0.536
 5
                             + *0.627 0.373
        2:No
                  1:Yes
 6
         2:No
                   2:No
                                 0.471 *0.529
 7
        2:No
                   2:No
                                 0.47 *0.53
 8
                                0.492 *0.508
        1:Yes
                   2:No
        2:No
                  1:Yes
                             + *0.634 0.366
10
        1:Yes
                                *0.684 0.316
                  1:Yes
11
        1:Yes
                  1:Yes
                                *0.619 0.381
12
        1:Yes
                  1:Yes
                                *0.53
13
                                *0.627 0.373
        1:Yes
                  1:Yes
14
        1:Yes
                   2:No
                                 0.416 *0.584
         2:No
                   2:No
                                 0.28 *0.72
```

- (5.1) Confusion matrix? (5%)
- (5.2) TP rate of class No? (5%)
- (5.3) F-measure of class Yes? (5%)
- (5.4) Kappa statistic? (5%)
- (5.5) 試繪出 Lift chart of class No。(10%)