Import JJIO

Class Time

--- Name A Non A Mous
--- Does provide military time instants (not intervals)
--- Data attributes

Box hour ofType int is private -- 0 to 23 hours
Box min ofType int is private -- 0 to 59 minutes

Constructor Time (h,m) is public

Slot h ofType int
Slot m ofType int
-- Does set New time, hour and min
Set hour = h
Set min = m

EndConstructor Time

Routine setMins (mins) is public

Slot mins ofType int
-- Does set the minutes part
Set min = mins

EndRoutine setMins

Function isValid (none) ofType bool is public

Box result ofType bool
-- Does indicate if time is proper
If (hour >= 0) and (hour < 24) and (min >= 0) and (min < 60) then
Set result = true
Else
Set result = false
EndIf

EndFunction isValid

Routine show (none) is public

-- Does output military time
Output hour
Output ":" -- one possible alternate
If (min < 10) then
Output "0" -- single digit minute
EndIf
Output min

EndRoutine show

Function mpm (none) ofType int is public

Box result ofType int
-- Does return minutes past midnight
Set result = 60 * hour + min

EndFunction mpm

Routine incMins (mins) is public

Slot mins ofType int
Box total ofType int
-- Does increment time by given mins
Set total = 60 * hour + min + mins
If (total > 24 * 60) then
Set total = total - 24*60
EndIf
Set hour = total / 60
Set min = total % 60

EndRoutine incMins

Routine enterTime (none) is public

Box milTime ofType int
-- Enters military time as int
Output "Enter military time 
Input milTime
Valueln milTime
-- Check range 0 .. 2359
Set hour = milTime / 100
Set min = milTime % 100

EndRoutine enterTime

Routine test (none) is private

Boxes first, second ofClass Time
-- Does use the Time class
Start
New first ofClass Time with (12,45)
New second ofClass Time with (14,30)
Call first.enterTime
Call first.incMins with (15)
Call second.setMins with (45)
Output "The first time is 
Call first.show
Outputln " 
If first.isValid() and second.isValid() then
Call second.show
Outputln " 
Output " is " + IntToStr (second.mpm() )
Outputln " minutes past midnight"
Output "The time difference is 
Output second.mpm() - first.mpm()
Outputln " minutes."
EndIf

EndRoutine test

Function mpm (none) ofType int is public

Box result ofType int
-- Does return minutes past midnight
Set result = 60 * hour + min

EndFunction mpm

Enter military time 444
The first time is 4:59
14:45 is 885 minutes past midnight
The time difference is 586 minutes.