Writing a Snake game

in AQA Assembly Language

TEACHER’S GUIDE

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# Introduction

# Story 3

## Complete code after Story 3

defineRegisters:

mov r1,#0x008844 //Snake colour (green)

mov r2,#0xffffff //Background colour (white)

mov r3, #271 //Tail position, initialised

mov r4, #272 //Head position, initialised

drawSnake:

str r1,[r3+256] //Tail

str r1,[r4+256] //Head

moveSnake:

str r2,[r3+256] //Reset tail to Background

add r3,r3,#1 //Increment the tail pointer by 1

add r4,r4,#1 //Increment the head pointer by 1

str r1,[r4+256] //Draw new head

b moveSnake //Loop

# Story 4:

## Complete code after Story 4

defineRegisters:

mov r1,#0x008844 //Snake colour (green)

mov r2,#0xffffff //Background colour (white)

mov r3, #271 //Tail position, initialised

mov r4, #272 //Head position, initialised

mov r5, #520 //Apple position

mov r6, #0xff8800 //Apple colour

drawSnake:

str r1,[r3+256] //Tail

str r1,[r4+256] //Head

moveSnake:

str r6,[r5+256] //Draw Apple each cycle, in case it is on snake

str r2,[r3+256] //Reset tail to Background

add r3,r3,#1 //Increment the tail pointer by 1

add r4,r4,#1 //Increment the head pointer by 1

str r1,[r4+256] //Draw new head

b moveSnake //Loop

# Story 5

## Complete code after Story 5

defineRegisters:

mov r1,#0x008844 //Snake colour (green)

mov r2,#0xffffff //Background colour (white)

mov r3, #271 //Tail position, initialised

mov r4, #272 //Head position, initialised

mov r5, #520 //Apple position

mov r6, #0xff8800 //Apple colour

drawSnake:

str r1,[r3+256] //Tail

str r1,[r4+256] //Head

moveSnake:

str r6,[r5+256] //Draw Apple each cycle, in case it is on snake

add r4,r4,#1 //Increment the head location by 1

cmp r4,r5 //If the head is in same location as apple...

beq moveHead //...Skip updating the tail, to make snake grow

moveTail:

str r2,[r3+256] //Reset tail to Background

add r3,r3,#1 //Increment the tail pointer by 1

moveHead:

str r1,[r4+256] //Draw new head

## b moveSnake //Loop

# Story 6

## Complete code after Story 6