

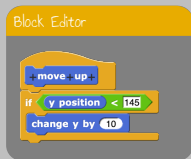
Create model



0

Create model

Consider possible actions



move up

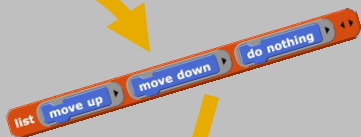
do nothing

move down

help
rename...
duplicate
delete
picture...
ringify
delete block definition...
edit...

move up

Right-click > ringify



Create model



Save model

Make a variable

model

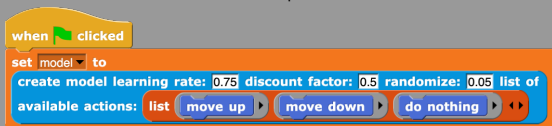
set model to

Create a new variable

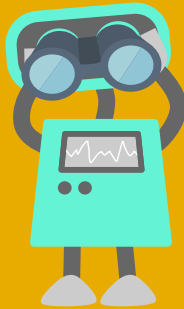
Name it

Save model in the variable

Include in program



Detect state



1

Detect state

Detect current state

Which information is important for the agent?



y position - y position of ball



Hints

More states means longer training time.

y position - y position of ball

instead of

list y position y position of ball

Often small amounts of information are enough

y position - y position of ball

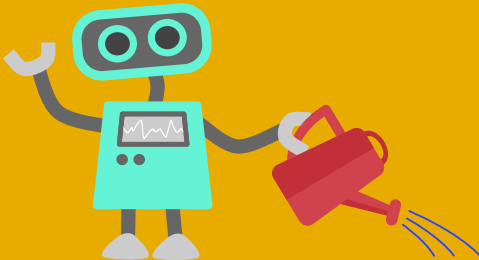
round / 10

Combine values to ranges

Include in program



Select & execute action



2

Select & execute action

Determine best action

State from card 2

set **best action** to **best action state: old state model: model**

Model from card 1

Variable contains best action, e.g.

best action

move up

Execute best action

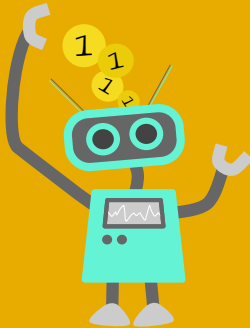
The variable reports a block. Thus, it can be executed.

run **best action**

Include in program



Receive reward



3

Receive reward

Calculate reward

When should we reward the agent,
when should we punish it?

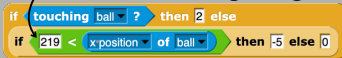
Instead of using
if then else
you can create your
own block.



Hints

Nest
conditions

Ball touches right edge

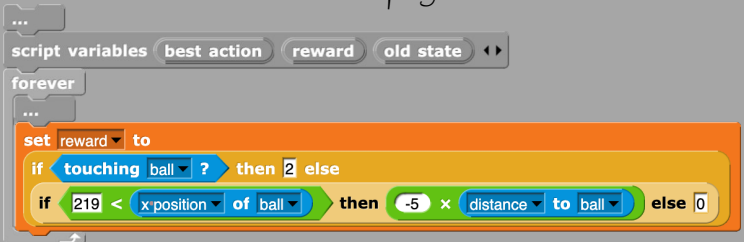


Punishment depending on distance to ball

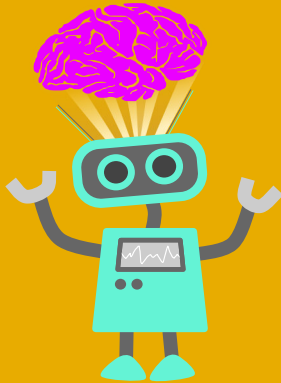
Dynamically determine
rewards and punishments



Include in program



Learn



4

Learn

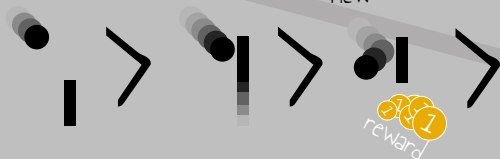
Process information

old state

best action

~~old state~~

new



Learn by
updating the
model

Update model

Model from card 1

State from card 2

update model **model** old state: **old state** new state:

round **y position** - **y position** of **ball** / **10** reward: **reward**

action performed: **best action**

State as
calculated in
card 2

Action from card 3

Reward from
card 4

Include in program

script variables **best action** **reward** **old state**

forever

update model **model** old state: **old state** new state:

round **y position** - **y position** of **ball** / **10** reward: **reward**

action performed: **best action**