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' This is Exercise 5.1 Dimensioning variables and Math operators

'----- Parameter Values Header -----

' Drive: SC952

' Motor: R32H

' Performance Setting: Medium

' Inertia Ratio: 2

'----- params start -----

params

ARF0 = 150.000000

ARF1 = 750.000000

Comloff = 0.000000

ILmtMinus = 100.000000

ILmtPlus = 100.000000

ItThresh = 60.000000

Kip = 36.442473

Kpp = 15.000000

Kvi = 5.000000

Kvp = 0.365210

Polecount = 4

end params

'----- params end -----

'----- Define (dim) Global Variables -----

dim Value1 as integer

dim Value2 as float

'----- Main Program -----

main

cls

Value1 = 12 + 34

print "Value1 = "; Value1

print

Value2 = 12.34 * 56.78

print "Value2 = "; Value2

end main

'----- Subroutines and Functions -----

'----- Interrupt Routines -----

' This is Exercise 5.2 Using the Input and Print statements

'----- Parameter Values Header -----

' Drive: SC952
' Motor: R32H
' Performance Setting: Medium
' Inertia Ratio: 2

'----- params start -----

params

ARF0 = 150.000000
ARF1 = 750.000000
Comloff = 0.000000
ILmtMinus = 100.000000
ILmtPlus = 100.000000
IfThresh = 60.000000
Kip = 36.442473
Kpp = 15.000000
Kvi = 5.000000
Kvp = 0.365210
Polecount = 4

end params

'----- params end -----

'----- Define (dim) Global Variables -----

dim NumProduct, ConveyorSpeed as integer

'----- Main Program -----

main

cls

input"Enter the number of pieces",NumProduct

print

input"Enter the speed of the conveyor",ConveyorSpeed

print"The conveyor speed =";ConveyorSpeed

end main

'----- Subroutines and Functions -----

'----- Interrupt Routines -----

```

'----- Parameter Values Header -----
' Drive:      SC952
' Motor:      R32H
' Performance Setting: Medium
' Inertia Ratio:  2
'----- params start -----
params
  ARF0  = 150.000000
  ARF1  = 750.000000
  Comhoff = 0.000000
  ILmtMinus = 100.000000
  ILmtPlus = 100.000000
  ItThresh = 60.000000
  Kip     = 36.442473
  Kpp     = 15.000000
  Kvi     = 5.000000
  Kvp     = 0.365210
  Polecount = 4
end params
'----- params end -----

'----- Define (dim) Global Variables -----
dim NewSpeed as float
'----- Main Program -----
main
while 1
  NewSpeed = CalcSpeed(NewSpeed)
  If NewSpeed < 0 then
    dir = 1
  elseif NewSpeed >= 0 then
    dir = 0
  end if
  runspeed = abs(NewSpeed)
wend

end main

'----- Subroutines and Functions -----
Function CalcSpeed(x as integer) as float
  x = 200
  CalcSpeed = x * analogin
End function
'----- Interrupt Routines -----

```

'----- Parameter Values Header -----

' Drive: SC952
' Motor: R32H
' Performance Setting: Medium
' Inertia Ratio: 2

'----- params start -----

params

ARF0 = 150.000000
ARF1 = 750.000000
Comhoff = 0.000000
ILmtMinus = 100.000000
ILmtPlus = 100.000000
ItThresh = 60.000000
Kip = 36.442473
Kpp = 15.000000
Kvi = 5.000000
Kvp = 0.365210
Polecount = 4

end params

'----- params end -----

'----- Define (dim) Global Variables -----

alias StartButton = (Inp7 = 0)
alias StopButton = (Inp8 = 0)

'----- Main Program -----

main

cls

while 1

If startbutton then

print "Machine Starting"

elseif stopbutton then

print "Machine Stopping"

end if

wend

end main

'----- Subroutines and Functions -----

'----- Interrupt Routines -----

' This is the If..Then.. Else Exercise

'----- Parameter Values Header -----

' Drive: SC952

' Motor: R32H

' Performance Setting: Medium

' Inertia Ratio: 2

'----- params start -----

params

ARF0 = 150.000000

ARF1 = 750.000000

Commoft = 0.000000

ILmtMinus = 100.000000

ILmtPlus = 100.000000

ItThresh = 60.000000

Kip = 36.442473

Kpp = 15.000000

Kvi = 5.000000

Kvp = 0.365210

Polecount = 4

end params

'----- params end -----

'----- Define (dim) Global Variables -----

'----- Main Program -----

main

if inp1 = 0 then

if inp2 = 0 then

runspeed = 500

accelrate = 10000

decelrate = 10000

out1 = 1

out2 = 1

else

runspeed = 1500

accelrate = 30000

decelrate = 30000

out1 = 1

out2 = 0

end if

else

if inp2 = 0 then

runspeed = 1000

accelrate = 20000

decelrate = 20000

out1 = 0

out2 = 1

else

runspeed = 2000

accelrate = 40000

decelrate = 40000

out1 = 0

out2 = 0

end if

end if

end main

'----- Subroutines and Functions -----'

'----- Interrupt Routines -----'

'----- Parameter Values Header -----

' Drive: SC952
' Motor: R32H
' Performance Setting: Medium
' Inertia Ratio: 2

'----- params start -----

params
ARF0 = 150.000000
ARF1 = 750.000000
Comloff = 0.000000
ILmtMinus = 100.000000
ILmtPlus = 100.000000
ItThresh = 60.000000
Kip = 36.442473
Kpp = 15.000000
Kvi = 5.000000
Kvp = 0.365210
Polecount = 4

end params

'----- params end -----

'----- Define (dim) Global Variables -----

dim outnumber as integer

'----- Main Program -----

main

cls

while outputs band &h3f <> 0

input "please enter a number between 0 and 6", outnumber

select case outnumber

case 0

out0 = 0

case 1

out1 = 0

case 2

out2 = 0

case 3

out3 = 0

case 4

out4 = 0

case 5

out5 = 0

case 6

out6 = 0

end select

wend

end main

'----- Subroutines and Functions -----

'----- Interrupt Routines -----

' This is Exercise 7.1 Programming an Index move

'----- Parameter Values Header -----

' Drive: SC952
' Motor: R32H
' Performance Setting: Medium
' Inertia Ratio: 2

'----- params start -----

```
params
ARF0 = 150.000000
ARF1 = 750.000000
Comloff = 0.000000
ILmtMinus = 100.000000
ILmtPlus = 100.000000
IfThresh = 60.000000
Kip = 36.442473
Kpp = 15.000000
Kvi = 5.000000
Kvp = 0.365210
Polecount = 4
end params
```

'----- params end -----

'----- Define (dim) Global Variables -----

'----- Main Program -----

```
main
cls
accelrate = 4167
decelrate = 4167
runspeed = 500
indexdist = 8192

inposlimit = 5
enable = 1
goincr
while inposition = 0
wend
print "Move complete"

end main
```

'----- Subroutines and Functions -----

'----- Interrupt Routines -----

' This is Exercise 7.2 Programming a series of Index moves

'----- Parameter Values Header -----

' Drive: SC952
' Motor: R32H
' Performance Setting: Medium
' Inertia Ratio: 2

'----- params start -----

```
params
  ARF0 = 150.000000
  ARF1 = 750.000000
  Comloff = 0.000000
  ILmtMinus = 100.000000
  ILmtPlus = 100.000000
  IfThresh = 60.000000
  Kip = 36.442473
  Kpp = 15.000000
  Kvi = 5.000000
  Kvp = 0.365210
  Polecount = 4
```

end params

'----- params end -----

'----- Define (dim) Global Variables -----

dim counter as integer

'----- Main Program -----

```
main
cls
accelrate = 4167
decelrate = 4167
runspeed = 500
indexdist = 40960

inposlimit = 5
enable = 1
counter = 0
for counter = 1 to 5
  goincr
  while inposition = 0
  wend
  pause(1)
next counter
```

end main

'----- Subroutines and Functions -----

'----- Interrupt Routines -----

' This is Exercise 7.3 Programming an Absolute move

'----- Parameter Values Header -----

' Drive: SC952
' Motor: R32H
' Performance Setting: Medium
' Inertia Ratio: 2

'----- params start -----

params
ARF0 = 150.000000
ARF1 = 750.000000
Commoft = 0.000000
ILmtMinus = 100.000000
ILmtPlus = 100.000000
IfThresh = 60.000000
Kip = 36.442473
Kpp = 15.000000
Kvi = 5.000000
Kvp = 0.365210
Polecount = 4

end params

'----- params end -----

'----- Define (dim) Global Variables -----

'----- Main Program -----

main
accelrate = 5000
decelrate = accelrate
runspeed = 200
enable = 1
poscommand = 0

targetpos = 4096
goabs
while moving = 1
wend
pause(1)

targetpos = 8192
goabs
while moving = 1
wend
pause(1)

targetpos = 4.5*4096
goabs
while moving = 1
wend
pause(1)

targetpos = 4096
goabs
while moving = 1
wend

pause(1)

end main

'----- Subroutines and Functions -----'

'----- Interrupt Routines -----'

' This is Exercise 7.4 Programming a Home move

'----- Parameter Values Header -----

' Drive: SC952
' Motor: R32H
' Performance Setting: Medium
' Inertia Ratio: 2

'----- params start -----

```
params
  ARF0 = 150.000000
  ARF1 = 750.000000
  Commoff = 0.000000
  ILmtMinus = 100.000000
  ILmtPlus = 100.000000
  IfThresh = 60.000000
  Kip = 36.442473
  Kpp = 15.000000
  Kvi = 5.000000
  Kvp = 0.365210
  Polecount = 4
```

end params

'----- params end -----

'----- Define (dim) Global Variables -----

```
dim SearchSpeed, BackSpeed as float
Dim SearchDir as integer
```

'----- Main Program -----

main

cls

accelrate = 1000

decelrate = accelrate

SearchSpeed = 200

BackSpeed = 20

SearchDir = 1

runspeed = SearchSpeed

dir = SearchDir

enable = 1

when inp7 = 1, continue

govel

runspeed = BackSpeed

If SearchDir = 1 then dir = 0 else dir = 1

govel

runspeed = 0

when inp7 = 1, continue

updmove

while moving = 1

wend

poscommand = poscommand - whenposcommand

runspeed = SearchSpeed

gohome

while moving = 1

```
wend  
print "System Homed!"
```

```
end main
```

```
'----- Subroutines and Functions -----
```

```
'----- Interrupt Routines -----
```

' This is Exercise 7.5 Using discrete inputs to control motion

'----- Parameter Values Header -----

' Drive: SC952

' Motor: R32H

' Performance Setting: Medium

' Inertia Ratio: 2

'----- params start -----

params

ARF0 = 150.000000

ARF1 = 750.000000

Commoff = 0.000000

ILmtMinus = 100.000000

ILmtPlus = 100.000000

ItThresh = 60.000000

Kip = 36.442473

Kpp = 15.000000

Kvi = 5.000000

Kvp = 0.365210

Polecount = 4

end params

'----- params end -----

'----- Define (dim) Global Variables -----

'----- Main Program -----

main

accelrate = 15000

decelrate = 200

runspeed = 1000

enable = 1

when inp8 = 1, continue

when inp8 = 0, continue

govel

runspeed = 0

when inp8 = 1, continue

govel

end main

'----- Subroutines and Functions -----

'----- Interrupt Routines -----

' This is Exercise 7.6 Using discrete inputs to Synchronize motion

'----- Parameter Values Header -----

' Drive: SC952
' Motor: R32H
' Performance Setting: Medium
' Inertia Ratio: 2

'----- params start -----

params
ARF0 = 150.000000
ARF1 = 750.000000
Comloff = 0.000000
ILmtMinus = 100.000000
ILmtPlus = 100.000000
ItThresh = 60.000000
Kip = 36.442473
Kpp = 15.000000
Kvi = 5.000000
Kvp = 0.365210
Polecount = 4

end params

'----- params end -----

'----- Define (dim) Global Variables -----

'----- Main Program -----

main
accelrate = 1000
runspeed = 800
enable = 1

when inp9 = 1, continue
when inp8 = 1, continue
when inp8 = 0, continue
govel

accelrate = 1200
runspeed = 2000

when inp8 = 1, continue
updmove

decelrate = 2000
runspeed = 0

when inp9 = 0, continue
updmove

end main

'----- Subroutines and Functions -----

'----- Interrupt Routines -----

' This is Exercise 7.7 Using subroutines

```
'----- Parameter Values Header -----
' Drive:      SC952
' Motor:      R32H
' Performance Setting: Medium
' Inertia Ratio:  2
'----- params start -----
params
ARF0  = 150.000000
ARF1  = 750.000000
Commmoff = 0.000000
ILmtMinus = 100.000000
ILmtPlus = 100.000000
ItThresh = 60.000000
Kip    = 36.442473
Kpp    = 15.000000
Kvi    = 5.000000
Kvp    = 0.365210
Polecount = 4
end params
'----- params end -----

'----- Define (dim) Global Variables -----
dim counter as integer
'----- Main Program -----
main
accelrate = 8000
decelrate = accelrate
runspeed = 800
indexdist = 1.25*4096
inposlimit = 5
enable = 1

for counter = 1 to 7
  when inp7 = 1, continue
  when inp7 = 0, continue
  goincr
  while inposition = 0
  wend
  call messages
next counter

end main

'----- Subroutines and Functions -----
sub Messages
print "Move Complete"
print "Present Position is";counter
print "Toggle Inp7 to begin next move"
print
end sub

'----- Interrupt Routines -----
```

' This is Exercise 8.1 Using Electronic Gearing

'----- Parameter Values Header -----

' Drive: SC952
' Motor: R32H
' Performance Setting: Medium
' Inertia Ratio: 2

'----- params start -----

params

ARF0 = 150.000000
ARF1 = 750.000000
Comloff = 0.000000
ILmtMinus = 100.000000
ILmtPlus = 100.000000
ItThresh = 60.000000
Kip = 36.442473
Kpp = 15.000000
Kvi = 5.000000
Kvp = 0.365210
Polecount = 4

end params

'----- params end -----

'----- Define (dim) Global Variables -----

dim EncoderSpeed as float

Dim Loop as integer

'----- Main Program -----

main

cls

encin = 1024

enable = 0

Loop = 1

While Loop = 1

EncoderSpeed = (EncFreq*60)/(4 * EncIn)

Print"Encoder Speed (RPM) =";EncoderSpeed

pause(1)

wend

end main

'----- Subroutines and Functions -----

'----- Interrupt Routines -----

' This is Exercise 8.2 Using Interrupt Routines

'----- Parameter Values Header -----

' Drive: SC952
' Motor: R32H
' Performance Setting: Medium
' Inertia Ratio: 2

'----- params start -----

params
ARF0 = 150.000000
ARF1 = 750.000000
Comloff = 0.000000
ILmtMinus = 100.000000
ILmtPlus = 100.000000
IfThresh = 60.000000
Kip = 36.442473
Kpp = 15.000000
Kvi = 5.000000
Kvp = 0.365210
Polecount = 4

end params

'----- params end -----

'----- Define (dim) Global Variables -----

'----- Main Program -----

main
cls
accelrate = 1000
decelrate = accelrate
runspeed = 500
enable = 1
intri7lo = 1
govel

while 1 = 1
print "Motor velocity (rpm) is ";velocity
pause(1)
wend

end main

'----- Subroutines and Functions -----

'----- Interrupt Routines -----

interrupt i7lo
abortmotion
cls
print "Program aborted"
end interrupt

' This is Exercise 8.3 Using Character Interrupts

'----- Parameter Values Header -----

' Drive: SC952
' Motor: R32H
' Performance Setting: Medium
' Inertia Ratio: 2

'----- params start -----

params
ARF0 = 150.000000
ARF1 = 750.000000
Comloff = 0.000000
ILmtMinus = 100.000000
ILmtPlus = 100.000000
ItThresh = 60.000000
Kip = 36.442473
Kpp = 15.000000
Kvi = 5.000000
Kvp = 0.365210
Polecount = 4

end params

'----- params end -----

'----- Define (dim) Global Variables -----

DIM USERINPUT\$ AS STRING

'----- Main Program -----

main
CLS
ACCELRATE = 10000
DECELRATE = ACCELRATE
RUNSPEED = 200
ENABLE = 1

INTRCHAR = 1
WHILE 1 = 1
WEND

end main

'----- Subroutines and Functions -----

'----- Interrupt Routines -----

INTERRUPT CHAR
USERINPUT\$ = UCASE\$(INKEY\$)

IF USERINPUT\$ = "C" THEN
DIR = 0
GOVEL
ELSEIF USERINPUT\$ = "W" THEN
DIR = 1
GOVEL
ELSEIF USERINPUT\$ = "Q" THEN
RUNSPEED = 0
UPDMOVE

END IF

WHILE INKEY\$ <> ""

WEND

INTRCHAR = 1

END INTERRUPT

```

'----- Parameter Values Header -----
' Drive:      SC952
' Motor:      R32H
' Performance Setting: Medium
' Inertia Ratio:  2
'----- params start -----
params
ARF0  = 150.000000
ARF1  = 750.000000
Commoft = 0.000000
ILmtMinus = 100.000000
ILmtPlus = 100.000000
ItThresh = 60.000000
Kip    = 36.442473
Kpp    = 15.000000
Kvi    = 5.000000
Kvp    = 0.365210
Polecount = 4
end params
'----- params end -----

'----- Define (dim) Global Variables -----

'----- Main Program -----
main
cls
poscommand = 0
enable = 1
posmodulo = 40960
configpls(0, 20480, 4096, 0)
configpls(1, 0, 4096, 0)

intri0lo = 1
intri1lo = 1
'intri1hi = 1

enablepls0 = 1
enablepls1 = 1

runspeed = 100
indexdist = 40960

while 1
  goincr
  when position > 8190, continue
  print whenposition
  when position > 20478, continue
  print whenposition
  while inposition = 0

  wend
wend

end main

```

'----- Subroutines and Functions -----'

'----- Interrupt Routines -----'

```
interrupt i0lo  
runspeed = 500  
updmove  
pause(.25)  
print velocity  
intri0lo = 1  
end interrupt
```

```
interrupt i1lo  
runspeed = 100  
updmove  
pause(.25)  
print velocity  
intri1lo = 1  
end interrupt
```