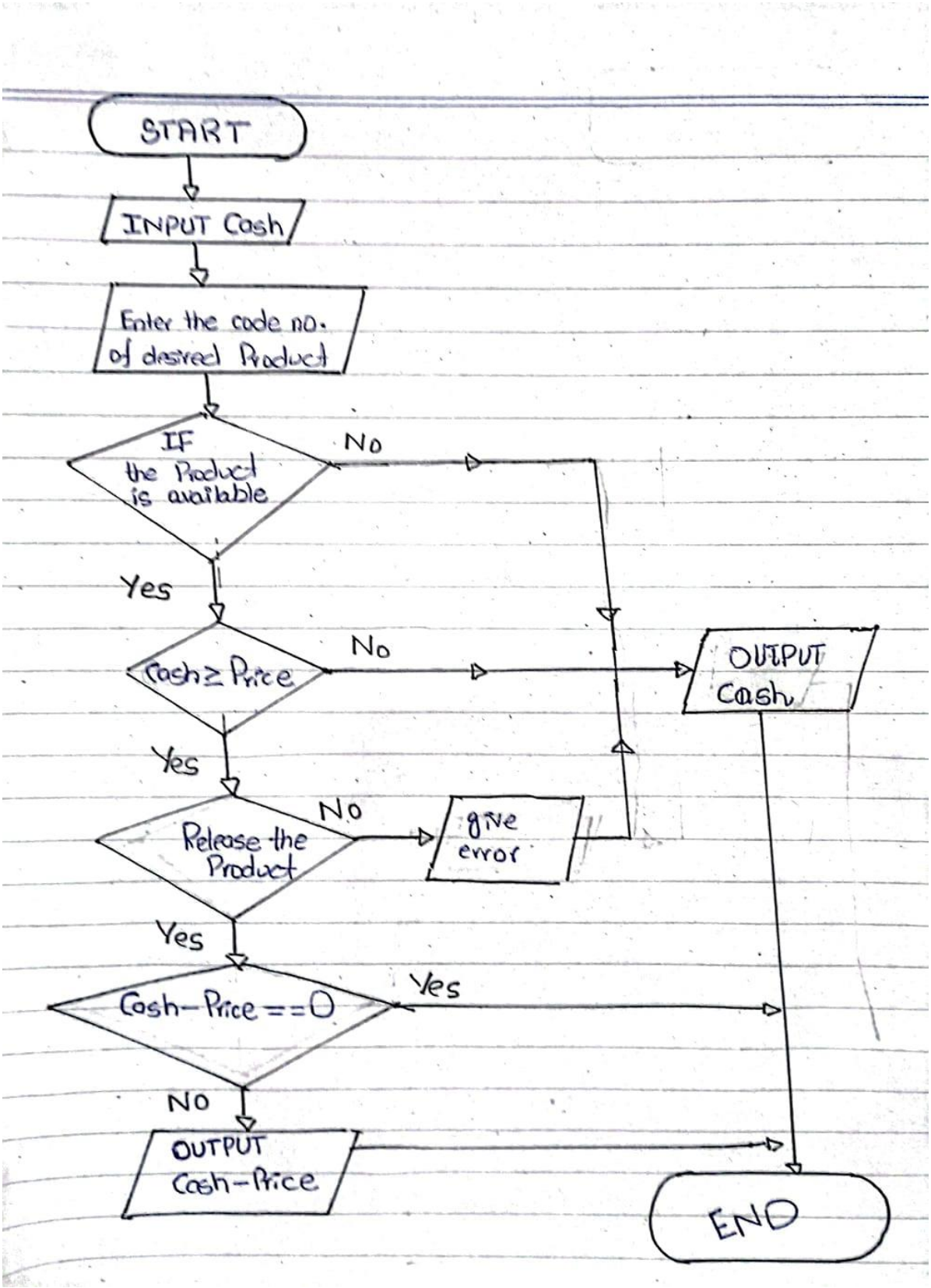
Flowchart Problem

- Imagine you are automating the process of a vending machine. Create a flowchart that includes decision points for user input, selecting products, accepting payment, and dispensing the correct item. Include error-handling for invalid



Pseudo Code Problems

- Write pseudocode to find the smallest number among three given variables. Implement a decision-making structure to compare the variables.

1. START

2. INPUT a
3. INPUT b
4. INPUT c

5. IF a<b AND b<c
   PRINT “a is the smallest number among the other three”
6. ELSEIF b<a AND b<c
   PRINT” b is the smallest number among the other three”
7. ELSE
   PRINT” c is the smallest number among the other three”

8. END

- Develop pseudocode for a basic calculator that performs multiplication and division. The pseudocode should prompt the user for two numbers and an operator, then display the result of the operation.

1. START

2. INPUT a (Numerator)
3. INPUT b (Denominator)
4. INPUT operator (/ or *)

5. IF operator is /
   IF b is 0
   PRINT “Undefined”
   ELSE
   SET div=a/b
   OUTPUT div
6. ELSEIF
   SET prod=a*b
   OUTPUT prod
7. ELSE
   PRINT “Enter a valid operator”

8. END

Algorithm

- Write an algorithm to determine whether a number is a prime number. The algorithm should iterate through possible divisors and determine if the number has any divisors other than 1 and itself.

1. Ask the user to enter **num**
2. Check if num is 0 or 1, then it is not prime
3. Else, run a loop from 2 to num/2 and store it in "x"
4. Check IF num%x==0,
   then it is not prime
   Else
   It is a prime number

- Create an algorithm that asks the user for a day number (1-365) and outputs the corresponding day of the week, assuming that January 1st is a Monday.

1. User enters day number (1-365) as "x"
2. Check IF x%7==0, then the day is Sunday
3. ELSEIF x%7==1, then day is Monday
4. ELSEIF x%7==2, then day is Tuesday
5. ELSEIF x%7==3, then the day is Wednesday
6. ELSEIF x%7==4, then the day is Thursday
7. ELSEIF x%7==5, then the day is Friday
8. ELSE, the day is Saturday