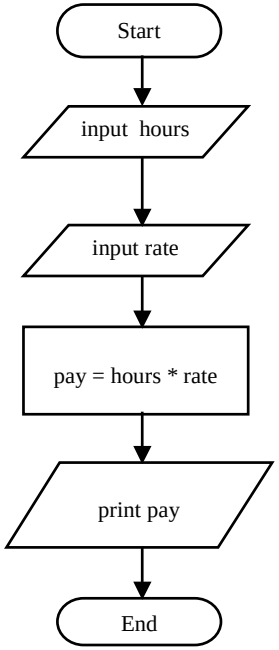
Introductory Examples of Flowcharts and Pseudocode

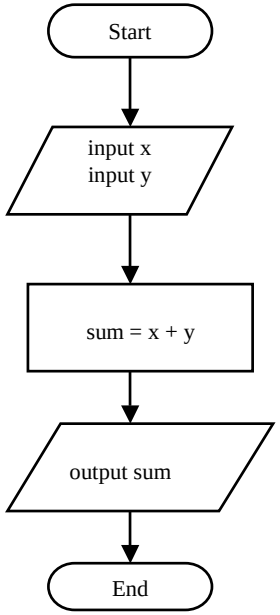
Chapter 3

Calculate Pay - sequence



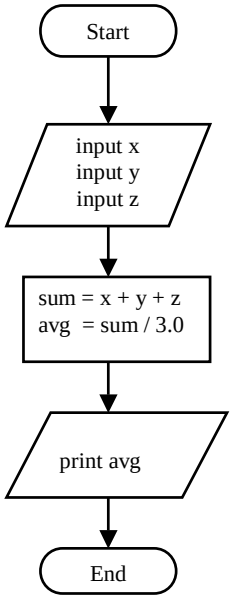

```
Begin
    input hours
    input rate
    pay  =  hours * rate
    print pay
End
```


Sum of 2 Numbers - sequence



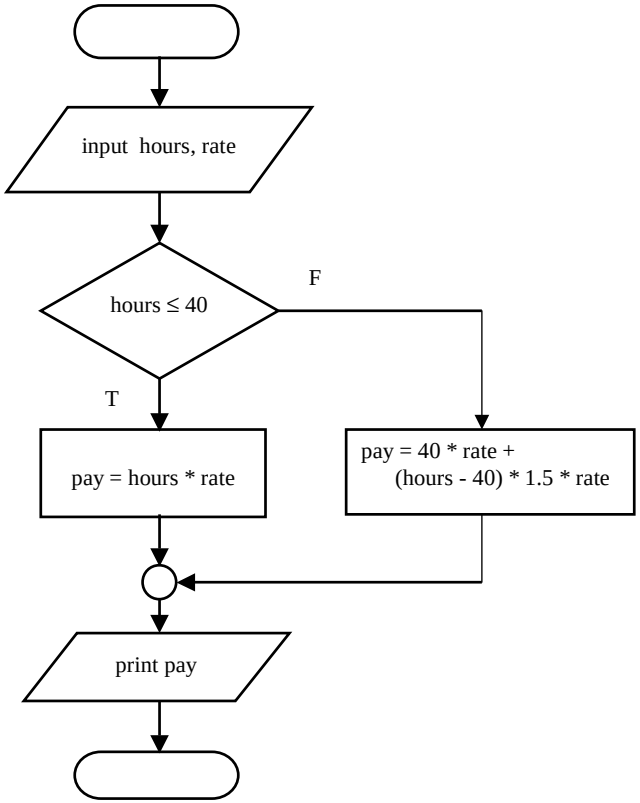

```
Begin
    input x, y
    sum  =  x + y
    print sum
End
```

Average of 3 Numbers - sequence



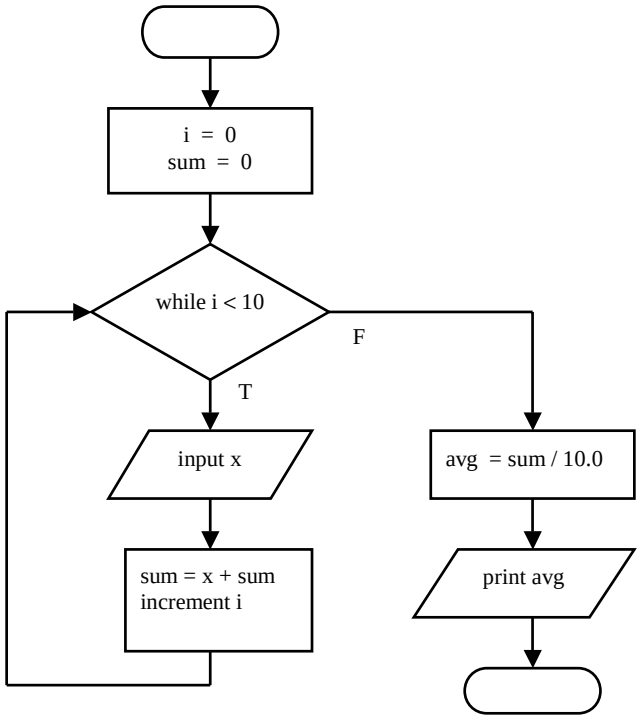

```
Begin
    input x
    input y
    input z
    sum  =  x + y + z
    avg  =  sum / 3.0
    print avg
End
```


Calculate Pay with Overtime - selection




```
Begin
    input hours, rate
    if hours ≤  40 then
        pay  =  hours * rate
    else
        pay  =  40 * rate  +  (hours – 40) * rate * 1.5
    print pay
End
```

Average of 10 Numbers – iteration with a while loop

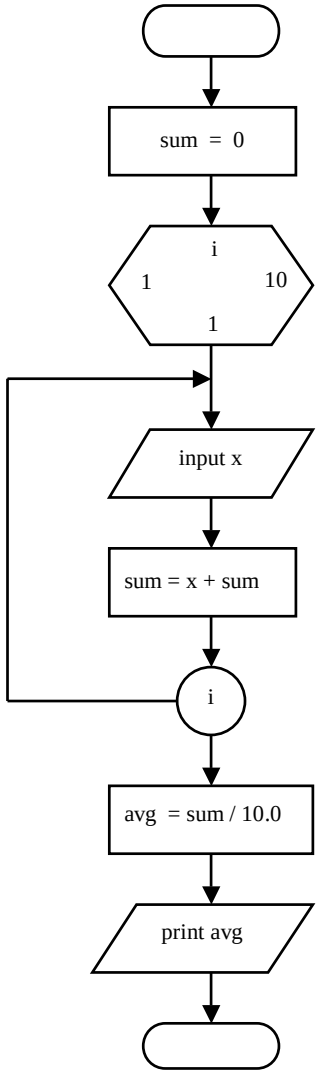



```
Begin
    i = 0
    sum = 0
    while i < 10
        input x
        sum = sum + x
        ++i
    avg = sum / 10.0
    print avg
End
```

```
Begin
        i = 0
        sum = 0
a:      if i ≥ 10 goto b
        input x
        sum = sum + x
        ++i
        goto a
b:      avg = sum / 10.0
        print avg
End
```

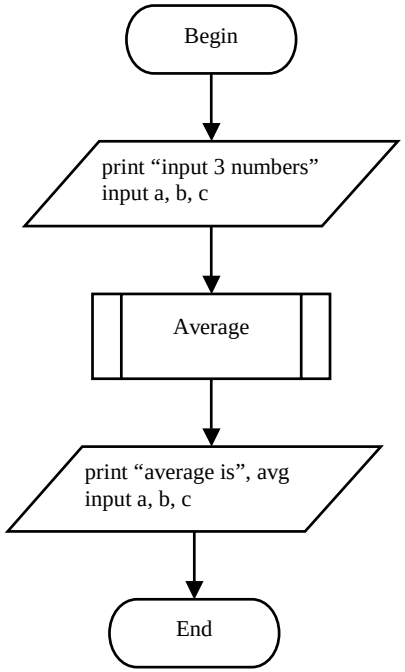
Comment Strictly speaking, the above flowchart corresponds more to the pseudocode on the right hand side. However, as you can see, 'gotos' make code less modular and more unreadable.

Average of 10 Numbers – iteration with a for loop

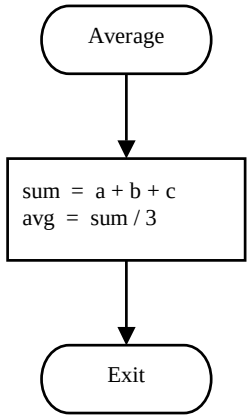



```
Begin
    sum = 0
    for i = 1 to 10
        input x
        sum = sum + x
    avg = sum / 10.0
    print avg
End
```

Flowchart for Function or Subroutine Module




```
Begin
    print “Input 3 numbers: ”
    input a, b, c
    avg  =  average(a, b, c)
    print “Average is  ”, avg
End
```




```
Begin Average(a, b, c)
    sum    =   a + b + c
    avg  =  sum / 3.0
    return avg
End
```