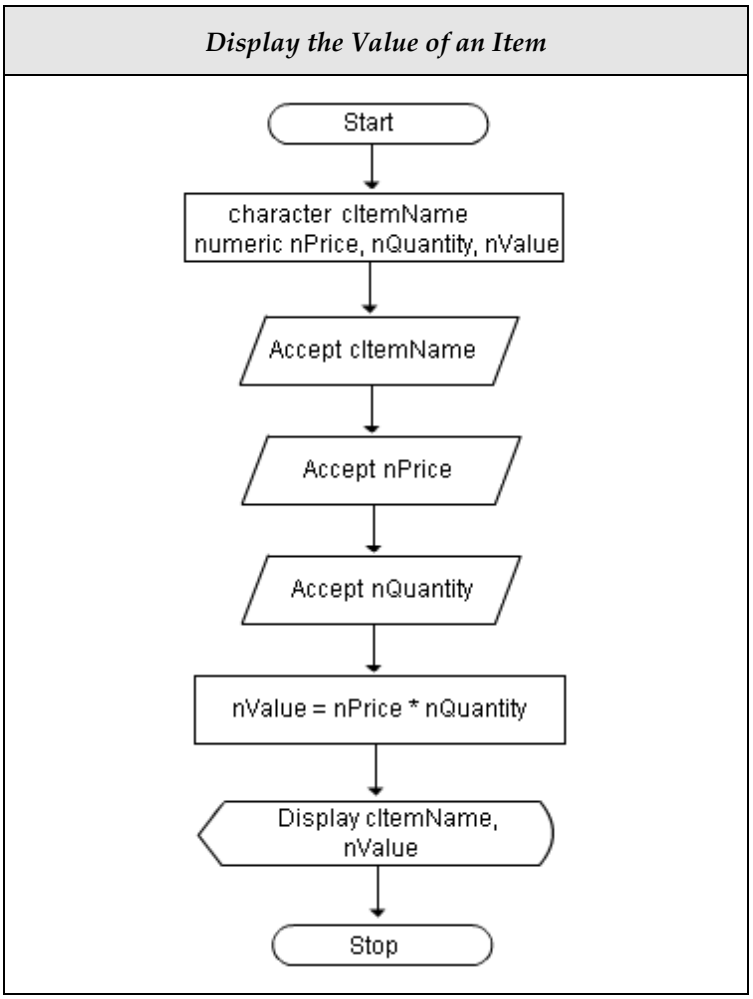
Draw a flowchart to accept item name, price, and quantity. You need to calculate value as the product of price and quantity, and display the calculated value and the item name using variable Solution:



2.P.1

a) OK

b) REJECT

c) GOOD

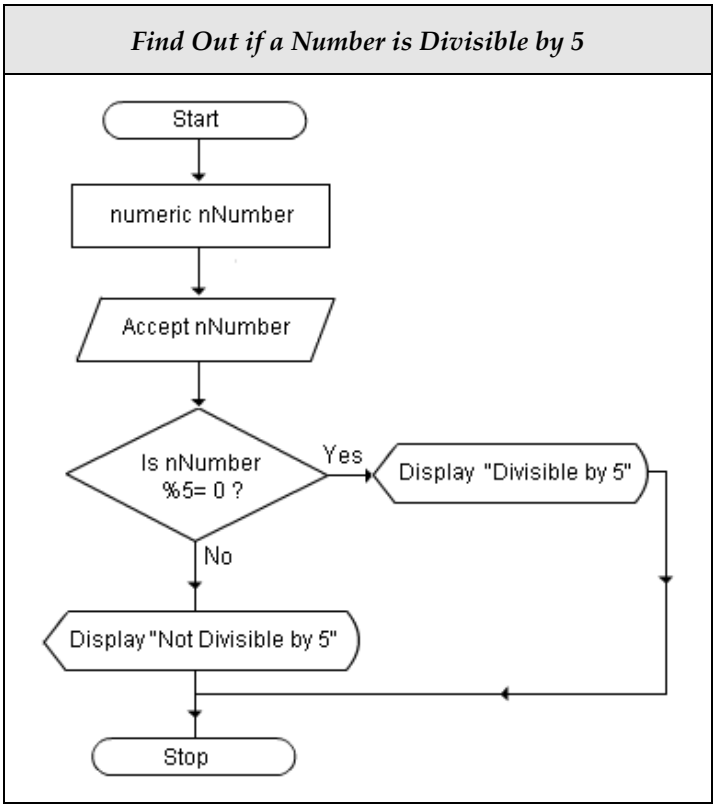
2.P.2

a) GOOD will be printed, since nX>nY and nX>100.

b) Nothing will be printed (even though nX is greater than nY, it is still less than 100).

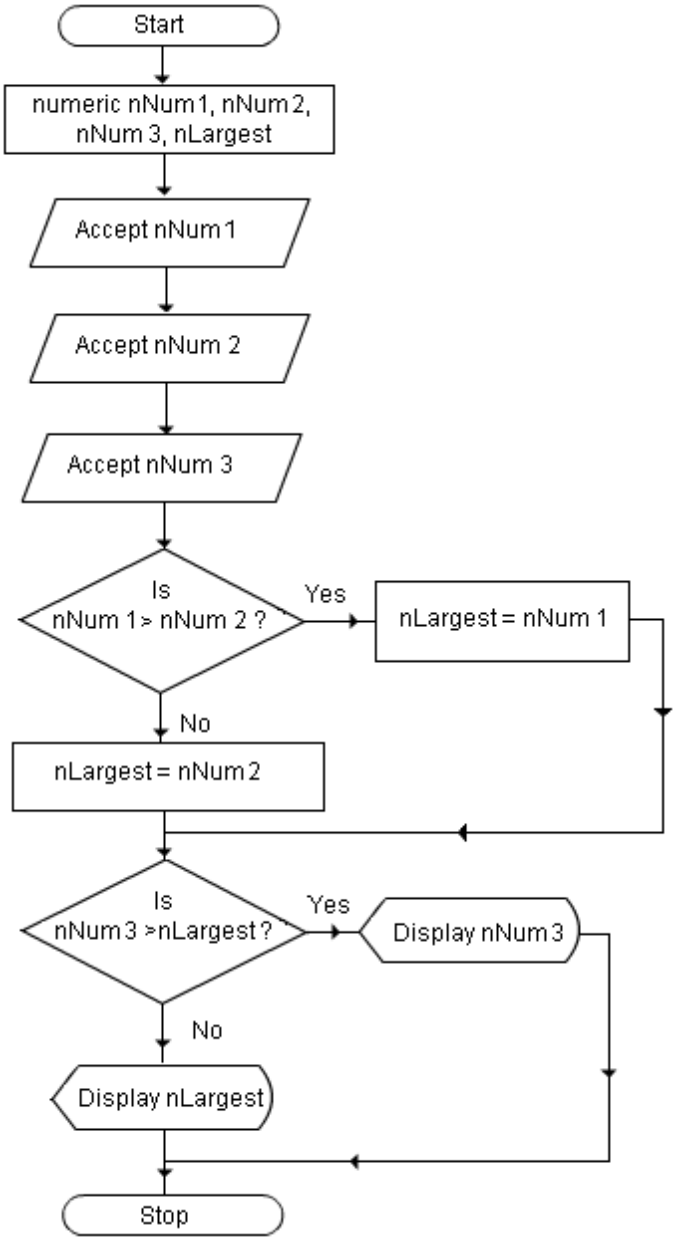
c) Nothing will be printed (even though nY is greater than nX, it is still less than 100).

2.P.3



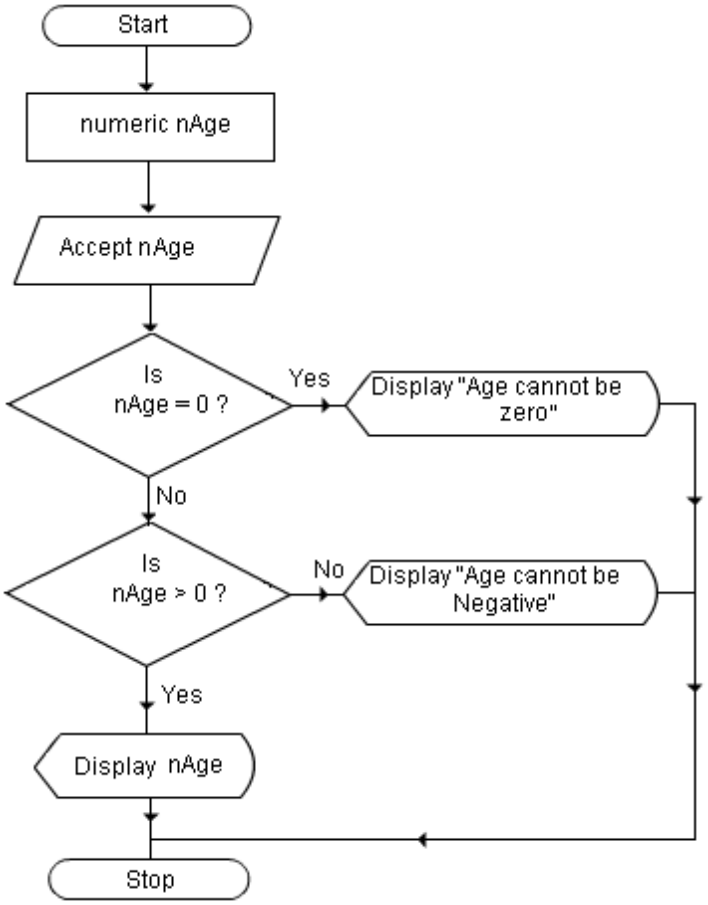
2.P.4

Display the Largest of the Three Numbers



2.P.5

Check if the Age is Negative



Lesson Three

Experiences

You may need to spend time on explaining iteration as some students may find it difficult to grasp. You may need to spend time on explaining the concept of modules or procedures. You will also need to explain to the students the use of the symbol used for depicting procedures in flowcharts, since this is the first time they will be using this symbol.

Examples and Analogies

Since 'procedures' is a new concept, you will need to give some simple examples to understand this concept. I often use this example. I have a dog at home. Every morning the first thing I do is call out to the dog and ask it to fetch me the newspaper. So fetching the morning newspaper is a procedure that I can call everyday.

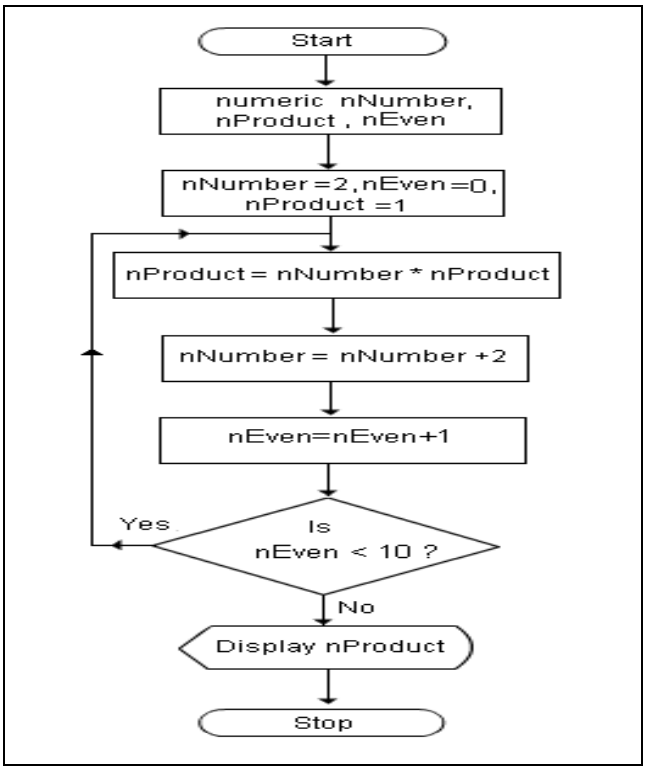
Additional Inputs

After the completion of an example, you should take the test case values and do a step by step dry run, so that the students are familiar with the dry run process and are clear on how to check the flow of control.

Solutions:

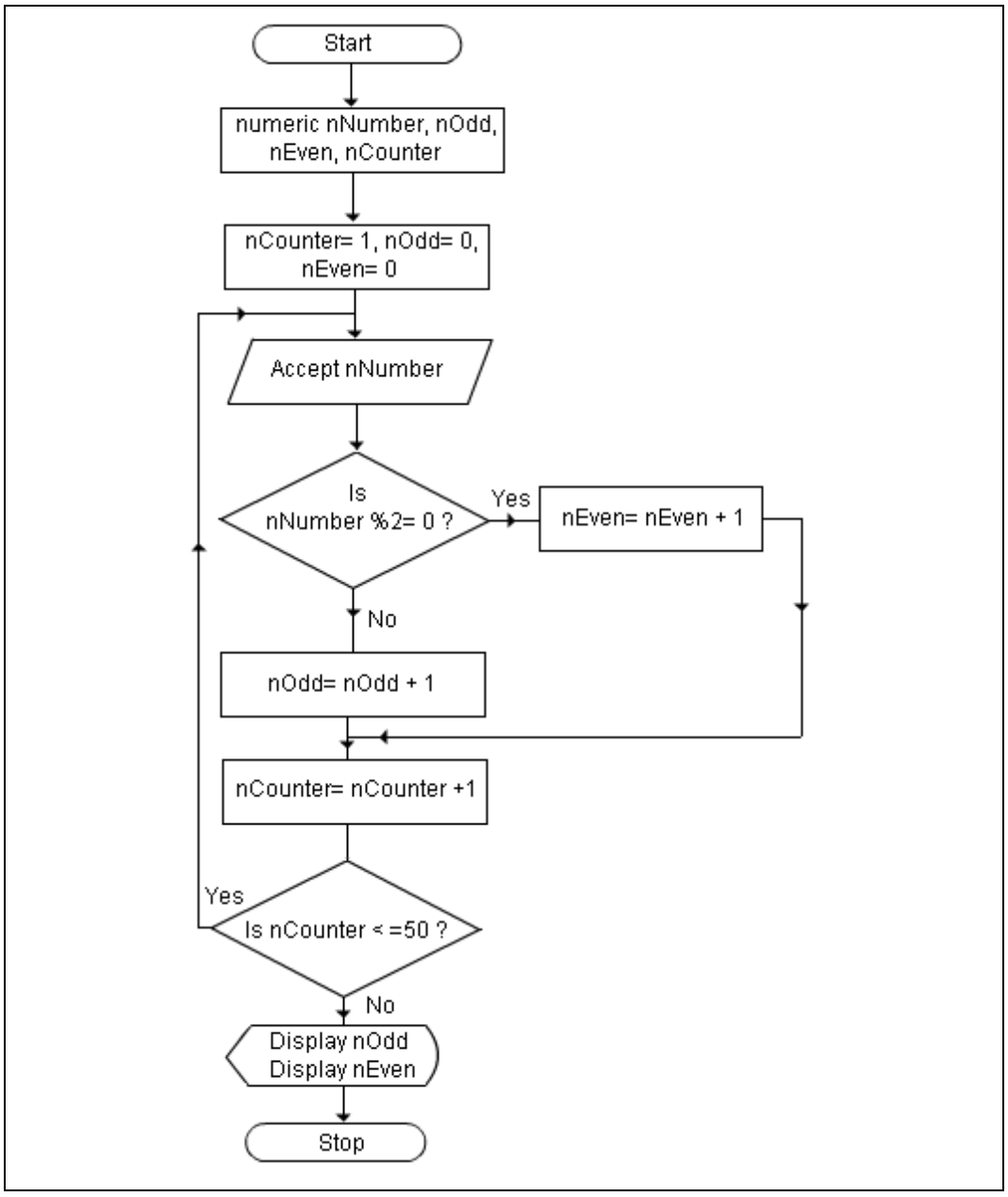
3.P.1

Display the Product of Ten Even Numbers



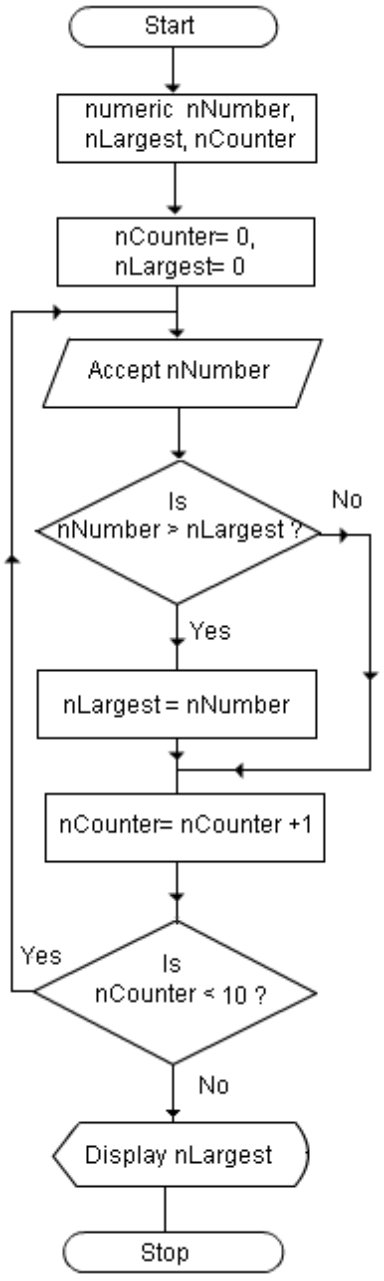
3.P.2

Count the Number of Odd and Even Numbers


Start
numeric nNumber, nOdd, nEven, nCounter
nCounter= 1, nOdd= 0, nEven= 0
Accept nNumber
Is nNumber %2= 0 ?
Yes
nEven= nEven + 1
No
nOdd= nOdd + 1
nCounter= nCounter +1
Yes
Is nCounter < =50 ?
No
Display nOdd
Display nEven
Stop

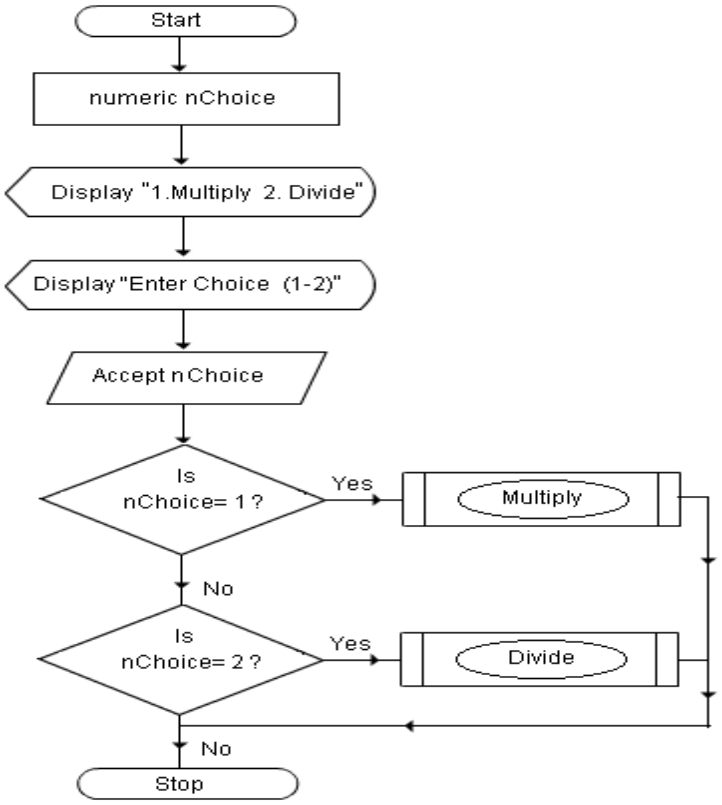
3.P.3

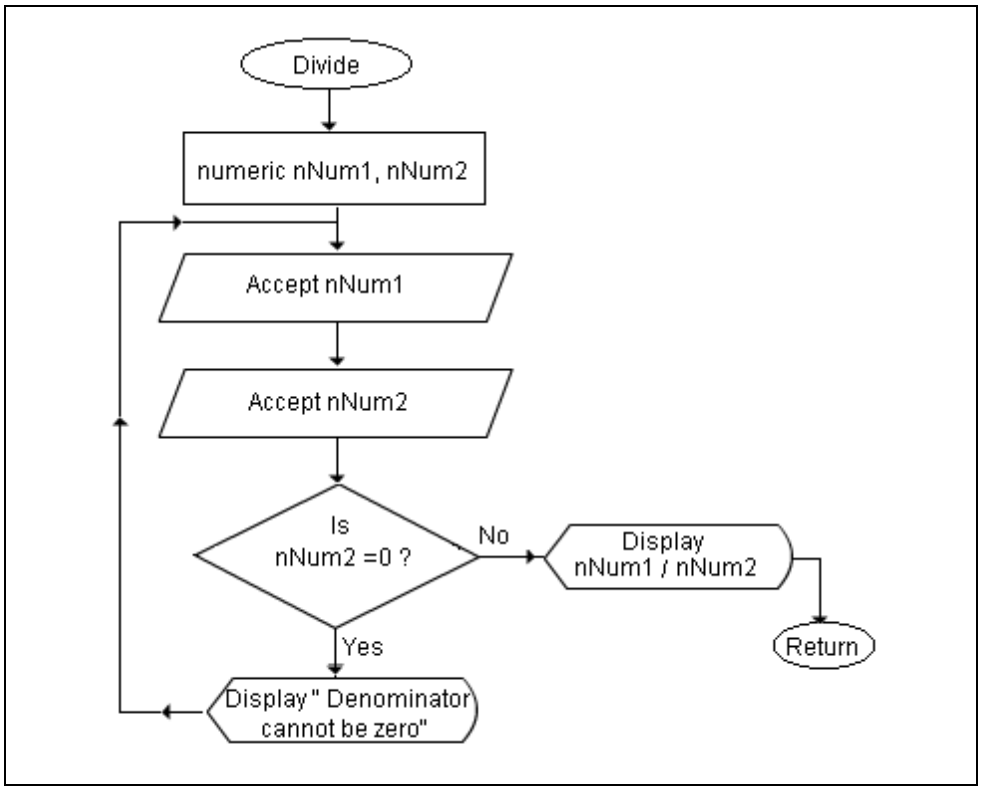
Display the Highest of any Ten Numbers

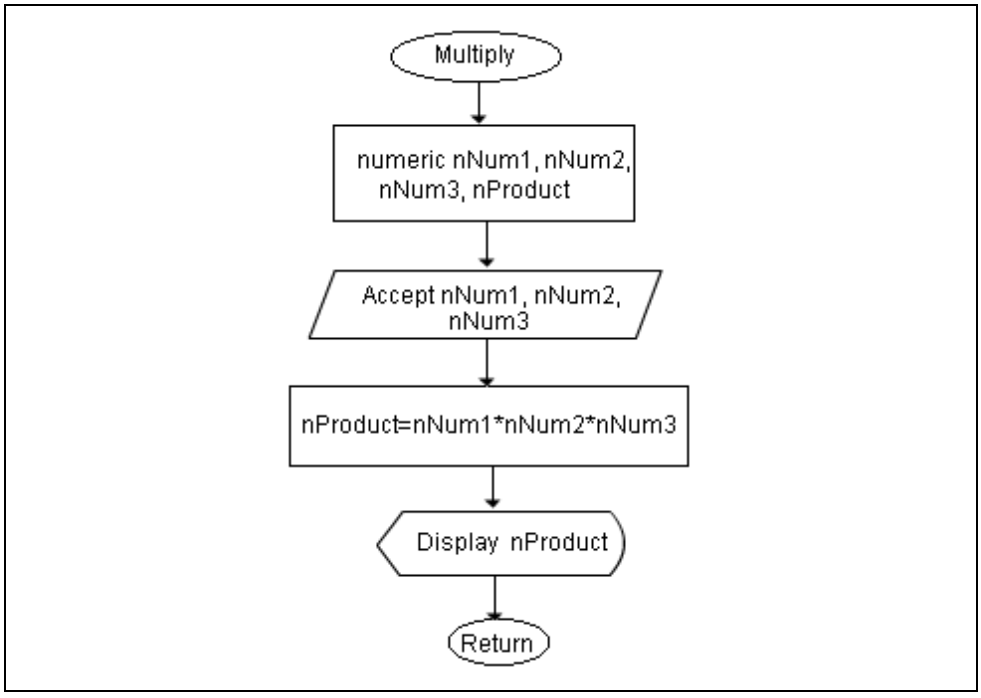


3.P.4

Modular Programming




Divide
numeric nNum1, nNum2
Accept nNum1
Accept nNum2
Is
nNum2 =0 ?
No
Display
nNum1 / nNum2
Return
Yes
Display " Denominator
cannot be zero"


Multiply
numeric nNum1, nNum2,
nNum3, nProduct
Accept nNum1, nNum2,
nNum3
nProduct=nNum1*nNum2*nNum3
Display nProduct
Return

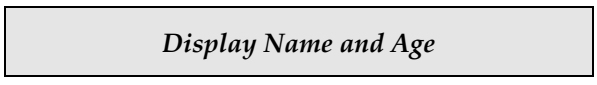
3.P.5

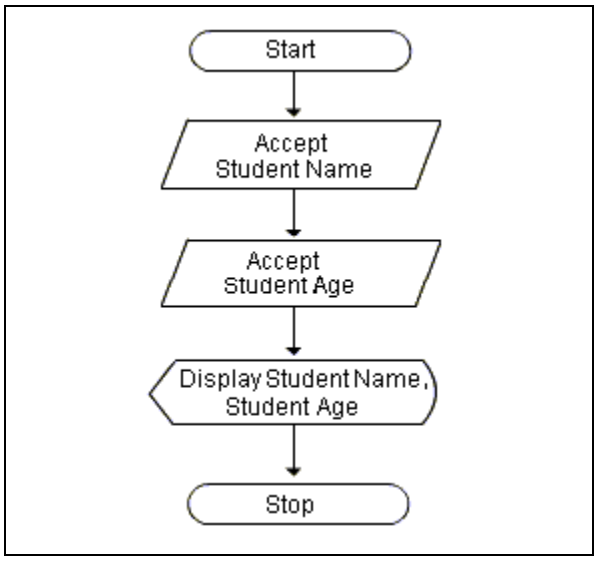
The names will be displayed infinite number of times, as the value of nCounter does not change. The value of nCounter will remain 0 and the condition will never become false. So the loop will never terminate. This is an infinite loop.

Lesson One

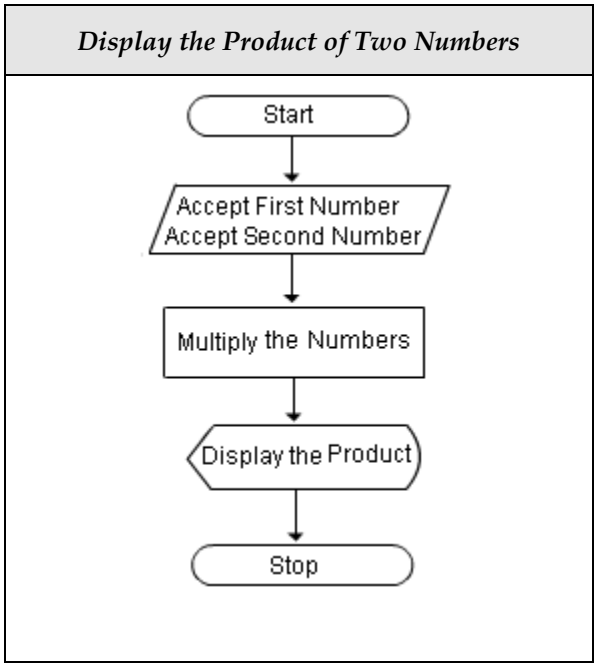
Solutions:

1. **Draw a flow chart to prepare tea.**
2. **Draw a flow chart to accept two number and find sum of them.**
3.




Start
Accept
Student Name
Accept
Student Age
Display Student Name,
Student Age
Stop

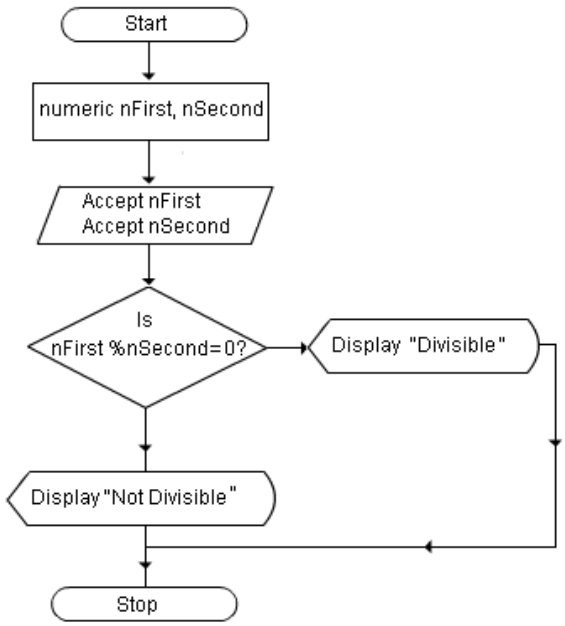
2.


Display the Product of Two Numbers
Start
Accept First Number
Accept Second Number
Multiply the Numbers
Display the Product
Stop

Solutions:

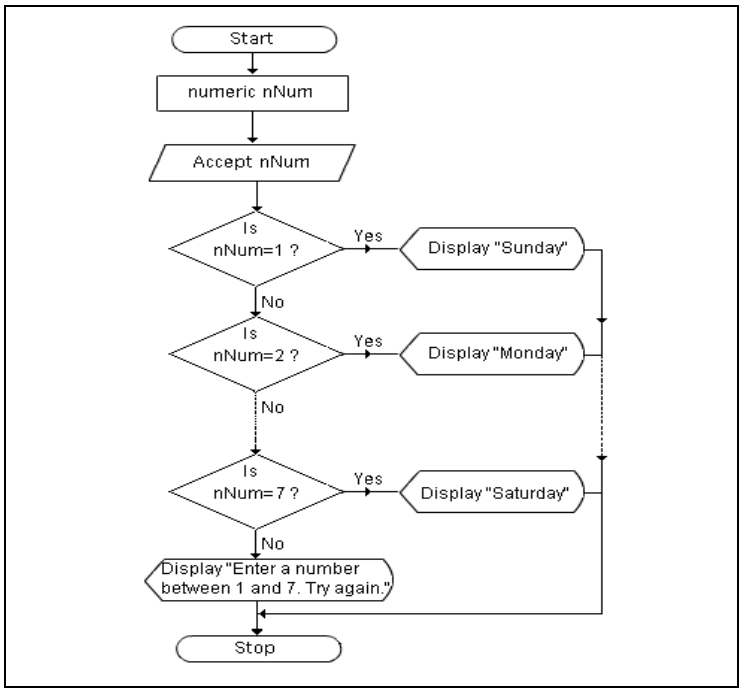
1. **Draw a flow chart to accept ten numbers and find greatest among them.**
2.

Check if First Number is Divisible by the Second

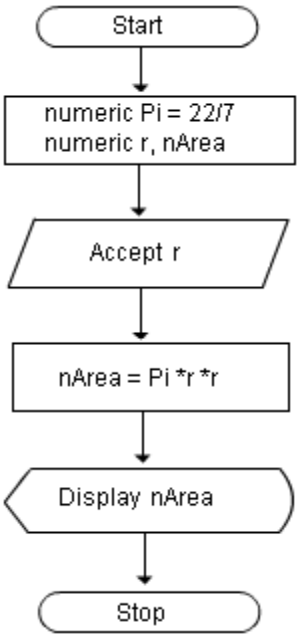


3.

Display the Day of the Week

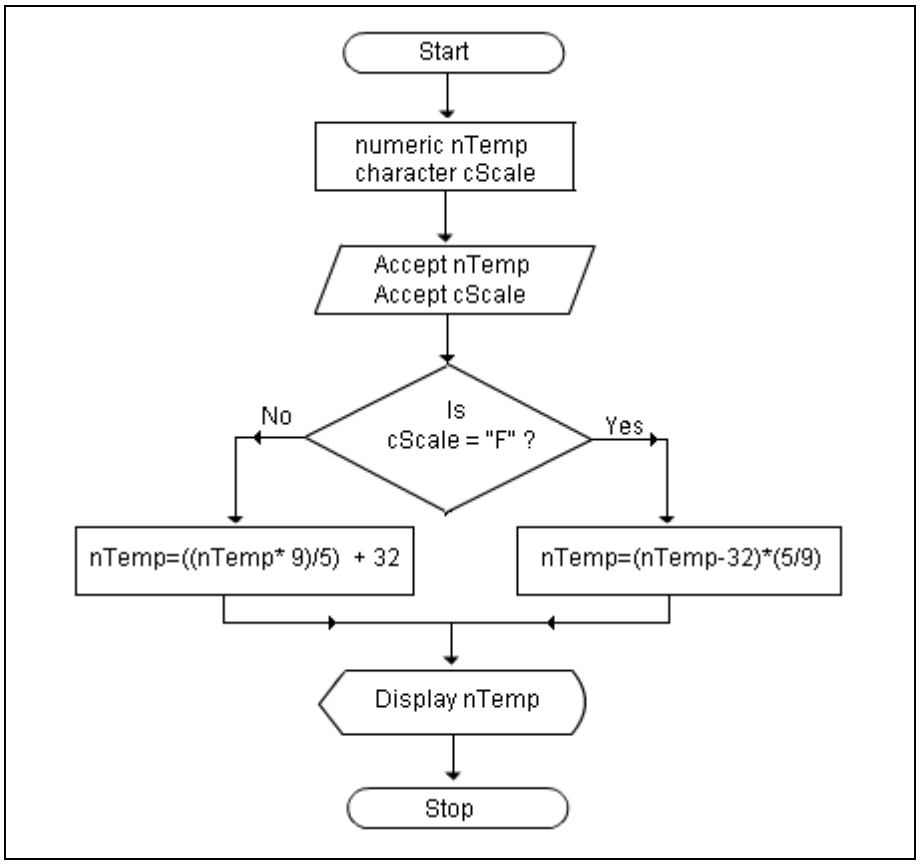


4.

Calculate the Area


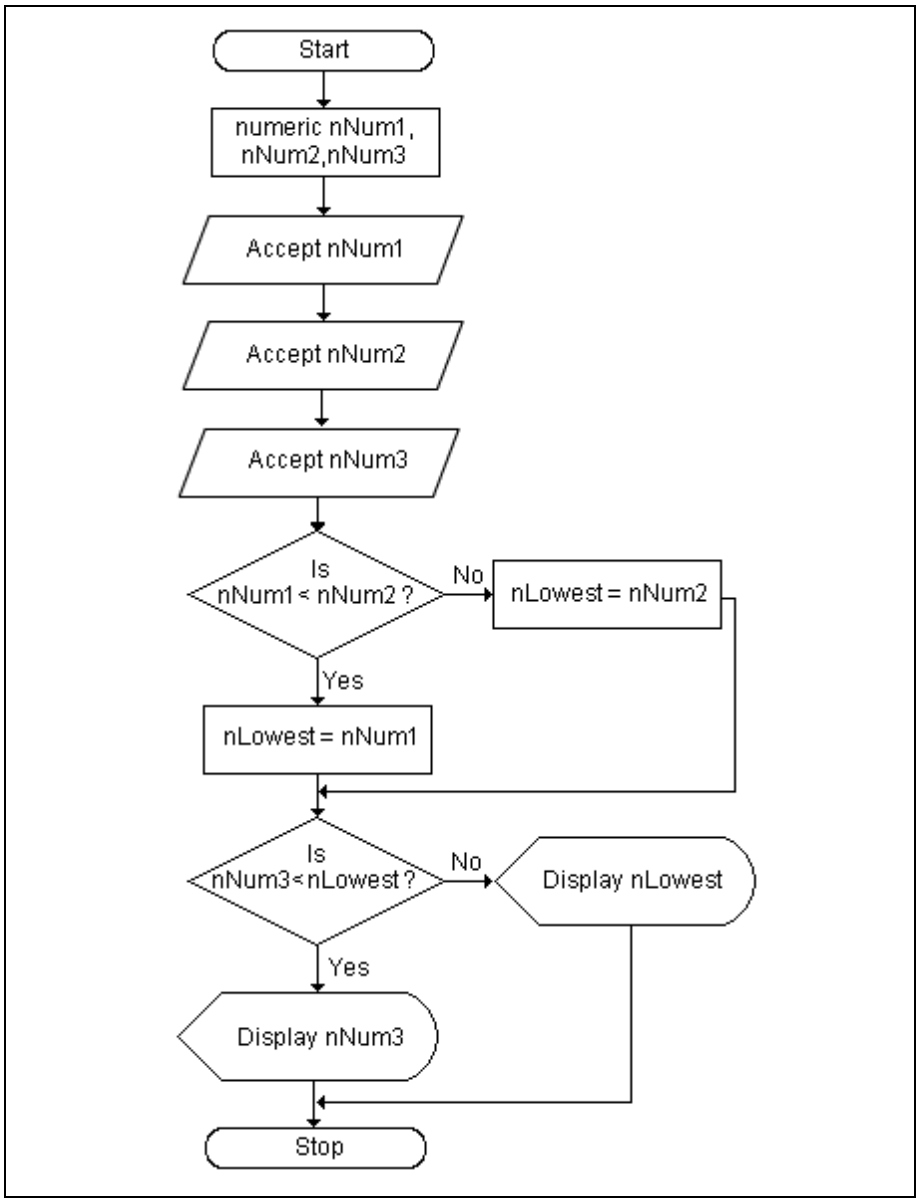
5.

Convert the Temperature from Fahrenheit to Celsius



6.

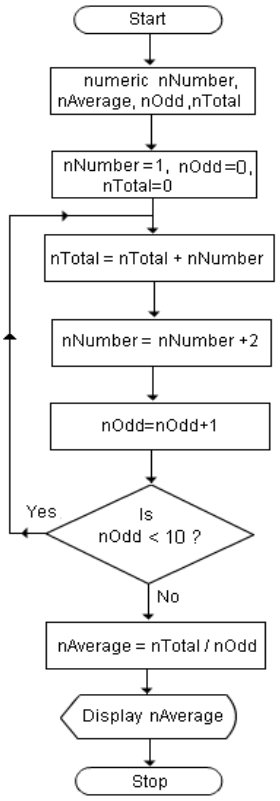
Display the Lowest of the Three Numbers


Start
numeric nNum1, nNum2,nNum3
Accept nNum1
Accept nNum2
Accept nNum3
Is nNum1 < nNum2 ?
No
nLowest = nNum2
Yes
nLowest = nNum1
Is nNum3 < nLowest ?
No
Display nLowest
Yes
Display nNum3
Stop

Solutions:

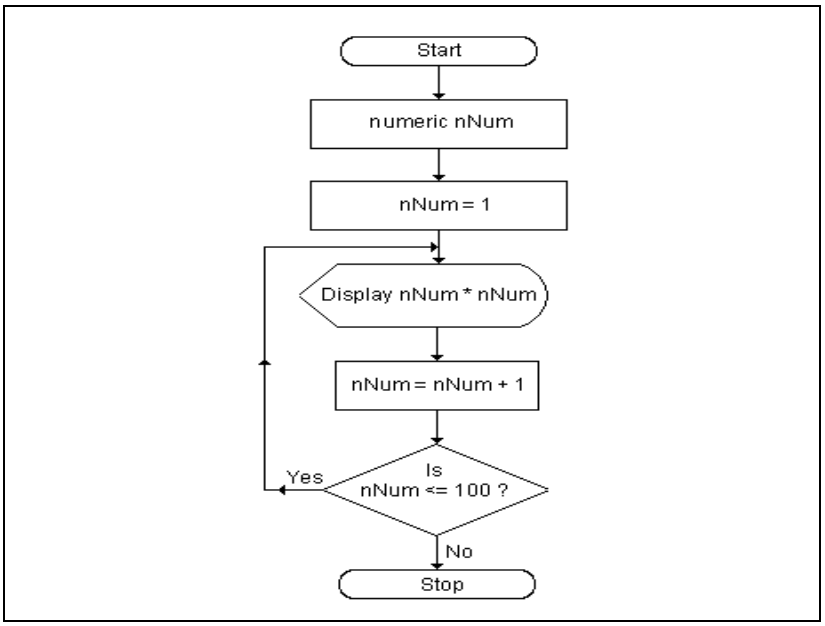
1.

Display the Average of First Ten Odd Numbers



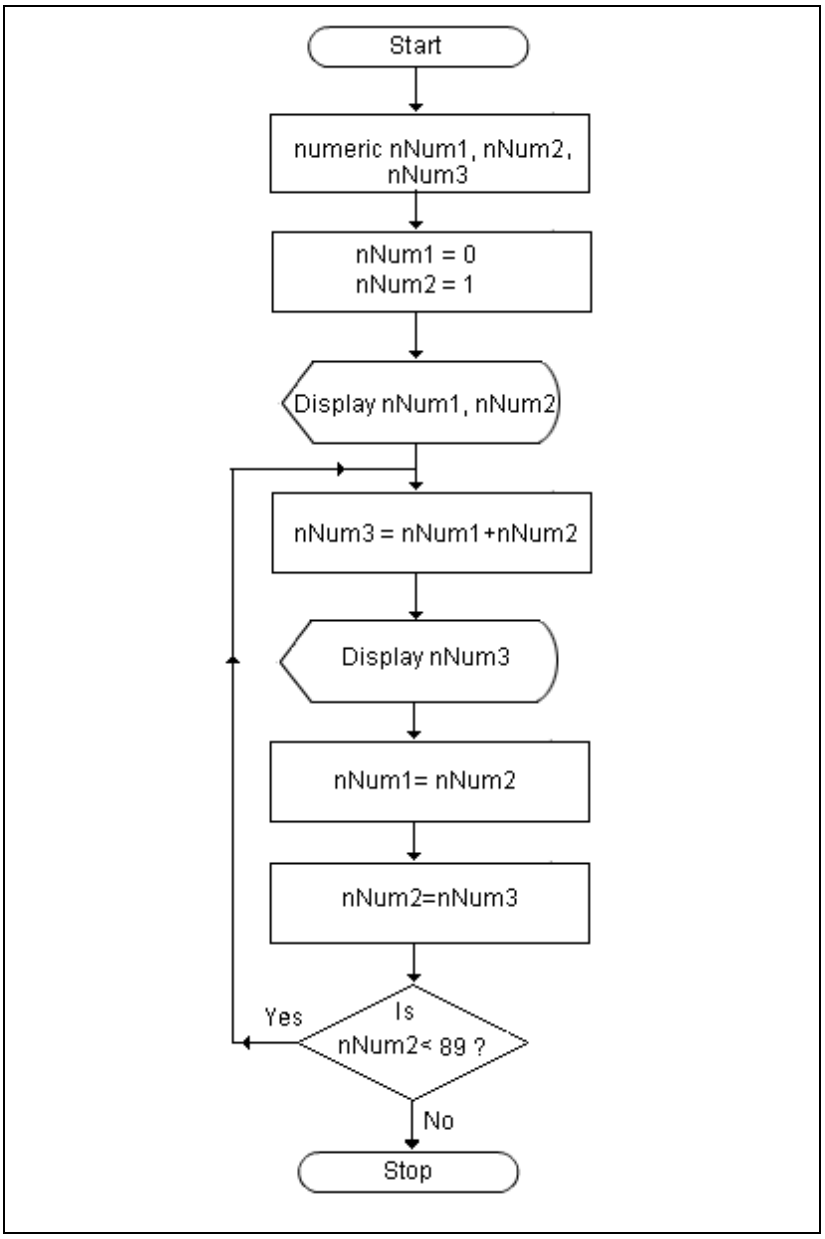
2.

Display the Square of the First 100 Natural Numbers



3.

Display Fibonacci Series


Start
numeric nNum1, nNum2, nNum3
nNum1 = 0
nNum2 = 1
Display nNum1, nNum2
nNum3 = nNum1+nNum2
Display nNum3
nNum1= nNum2
nNum2=nNum3
Is
nNum2< 89 ?
Yes
No
Stop

4.

Display Total Number of Calls