

Snake head Module... Box NO: 1

Arduino: 1

Snake fire

Each snake can independently breath fire from mouth.

Arduino 1 (A1) controls this via a relay board that:

Controls 4 x 240v solenoid valve
+ HT ignition spark generators

Tounges and Jaws

these are related!

Each snake has an independent tongue, controlled by air via (A1) and a 12v solenoid Air leaks when tongue protrudes creating Hiss. Each snake has independent Top & Bottom Jaw.

These are controlled via A1 and servo board running a total of 8 servos a top and bottom jaw for each of 4 snakes.

Bottom Jaw must not open when tongue is out!

Snake eyes

The Eyes are 12 v single colour LED's; controlled via A1 and a servo board.

Each snake has two independent eyes: a total of 8 LED's.

Box 1 contains.....

Arduino plus code... existing code found in file named.....

servo-random-mouths_B_intergrateLEDs1

1 x 8 channel relay board... 1-4 control fire via 240v AC

5-8 control air solenoids

2 x 16 channel PWM servo boards... 1 board 8 channels to operate each eye... 1 board uses 8 channels to operate each jaw independently

1 x slave node for RS 485 bus

relevant power for each element

Interface Module... Box NO:5 Arduino: A5

this comprises of:

1 x led neo Adafruit 16 pixel ring M >>>> 4 sets of pressure sensor pads/ drums

The pressure sensors work via capacitive difference

each pad has its own neo pixel rings 1-4

A random colour displayed on M and 1 other drum has to be matched by the contestant with in a specified time frame for the game to continue

This box also contains: all relevant power supplies,

1 x slave node for RS 485 bus

Snake sax fire Module... Box NO:3

Arduino: 3

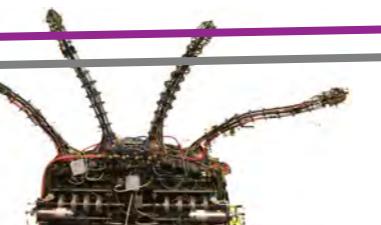
Instrument Flames:

1-4 constructed from variety of old brass instruments
240 volt solenoid valve + HT spark ignition
Controlled via Arduino 3 via 5v low trigger relays.
This box also contains: all relevant power supplies,
1 x slave node for RS 485 bus



These will be highly visible mounted on game booth roof

RS 485 Bus



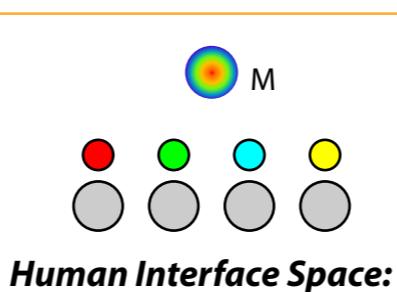
The Snakes:

1-4 they dance in uniform movement

each snake has Independent:
2 eyes single colour LED
top and bottom jaws
tongue driven by air creating audible hiss
fire jet from mouth



Scissor Lift



Soud Module
Controlled by RP
plays a selection of sounds
and tunes to accompany the game



coin slot

A coin inserted into the slot sends a pulse to the RP to begin the Game!

Raspberry Pi Master Module RPM: Box NO:6

This box contains a Raspberry Pi 4
It is the master controlling the 5 slave Arduinos over an RS 485 Bus
It is activated via a pulse from the coin slot
It has a node for the Bus

It controls peripherals via 2 x HDMI slots and its 3.5mm sound jack

Snake Movement Module... Box NO: 2

Arduino: 2

Snake dance Movement

Controlled via Arduino 2 (A2)

This operates 4 x 12V DC motors via positioning

Motor controller EM-241-SAF ,

These are directed by 4 x 10K digital pots

Adafruit DS3502 I2C Digital Potentiometer

4 X conventional 10K pots provide feed back

This box also contains: all relevant power supplies,
1 x slave node for RS 485 bus

Scissor Lift Module... Box NO:4

Arduino: A4

Arduino 4 controls scissor lift

this moves the snake module into and out of sight
It is driven by 12v linear actuator takes approx 30 secs to lift
has proximity sensors type LJ12A3-4-Z to determine end stops

A 5V DPDT Low Trigger latching relay for direction change
It has a voltage sensor that could inform A4 that an end has been reached... alternatively the prox sensors could provide readings directly to A4

This box also contains: all relevant power supplies,
1 x slave node for RS 485 bus

TEXT MODULE

Game Info Text:

Controlled by RP... displayed on Monitor via HDMI and video files
Publicises game to passers by
Provides basic instructions and wait times
counts down numerically.

8
Personal SCORE MODULE

328
HIGH SCORE MODULE

Score counters:

controlled by RP via HDMI
one measures the score of current contestant
then resets after each game.
The other measures the high score to date,
it resets if it is beaten.