

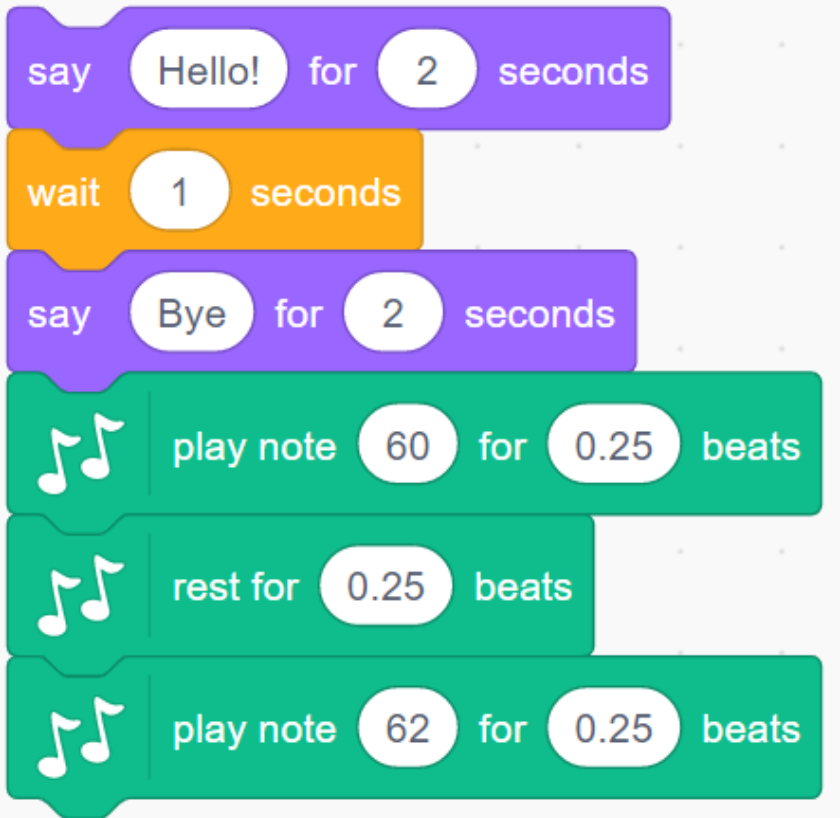
# Part 2 Fast & Slow Actions

Terms of use are on the last slide

Actions a computer  
processes per second

Computers process millions of  
instructions a second

# Fast & Slow

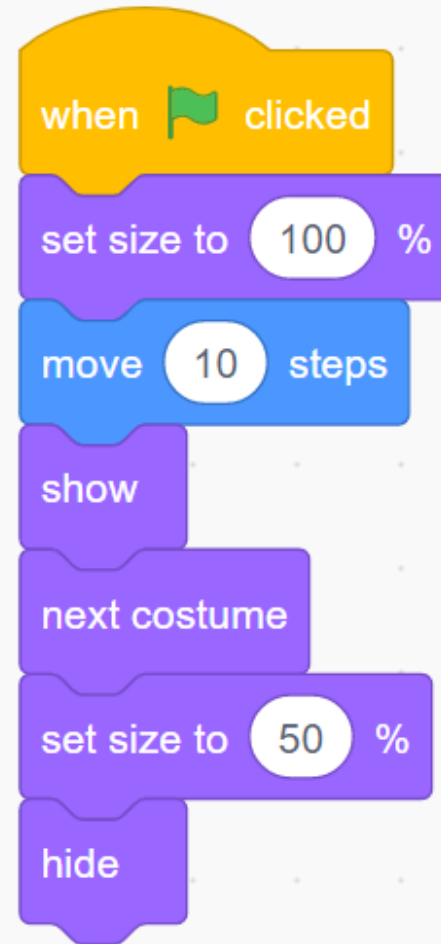


```
say Hello! for 2 seconds
wait 1 seconds
say Bye for 2 seconds
play note 60 for 0.25 beats
rest for 0.25 beats
play note 62 for 0.25 beats
```

A Scratch script consisting of six blocks: a purple 'say Hello! for 2 seconds' block, an orange 'wait 1 seconds' block, a purple 'say Bye for 2 seconds' block, a green 'play note 60 for 0.25 beats' block, a green 'rest for 0.25 beats' block, and a green 'play note 62 for 0.25 beats' block.

Slow over 5 seconds

Slow over 0.75 beats



```
when green flag clicked
set size to 100 %
move 10 steps
show
next costume
set size to 50 %
hide
```

A Scratch script starting with a yellow 'when green flag clicked' block, followed by five purple blocks: 'set size to 100 %', 'move 10 steps', 'show', 'next costume', and 'set size to 50 %', and ending with a purple 'hide' block.

Fast millions of commands per second

# Fast & Slow

```
move 10 steps
turn 15 degrees
turn 15 degrees
go to x: 0 y: 0
point in direction 90
say Hello!
next backdrop
switch backdrop to backdrop1
set size to 100 %
hide
show
start sound Meow
stop all sounds
```

Fast millions  
of commands  
per second

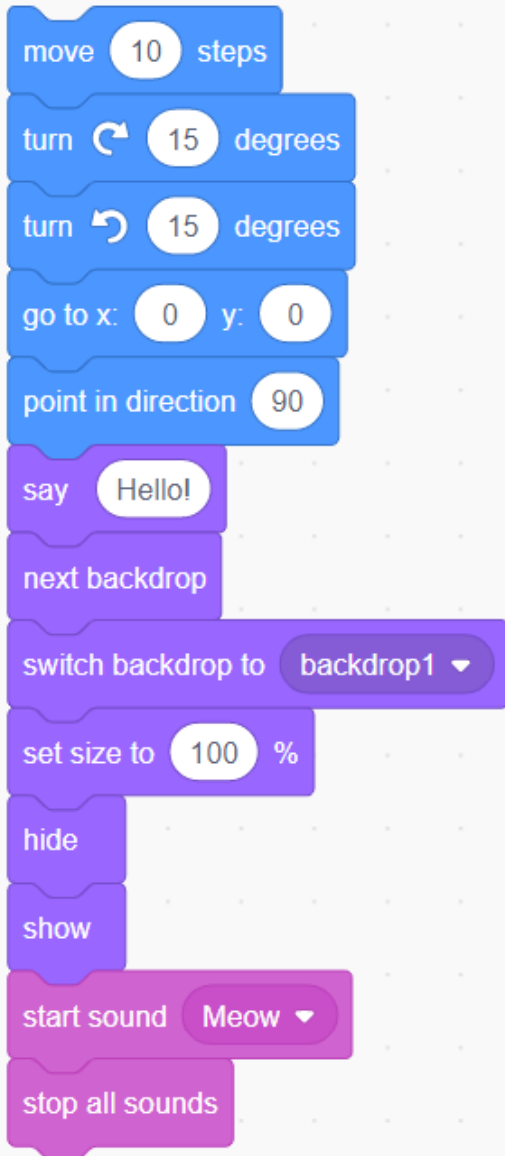
```
glide 1 secs to x: 0 y: 0
say Hello! for 2 seconds
think Hmm... for 2 seconds
play sound Meow until done
```

Slow over 5  
seconds

What is different  
between these  
fast & slow  
blocks?

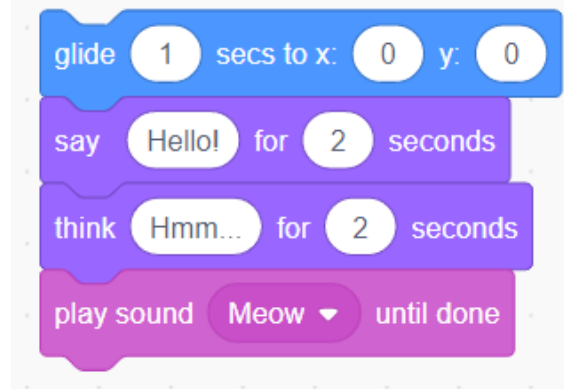


# Fast & Slow



```
move 10 steps
turn 15 degrees
turn 15 degrees
go to x: 0 y: 0
point in direction 90
say Hello!
next backdrop
switch backdrop to backdrop1
set size to 100 %
hide
show
start sound Meow
stop all sounds
```

Fast millions  
of commands  
per second



```
glide 1 secs to x: 0 y: 0
say Hello! for 2 seconds
think Hmm... for 2 seconds
play sound Meow until done
```

Slow over 5  
seconds

Slow blocks have  
times or say until  
done

# Fast & Slow

Fast millions of commands per second

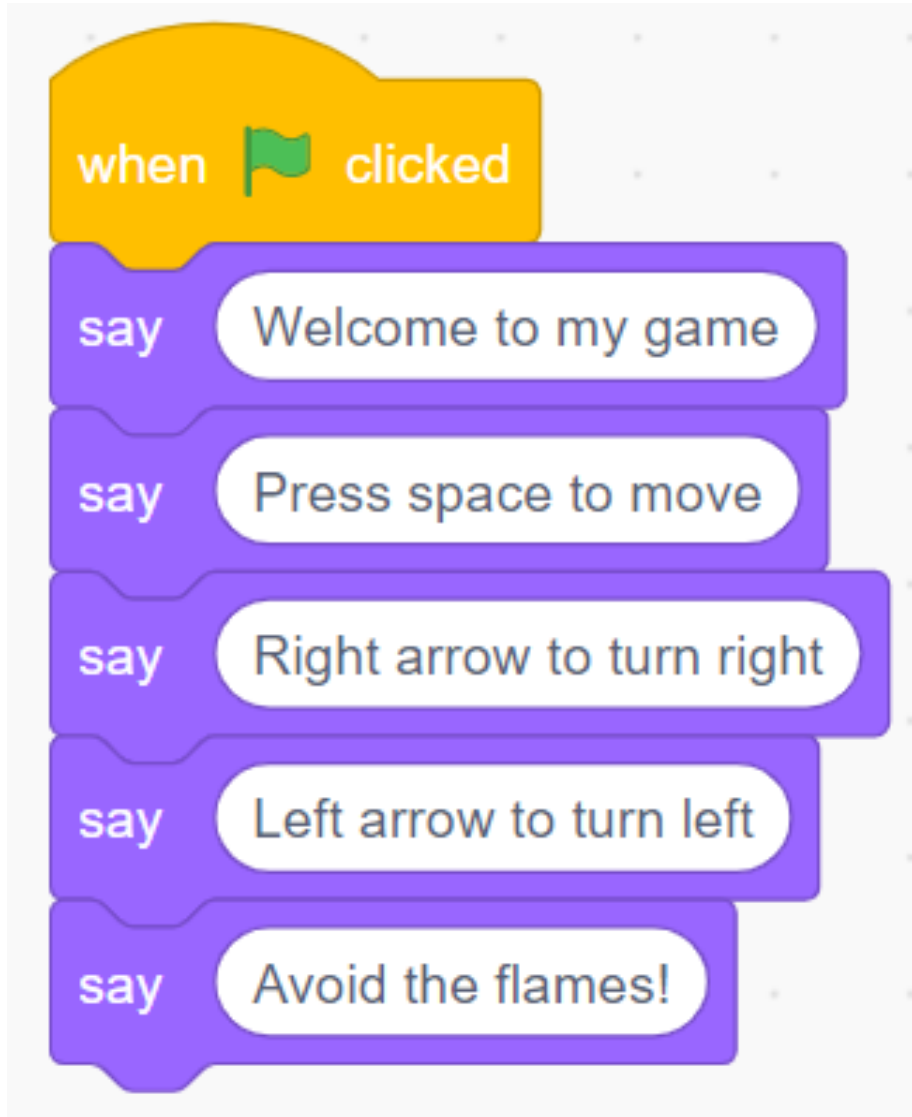
```
move 10 steps
turn 15 degrees
turn 15 degrees
go to x: 0 y: 0
point in direction 90
say Hello!
next backdrop
switch backdrop to backdrop1
set size to 100 %
hide
show
start sound Meow
stop all sounds
```



```
move 10 steps
wait 1 seconds
turn 15 degrees
wait 1 seconds
turn 15 degrees
wait 1 seconds
go to x: 0 y: 0
wait 1 seconds
say Hello!
wait 1 seconds
start sound Meow
wait 1 seconds
show
```

Fast blocks can be slowed down by wait blocks

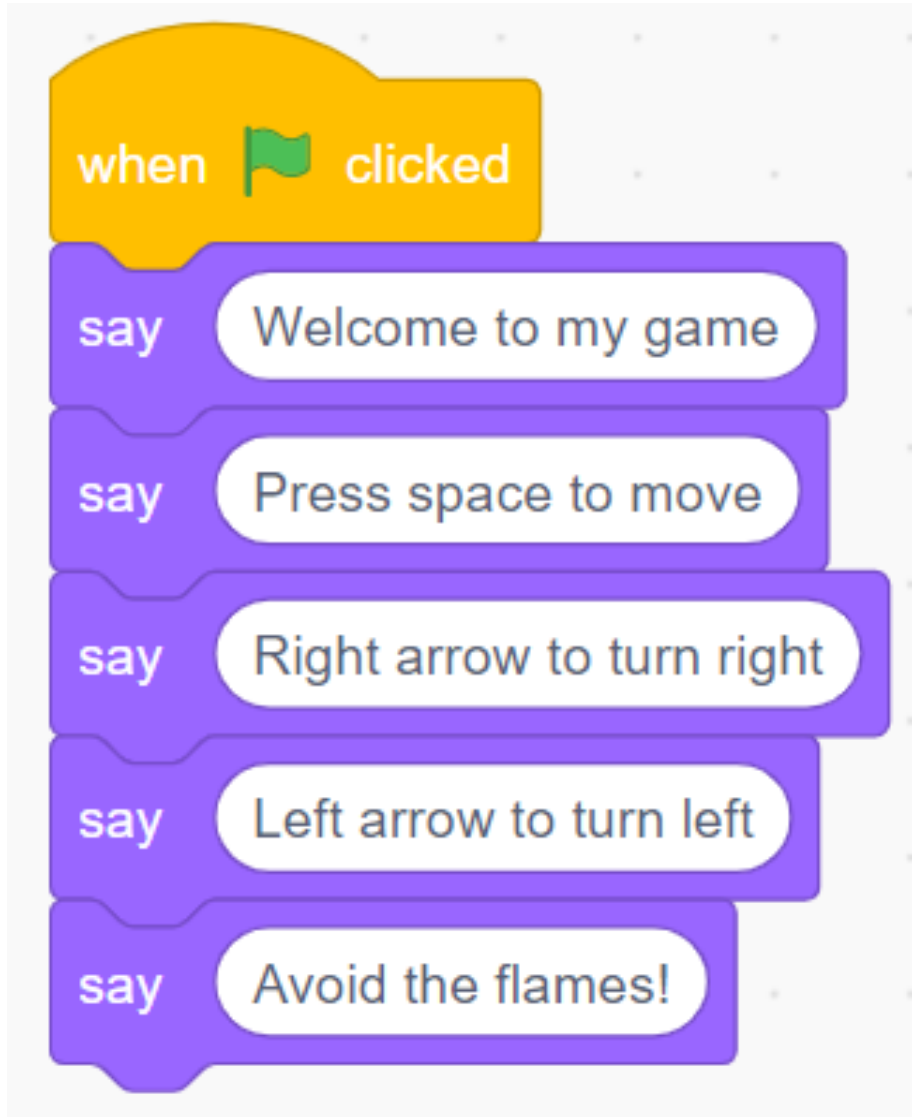
# Fast & Slow



What is wrong with this code?



# Fast & Slow



What is wrong with this code?

No waits or times



# Fast & Slow

Fixed



```
when green flag clicked
say Welcome to my game
wait 2 seconds
say Press space to move
wait 2 seconds
say Right arrow to turn right
wait 2 seconds
say Left arrow to turn left
wait 2 seconds
say Avoid the flames!
wait 2 seconds
say
```

# Fast & Slow



Fixed

# Timing Matters in Programming

Look out for blocks with built  
in times and blocks without

# Terms of use

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Further book resources can be found here

<https://computing.hias.hants.gov.uk/course/view.php?id=51>