

Checkpoint 4 : Final exam 2016 / 2016

- a. Construct an optimized decision tree to demonstrate the logic (conditions and actions sequences of process flows) in calculating the total payment/invoice

- Demonstrate the logic flows for calculate :

1. E-coupon (\$10 discount)
2. Purchase amount (> 250 or ≤ 250)
3. numbers of order items (≤ 3 or ≥ 4)
4. Delivery day choice (Next, 2nd or 7th day)

- Decision tree structure :

1. Root node = Does the customer have an e-coupon?
 - Yes : proceed to discount logic
 - No : Skip discount logic

- Purchase amount check : if the total spend > 250
 - Yes : Apply rules for high-value order.

- number of item :
 - ≤ 3 Items : use delivery charges based on delivery day.
 - ≥ 4 Item : use alternate delivery charges.

- Delivery day : Charges vary (Next : 25, 2nd : 10, 7th : 15)
 - If ≤ 3 ; different rates if ≥ 4

- No : Applying standard delivery charges (Next : 35, 2nd : 15, 7th : 10 if ≤ 3 ; scaled rated if ≥ 4)

- Final calculation also uses max profit = $\frac{1}{2}$ total profit

• with coupon: Total invoice = (Purchase + Delivery) \times

example 250 Hrs base charge \rightarrow 10 gms

• without coupon: total invoice = Purchase + Delivery Charge.

: stations not soft side constraints

(through C1) answer 3.1

($0.25 \rightarrow 0.25$) third constraint

\rightarrow 250 hrs base + 200 min. gms

\rightarrow 250 hrs base + 200 min. gms

: delivery cost variable

\Rightarrow Start = Invoice total is ≥ 0 = 0

Purchase + Delivery Charge. = 0

yes \rightarrow E-coupon \rightarrow No \rightarrow purchase > 258 ?

Purchase > 258 ?

yes

Item ≤ 3 ?

yes

Next = 25

2nd = 10

7th = $n \times 1.5$

E-coupon

No

: next purchase > 258 ?

yes

Item ≤ 3 ?

no

Next = $n \times 6.0$

2nd = $n \times 2.5$

7th = free

yes \rightarrow purchase > 258 ?

yes

Item ≤ 3 ?

yes

Next = 35

2nd = $n \times 1.5$

7th = 10

no

no

next = $n \times 7.5$

2nd = $n \times 3.5$

7th = $n \times 2.5$

b. In your opinion, which method (decision table or decision tree) is more helpful to analyze the process flows in calculating total payment invoice? Justify your reason.

= I think the decision tree is more helpful. ~~to analyze the process flows in calculating total~~ Because it visually organizes complex conditions into a logical, step by step flow.