

Dated:

Assignment 01

Part - 1

Ans: Problem - Analysis - Chart

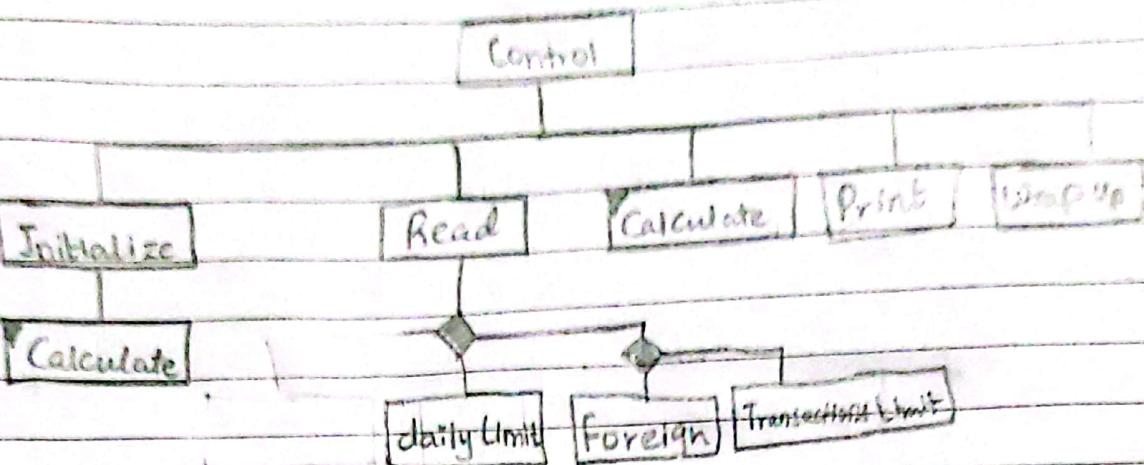
Given Data	Required Output
Fixed daily limit country foreign Transactions per hour	flag
Processing	Alternative Solution
<pre> IF (! Fixed daily limit) THEN Flag ← TRUE ENDIF ELSE IF (Foreign) THEN Flag ← TRUE ENDIF ELSE IF (Transactions per hour > 3) THEN Flag ← TRUE ENDIF </pre>	1) Ask user for daily limit 2) Define transactions per hour as constant.

Input - Processing - Output

Input	Processing	Module Reference	Output
daily limit	1) Enter daily limit	1) Read	Flag.
foreign	2) Ask Is this a foreign transaction?	2) Read	
Transaction per hour	3) Enter transactions per hour. 4) Calculate Flag. 5) Print Flag. 6) End	3) Read 4) Calc 5) Print 6) Bank Fraud Control	

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Interactivity Chart



Algorithm

- 1) Ask user about transaction
- 2) Ask user "Enter Amount, Country,
- 3) Ask user that "Is this a foreign transaction"
- 4) Set Flag as True if user enters Yes
- 5) Set Flag True if Transactions > Transactions Limit
- 6) Display "Fraud Alert ! " If Flag is ~~False~~ True.

Pseudocode

```
START → Flag ← FALSE  
Transaction Limit ← 3  
dailyLimit ← 50000  
PRINT "Enter the transaction amount"  
INPUT Amount  
PRINT "Number of transactions"  
INPUT Transactions  
PRINT "Is this a foreign transaction : Yes OR No"
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INPUT Answer

IF Amount \geq dailylimit THEN
Flag \leftarrow TRUE

ENDIF

IF Transactions > Transaction limit THEN
Flag \leftarrow TRUE

ENDIF

IF {Answer} == Yes THEN
Flag \leftarrow TRUE

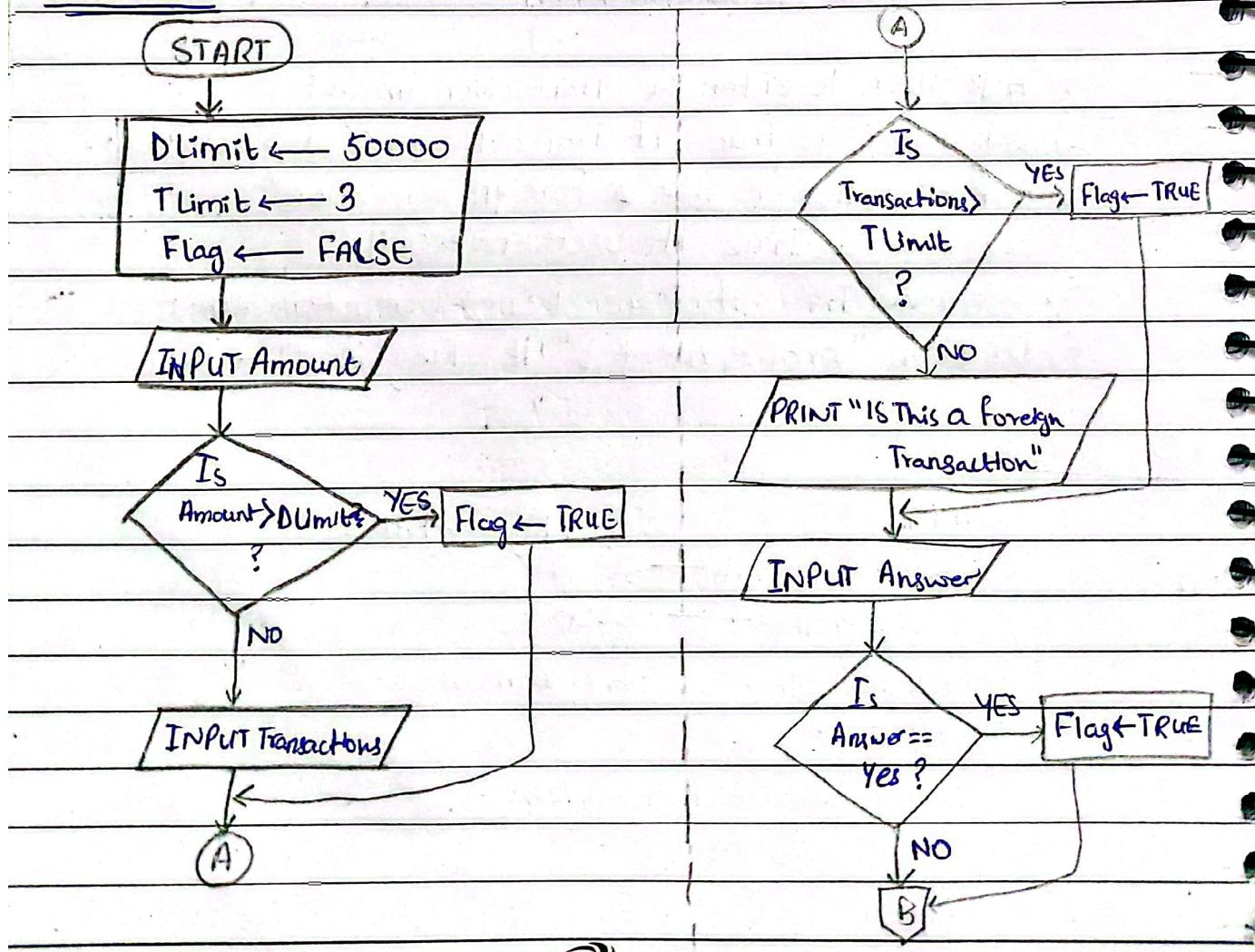
ENDIF

IF (Flag) THEN
PRINT "Fraud Alert!"

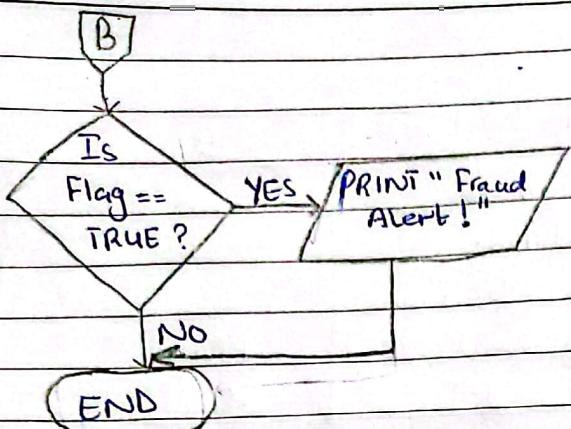
ENDIF

END

Flow Chart



Dated:



Answer of Q2

Problem Analysis Chart

Given Data

x -coordinate

y -coordinate

Quadrant

Required Output

Quadrant

Processing

INPUT x -coordinate

INPUT y -coordinate

IF ($x > 0$ AND $y > 0$) THEN

 THEN Quadrant \leftarrow "Quadrant I"

ELSE IF ($x > 0$ AND $y < 0$) THEN

 Quadrant \leftarrow "Quadrant IV"

ELSE IF ($x < 0$ AND $y < 0$) THEN

 Quadrant \leftarrow "Quadrant III"

ELSE IF ($x < 0$ AND $y > 0$) THEN

 Quadrant \leftarrow "Quadrant II"

ENDIF

PRINT Quadrant

Alternative

1- Instead of taking input, take four points, & from each quadrant, and use them to show which point lies in which quadrant. It will make easy for students to understand.

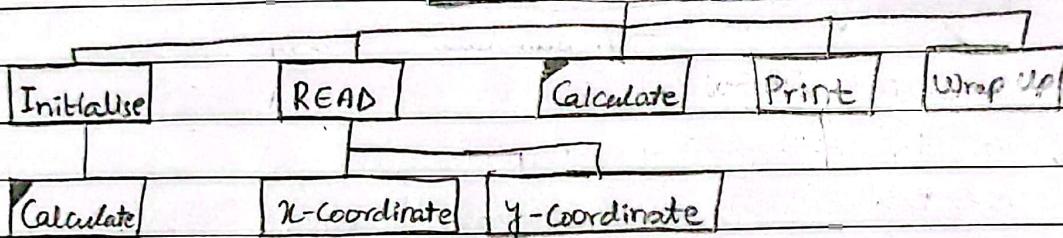
Dated:

Input - Processing - Output

<u>Input</u>	<u>Processing</u>	<u>Module Ref</u>	<u>Output</u>
x	1) Enter x-coordinate 2) Enter y-coordinate 3) Calculate the Quadrant 4) Display the Quadrant 5) END	READ READ Calc Print	Quadrant Quadrant Control
y			

Interactivity Chart

Quadrant Control



Algorithm

1) START

2) Ask user to enter x and y coordinates.

3) Check the possible quadrant according to the following rules.

Quadrant I for $(+x, +y)$

Quadrant II for $(-x, +y)$

Quadrant III for $(-x, -y)$

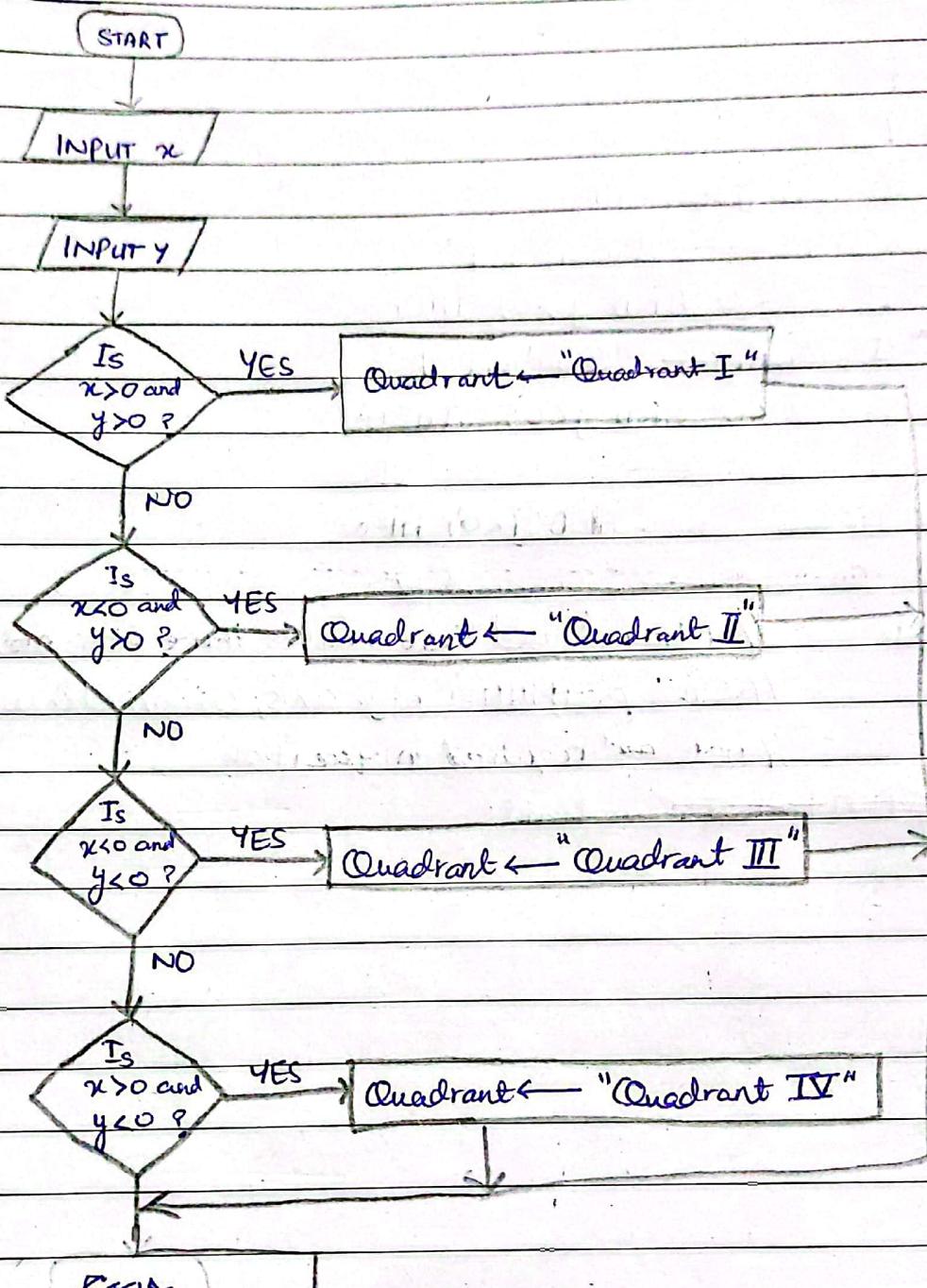
Quadrant IV for $(+x, -y)$

4) Display the Quadrant

5) End.

Dated:

Flowchart



Pseudocode
START

Dated:

Pseudocode

START

INPUT x

INPUT y

IF ($x > 0$ AND $y > 0$) THEN

Quadrant \leftarrow "Quadrant I"

ELSE IF ($x < 0$ AND $y > 0$) THEN

Quadrant \leftarrow "Quadrant II"

ELSE IF ($x < 0$ AND $y < 0$) THEN

Quadrant \leftarrow "Quadrant III"

ELSE IF ~~(~~ ($x > 0$ AND $y < 0$) THEN

Quadrant \leftarrow "Quadrant IV"

ENDIF // I haven't used Else because there are more than 1

// Other possibilities e.g. axis, origin etc which are

// not as required in question.

~~OUTPUT~~ PRINT Quadrant.

Assignment

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Answer to Q3 :-

Prog. Problem - Analysis - Chart

<u>Given Data</u>	<u>Required Output</u>
age eyesight written driving medical ticense eligible	eligible
<u>Processing</u> → Check if age → Input age IF age > 18 then Input eyesight If (eyesight) then Input written If (written) then Input driving If (driving) then IF (age > 60) then Input medical If (medical) then eligible ← True "Eligible" else eligible ← False "Not Eligible" else eligible ← "Eligible"	<u>Alternative</u> 1) Ask user the percentage instead of grade, in exams. 2)

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else

eligible ← "Not Eligible"

else

eligible ← "Retake the written test"

else

eligible ← "Need a prescription for glasses"

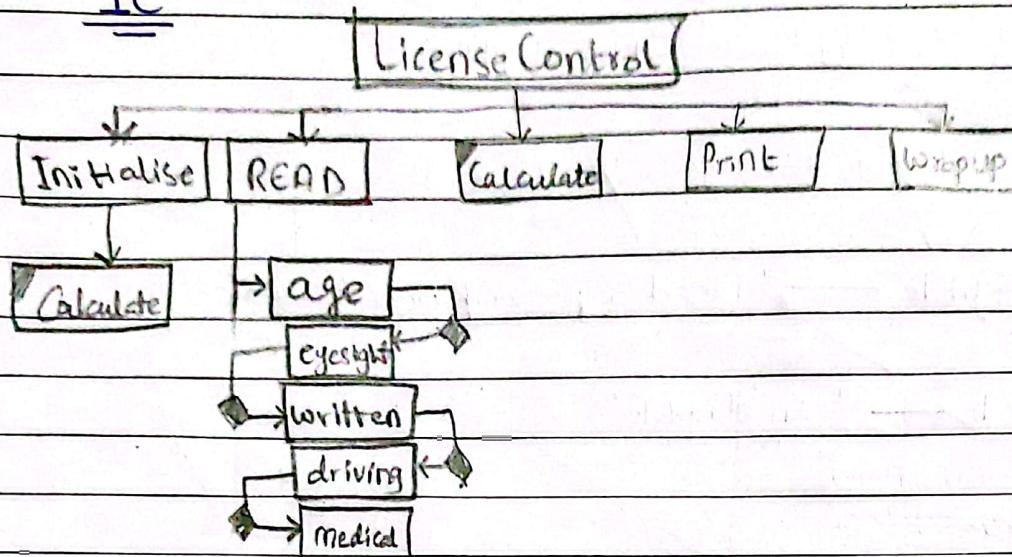
else

eligible ← "In eligible"

Print eligible.

IPO

<u>Input</u>	<u>Processing</u>	<u>Module Ref</u>	<u>Output</u>
age	1) Ask user for his age	READ	Eligible
eyesight	2) Check his age.	Calc	
written	3) Ask user for his ^{status} grade in	READ	
driving	i) eyesight exam	Calc	
medical	ii) written exam	Calc	
	iii) driving exam	Calc	
	and if $age \geq 60$ then in		
	iv) medical exam.	Calc	
	4) Check it, if all True then	Calc	
	Eligible ← "Eligible".		
	5) Print Eligible.	PRINT	PRINT
	6) End		License Control

ICAlgorithm

- 1) Start
- 2) Ask the user "Enter your age: " \rightarrow
- 3) Read and store it in age.
- 4) Check that Is $age < 18$; If yes then
Display "ineligible."
- 5) Ask for ~~written test~~. eyesight test.*
- 6) Check . have you user passed or failed it ; if
~~fail~~ passed then Ask display "not eligible, prescription
required"
- 7) If pass then Ask for ~~eyesight exam~~ - written test.
- 8) If ~~pass~~ ^{fail} then Display "Not eligible" else
Ask for the Driving test result.
- 9) If ~~pass~~ the fail then Display "Not eligible"
else ~~as~~ Check if $Age \leq 60$ then Display
"Eligible for license." else Ask if do they
have medical certificate.
- 10) If ~~is~~ Yes then Display "Eligible" else
Display "Not eligible".

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Pseudocode

START

PRINT "Enter your Age = "

INPUT age

IF (age < 18) THEN

 PRINT "Ineligible"

Else

 PRINT "Enter your eyesight exam result"

 INPUT eyesight

 IF (eyesight == TRUE) THEN

 PRINT "Enter your written test result"

 INPUT written

 IF (written == TRUE) THEN

 PRINT "Enter your driving test result"

 INPUT driving

 IF (driving == TRUE) THEN

 IF (age < 60) THEN

 PRINT "Eligible"

 ELSE

 PRINT "Do you have medical certificate"

 INPUT answer

 IF (answer == "Yes") THEN

 PRINT "Eligible"

 ELSE

 PRINT "Not eligible"

 ENDIF

 ELSE

 NOT

 PRINT "Ineligible"

 ENDIF

ELSE

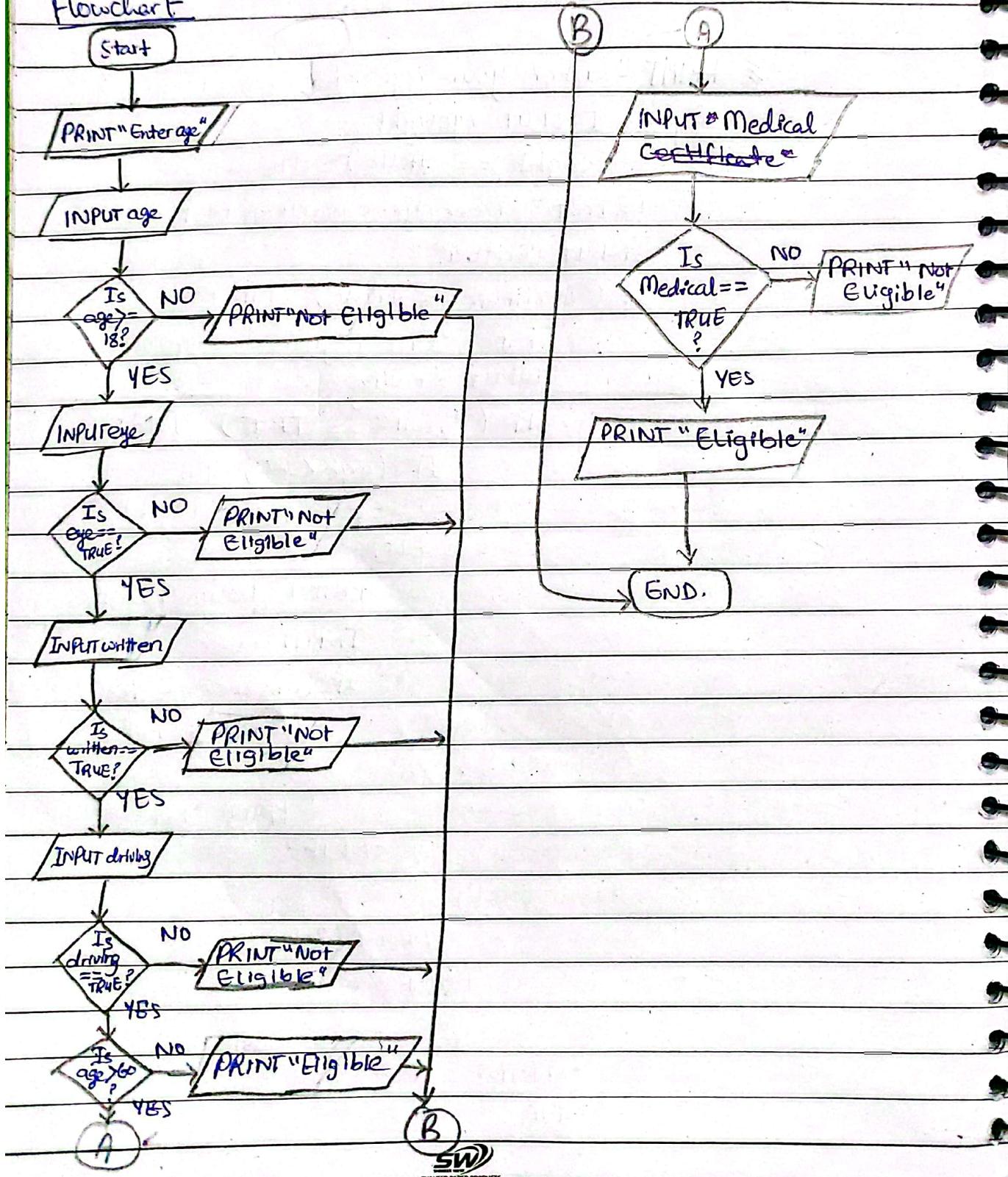
 PRINT "Not Eligible, give retake"

ENDIF

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ELSE
PRINT "Age Not eligible, need prescription"
ENDIF
ENDIF

Flowchart



Answer 04

Given Data

Card1

Card2

Card3

Card4

Card5

Eligible

fullHouse \leftarrow FalseRequired Output

full house.

Processing

- 1) IF Card1 == Card2 == Card3
then IF Card4 == Card5
then Full House \leftarrow True
- 2) Else If Card1 == Card4 == Card5
then If Card2 == Card3
then Full House \leftarrow True
- 3) Else If Card2 == Card4 == Card5
then If Card1 == Card3
then Full House \leftarrow True
- 4) Else If Card3 == Card4 == Card5
then Card1 == Card2
then Full house \leftarrow True.
- 5) Else full house \leftarrow False.

G) Check if 3 cards have

same number and other
 two cards have same
 number but different
 from those 3 then
 full house \leftarrow True
 Else full house \leftarrow False

Alternative Solution

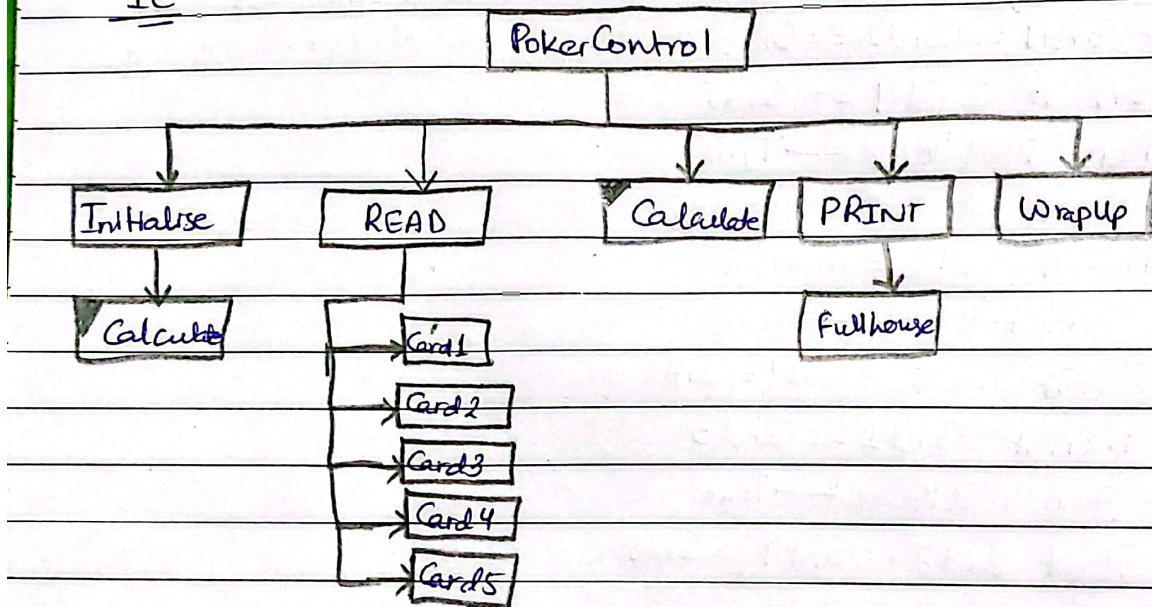
1) NO alternative solution.

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IPO

<u>Input</u>	<u>Processing</u>	<u>Module Ref</u>	<u>Output</u>
Card1	Enter Card1	READ	full house.
Card2	Enter Card2	READ	
Card3	Enter Card3	READ	
Card4	Enter Card4	READ	
Card5	Enter Card5	READ	
	Calc full house	Calc	
	Print full house	PRINT	
	End.	PokerControl	

IC



Algorithm

- 1) Start-
- 2) Ask user to enter 5 card ranks
- 3) Check if 3 card ranks are same and 2 card ranks are same but different from other three. Then Display "Full house"
- 4) Else Display "Not full house".

Dated:

Pseudocode

START

INPUT C₁, C₂, C₃, C₄, C₅

IF (C₁ == C₂) AND (C₂ == C₃) AND (C₃ == C₄) AND (C₄ == C₅) THEN

PRINT "House full"

ELSE IF (C₁ == C₃) AND (C₃ == C₄) AND (C₄ == C₅) AND (C₂ == C₅) THEN

PRINT "House full"

ELSE IF (C₁ ==

START

INPUT C₁, C₂, C₃, C₄, C₅

IF (C₁ == C₂) THEN

IF (C₂ == C₃) THEN

IF (C₄ == C₅) THEN AND (C₄ != C₂) THEN

PRINT "House full"

ENDIF

ENDIF

ELSE IF (C₂ == C₄) THEN

- IF (C₃ == C₅) THEN AND THEN

PRINT "House full"

ENDIF

ELSE IF (C₂ == C₅) THEN

IF (C₃ == C₄) THEN

PRINT "House full"

ENDIF

ELSE ENDIF

ELSE IF (C₃ == C₁) THEN

IF (C₃ == C₄) THEN

IF (C₂ == C₅) THEN

PRINT "House full"

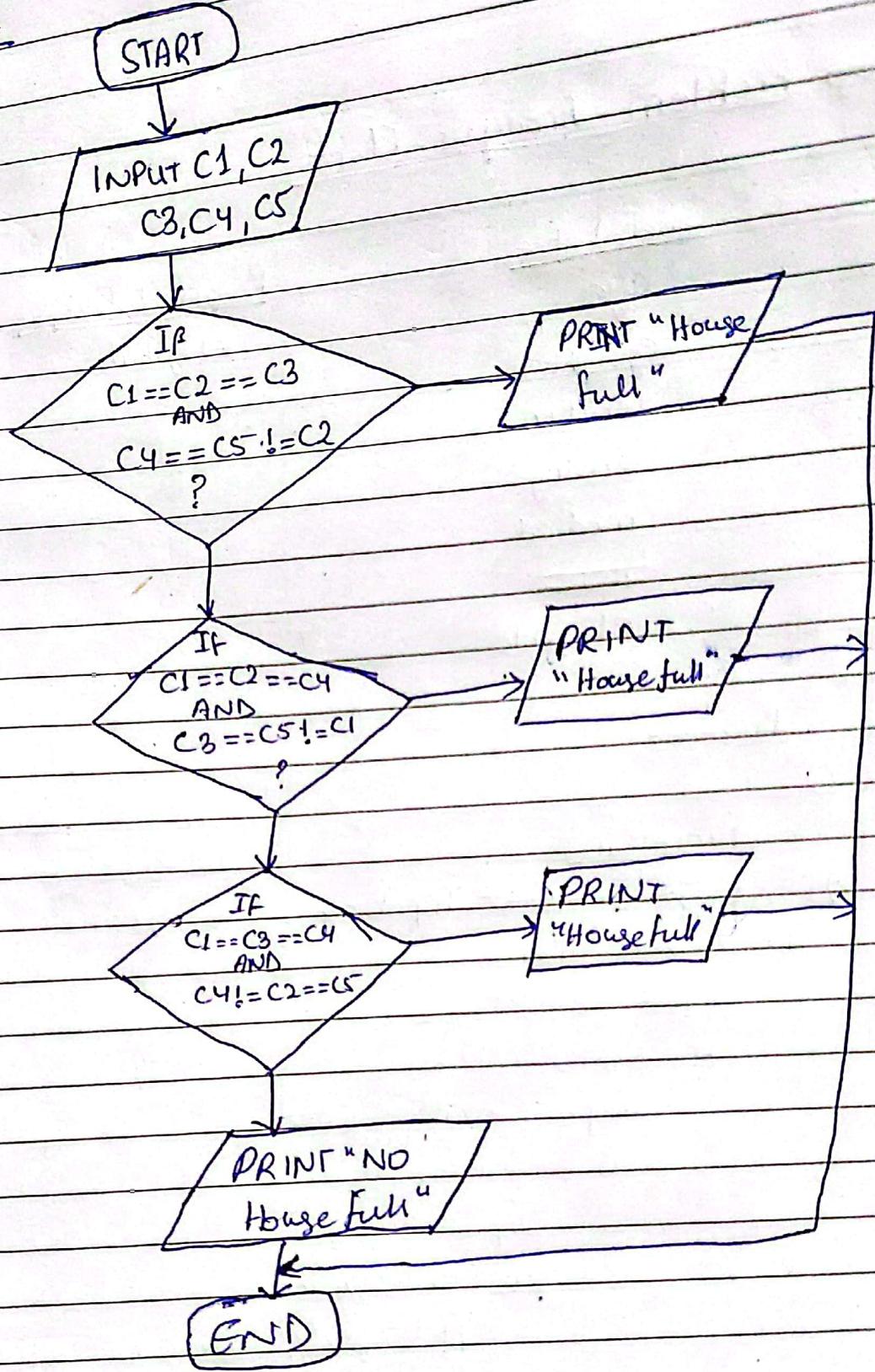
ENDIF

~~else~~ ELSE IF (C₃ == C₅) THEN

AND ($C_3 \neq C_2$) Dated:

```
IF ( $C_2 == C_4$ ) THEN  
    PRINT "Housefull"  
ENDIF  
ENDIF  
ELSEIF ( $C_1 == C_4$ ) THEN  
    IF ( $C_2 == C_4$ ) THEN  
        IF ( $C_3 == C_5$ ) AND ( $C_3 \neq C_2$ ) THEN  
            PRINT "Housefull"  
        ENDIF  
    ELSEIF ( $C_4 == C_5$ ) THEN  
        IF ( $C_2 == C_3$ ) THEN  
            PRINT "Housefull"  
        ENDIF  
    ENDIF  
    ELSEIF ( $C_1 == C_5$ ) AND ( $C_2 == C_3 == C_4$ ) THEN  
        PRINT "Housefull"  
    ELSE  
        PRINT "No full House"  
    ENDIF  
ENDIF  
IF ( $C_2 == C_3$ ) AND ( $C_3 == C_4$ ) AND ( $C_5 == C_1$ ) THEN  
    PRINT "Full house"  
ELSEIF ( $C_2 == C_4$ ) AND ( $C_4 == C_5$ ) AND ( $C_1 == C_3$ ) THEN  
    PRINT "Full house"  
ELSEIF ( $C_2 == C_5$ ) AND ( $C_1 == C_3 == C_4$ ) THEN  
    PRINT "Full house"  
ELSE  
    PRINT "No full House"  
ENDIF  
IF ( $C_4 == C_5$ ) AND ( $C_3 == C_2 == C_1$ ) THEN  
    PRINT "Full house"  
ELSE  
    PRINT "No full house"  
ENDIF.
```

Flowchart



Answer Q6

f) $i=7, j=5, k=3$

a) $i=3, j=5, k=7$

$7 < 5 \rightarrow \text{false}$

$3 < 5$

$5 < 7$

$i=5$

Screen:- 5, 5, 7

$j=3$

$3 > 3 \rightarrow \text{false}$

$i=3$

Screen: 3, 3, 3

b) $i=3, j=7, k=5$

$3 < 7$

$7 < 5 \rightarrow \text{false}$

Screen:- 3, 7, 5

c) $i=5, j=3, k=7$

$5 < 3 \rightarrow \text{false.}$

$j=7$

$i=7$

Screen: 7, 7, 7

d) $i=5, j=7, k=3$

$5 < 7$

$7 < 3 \rightarrow \text{false.}$

Screen:- 5, 7, 3

e) $i=7, j=3, k=5$

$7 < 3 \rightarrow \text{false.}$

$j=5$

$i=5$

Screen: 5, 5, 5