

' 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

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 -----

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
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 -----

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
  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 -----
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
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 -----

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
  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 -----
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
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

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
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 -----

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

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 -----

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
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 = 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
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 -----

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

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 -----

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

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

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

abortedmotion

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
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 -----

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
  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
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
updmov
pause(.25)
print velocity
intri0lo = 1
end interrupt
```

```
interrupt i1lo
runspeed = 100
updmov
pause(.25)
print velocity
intrillo = 1
end interrupt
```