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ASSIGNMENT 3

.eqv HEADING 0xffff8010 # Integer: An angle between 0 and 359

# 0 : North (up)

# 90: East (right)

# 180: South (down)

# 270: West (left)

.eqv MOVING 0xffff8050 # Boolean: whether or not to move

.eqv LEAVETRACK 0xffff8020 # Boolean (0 or non-0):

# whether or not to leave a track

.eqv WHEREX 0xffff8030 # Integer: Current x-location of MarsBot

.eqv WHEREY 0xffff8040 # Integer: Current y-location of MarsBot

.text

main: jal TRACK # draw track line

nop

addi $a0, $zero, 90 # Marsbot rotates 90\* and start running

jal ROTATE

nop

jal GO

nop

sleep1: addi $v0,$zero,32 # Keep running by sleeping in 1000 ms

li $a0,1000

syscall

jal UNTRACK # keep old track

nop

jal TRACK # and draw new track line

nop

goDOWN: addi $a0, $zero, 180 # Marsbot rotates 180\*

jal ROTATE

nop

sleep2: addi $v0,$zero,32 # Keep running by sleeping in 2000 ms

li $a0,2000

syscall

jal UNTRACK # keep old track

nop

jal TRACK # and draw new track line

nop

goLEFT: addi $a0, $zero, 270 # Marsbot rotates 270\*

jal ROTATE

nop

sleep3: addi $v0,$zero,32 # Keep running by sleeping in 1000 ms

li $a0,1000

syscall

jal UNTRACK # keep old track

nop

jal TRACK # and draw new track line

nop

goASKEW:addi $a0, $zero, 120 # Marsbot rotates 120\*

jal ROTATE

nop

sleep4: addi $v0,$zero,32 # Keep running by sleeping in 2000 ms

li $a0,2000

syscall

jal UNTRACK # keep old track

nop

jal TRACK # and draw new track line

nop

end\_main:

#-----------------------------------------------------------

# GO procedure, to start running

# param[in] none

#-----------------------------------------------------------

GO: li $at, MOVING # change MOVING port

addi $k0, $zero,1 # to logic 1,

sb $k0, 0($at) # to start running

nop

jr $ra

nop

#-----------------------------------------------------------

# STOP procedure, to stop running

# param[in] none

#-----------------------------------------------------------

STOP: li $at, MOVING # change MOVING port to 0

sb $zero, 0($at) # to stop

nop

jr $ra

nop

#-----------------------------------------------------------

# TRACK procedure, to start drawing line

# param[in] none

#-----------------------------------------------------------

TRACK: li $at, LEAVETRACK # change LEAVETRACK port

addi $k0, $zero,1 # to logic 1,

sb $k0, 0($at) # to start tracking

nop

jr $ra

nop

#-----------------------------------------------------------

# UNTRACK procedure, to stop drawing line

# param[in] none

#-----------------------------------------------------------

UNTRACK:li $at, LEAVETRACK # change LEAVETRACK port to 0

sb $zero, 0($at) # to stop drawing tail

nop

jr $ra

nop

#-----------------------------------------------------------

# ROTATE procedure, to rotate the robot

# param[in] $a0, An angle between 0 and 359

# 0 : North (up)

# 90: East (right)

# 180: South (down)

# 270: West (left)

#-----------------------------------------------------------

ROTATE: li $at, HEADING # change HEADING port

sw $a0, 0($at) # to rotate robot

nop

jr $ra

nop

* Kết quả

