

CS UNPLUGGED  at a distance

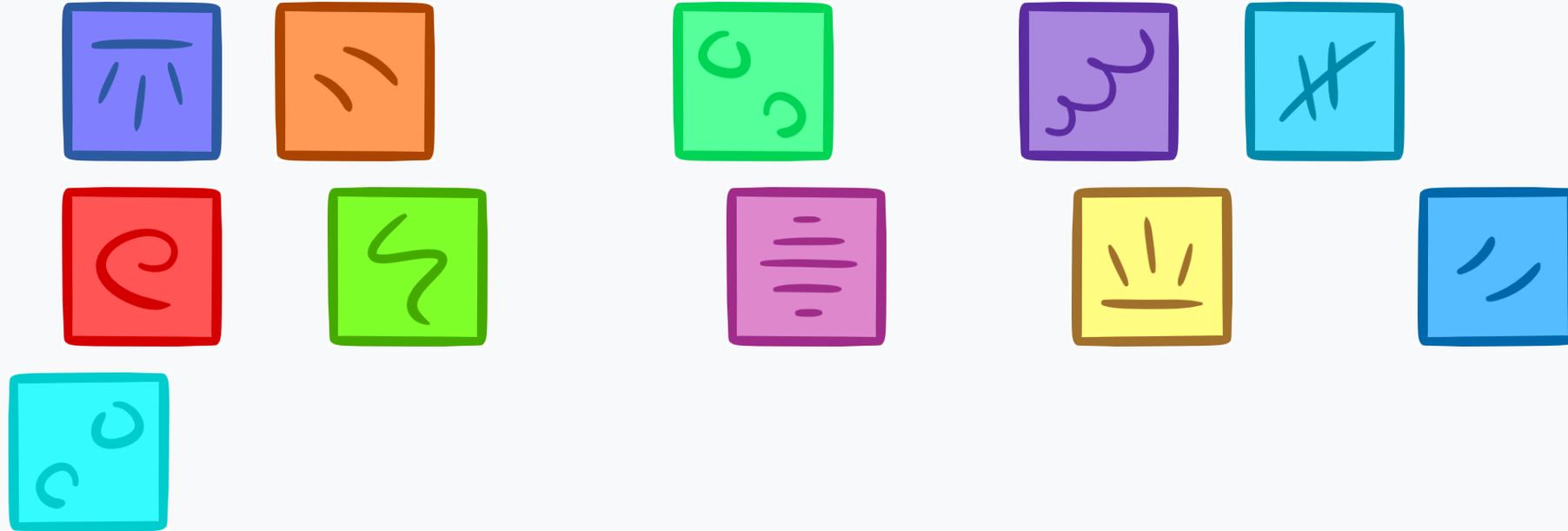
# Algorithms

# Key questions

- What is an algorithm?
- How is an algorithm different from a program?

# High Score Boxes

Clicking a box will reveal its number; your task is to find the highest number and enter it below.



Highest number:

Submit

# As an algorithm

```
set the maximum_so_far to the first number
```

```
for each other number:
```

```
    if the next number is larger than maximum_so_far:
```

```
        set maximum_so_far to the number
```

```
At the end, maximum_so_far contains the largest value
```

# As an algorithm

```
set the maximum_so_far to the first number
```

```
for each other number:
```

```
    if the next number is larger than maximum_so_far:
```

```
        set maximum_so_far to the number
```

```
At the end, maximum_so_far contains the largest value
```

# As an algorithm

```
set the maximum_so_far to the first number
```

```
for each other number:
```

```
    if the next number is larger than maximum_so_far:
```

```
        set maximum_so_far to the number
```

```
At the end, maximum_so_far contains the largest value
```

# As an algorithm

```
set the maximum_so_far to the first number
```

```
for each other number:
```

```
    if the next number is larger than maximum_so_far:
```

```
        set maximum_so_far to the number
```

```
At the end, maximum_so_far contains the largest value
```

# As an algorithm

```
set the maximum_so_far to the first number
```

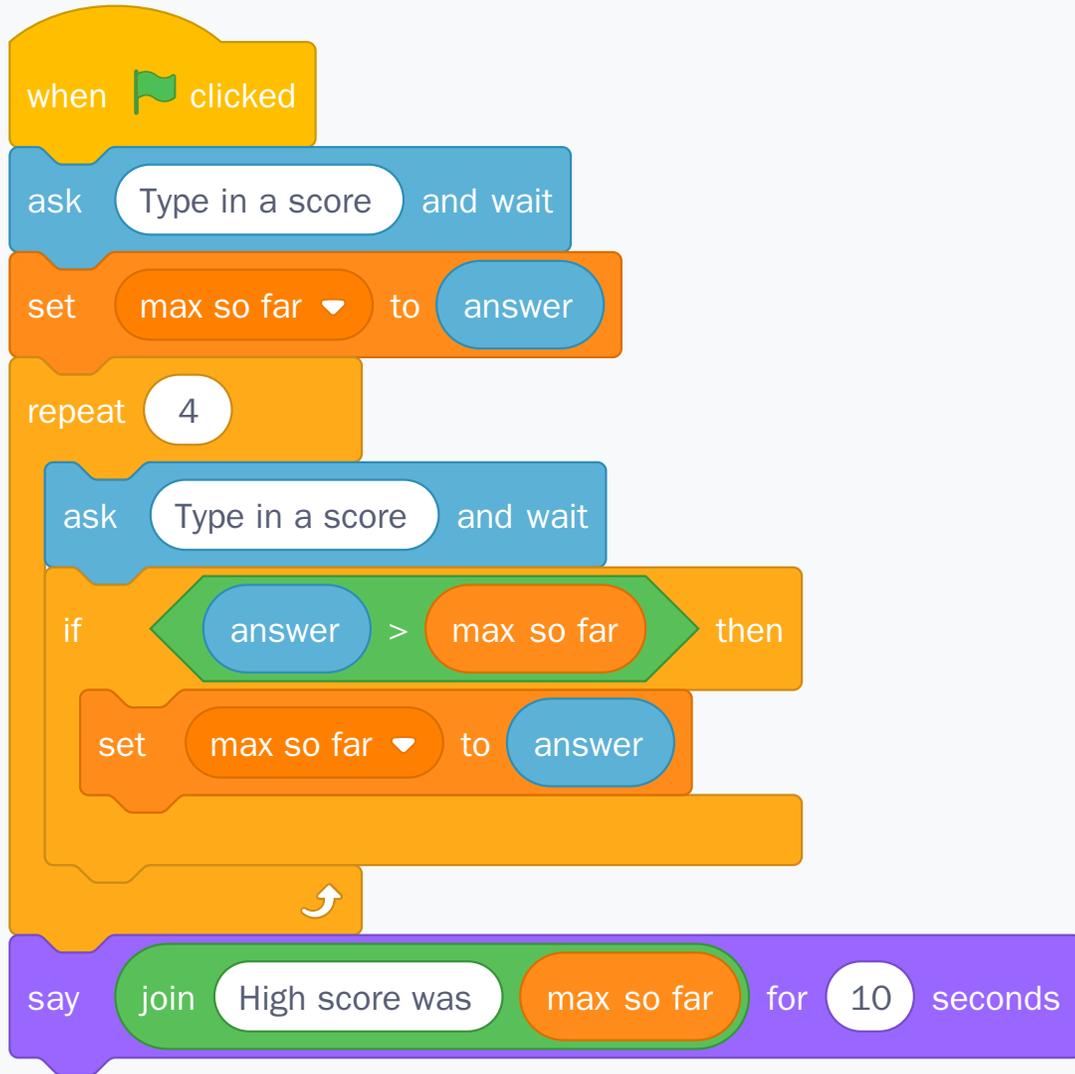
```
for each other number:
```

```
    if the next number is larger than maximum_so_far:
```

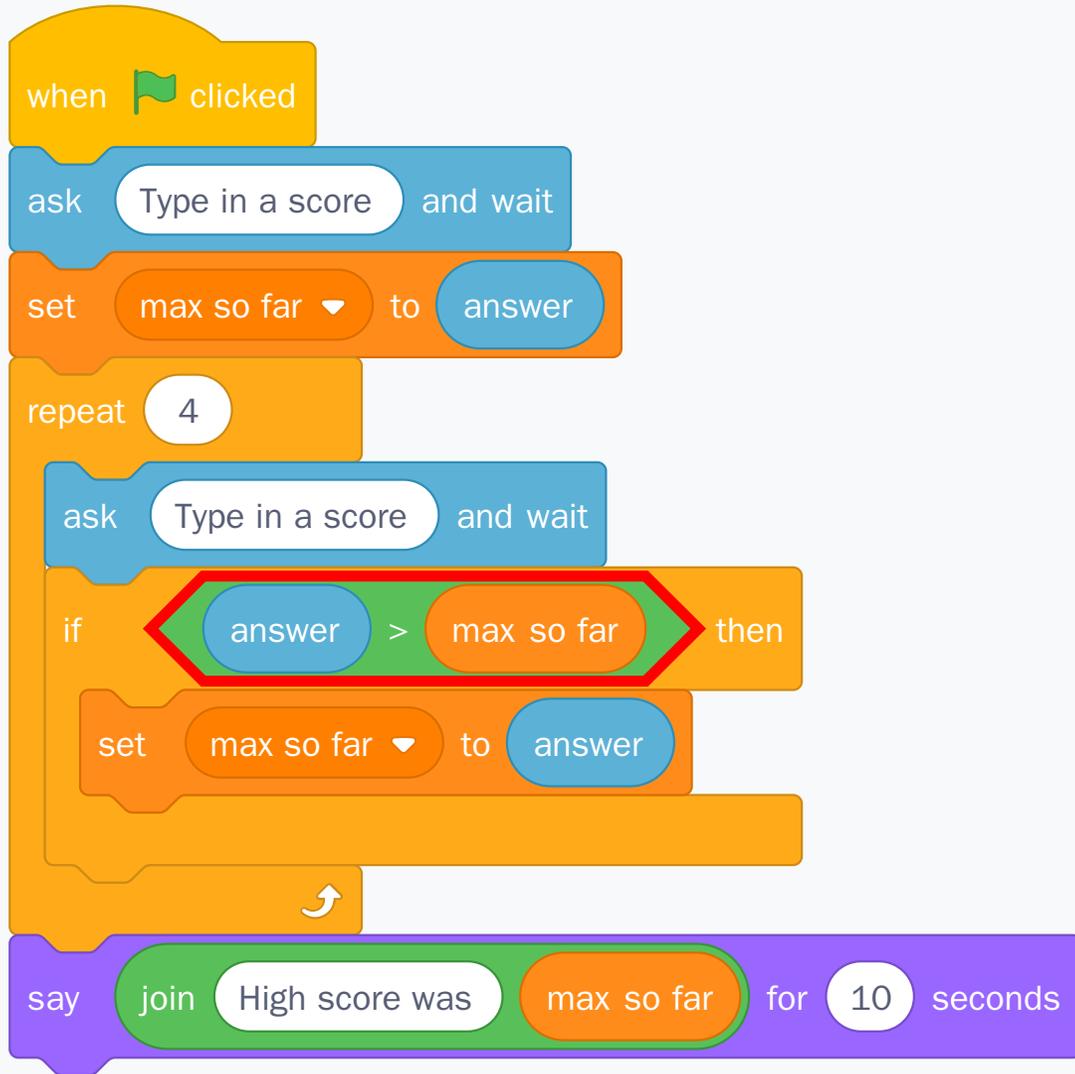
```
        set maximum_so_far to the number
```

```
At the end, maximum_so_far contains the largest value
```

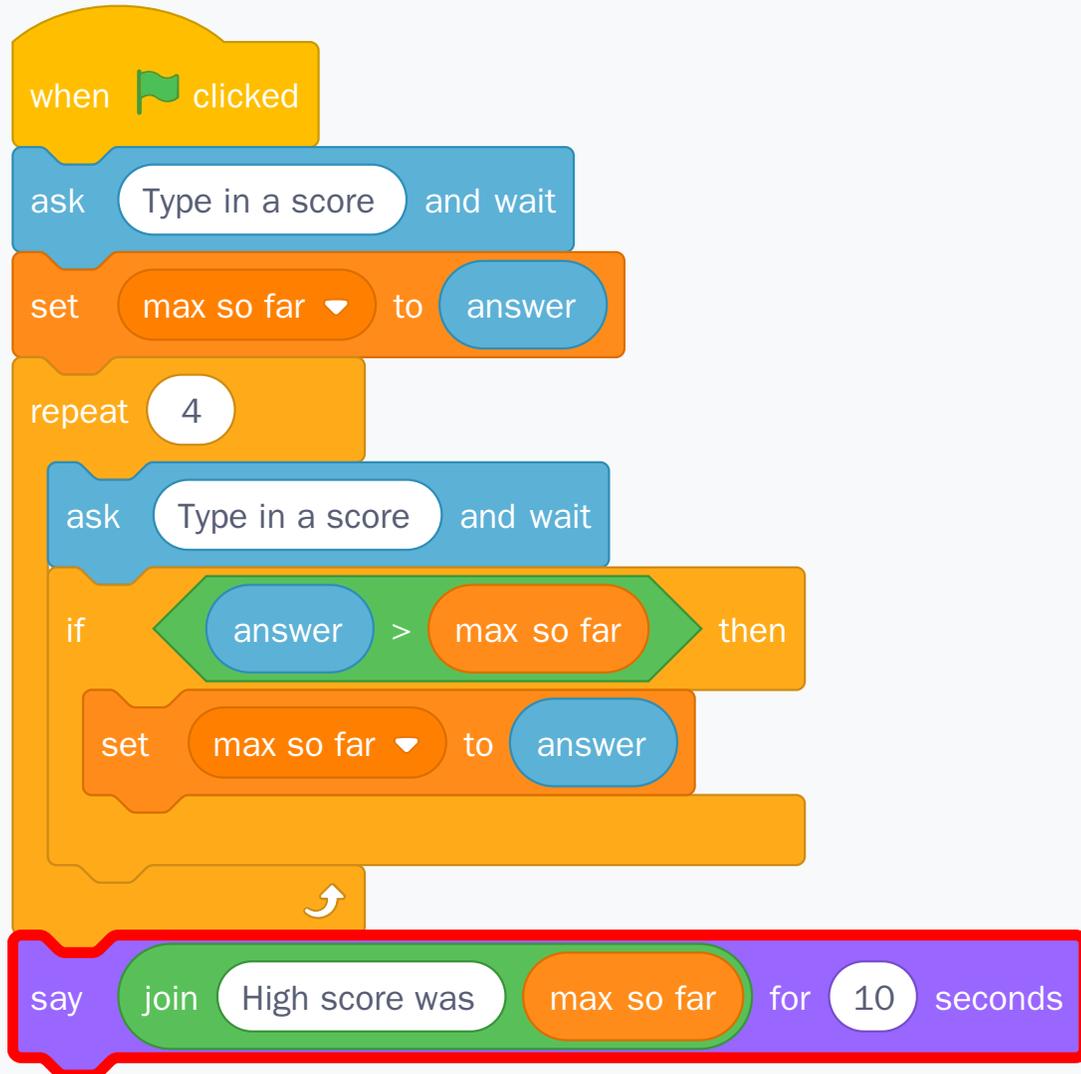
# Scratch



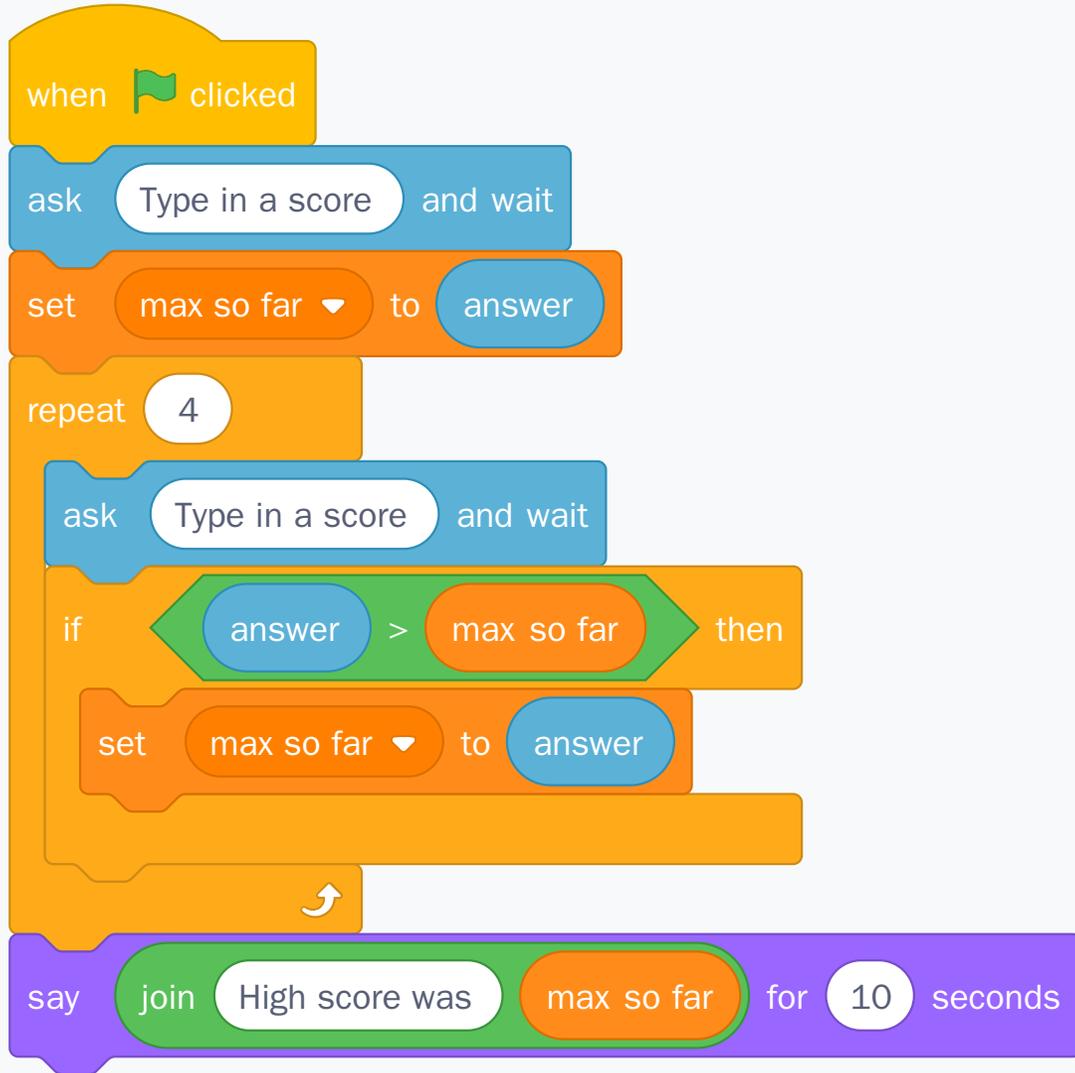
# Scratch



# Scratch

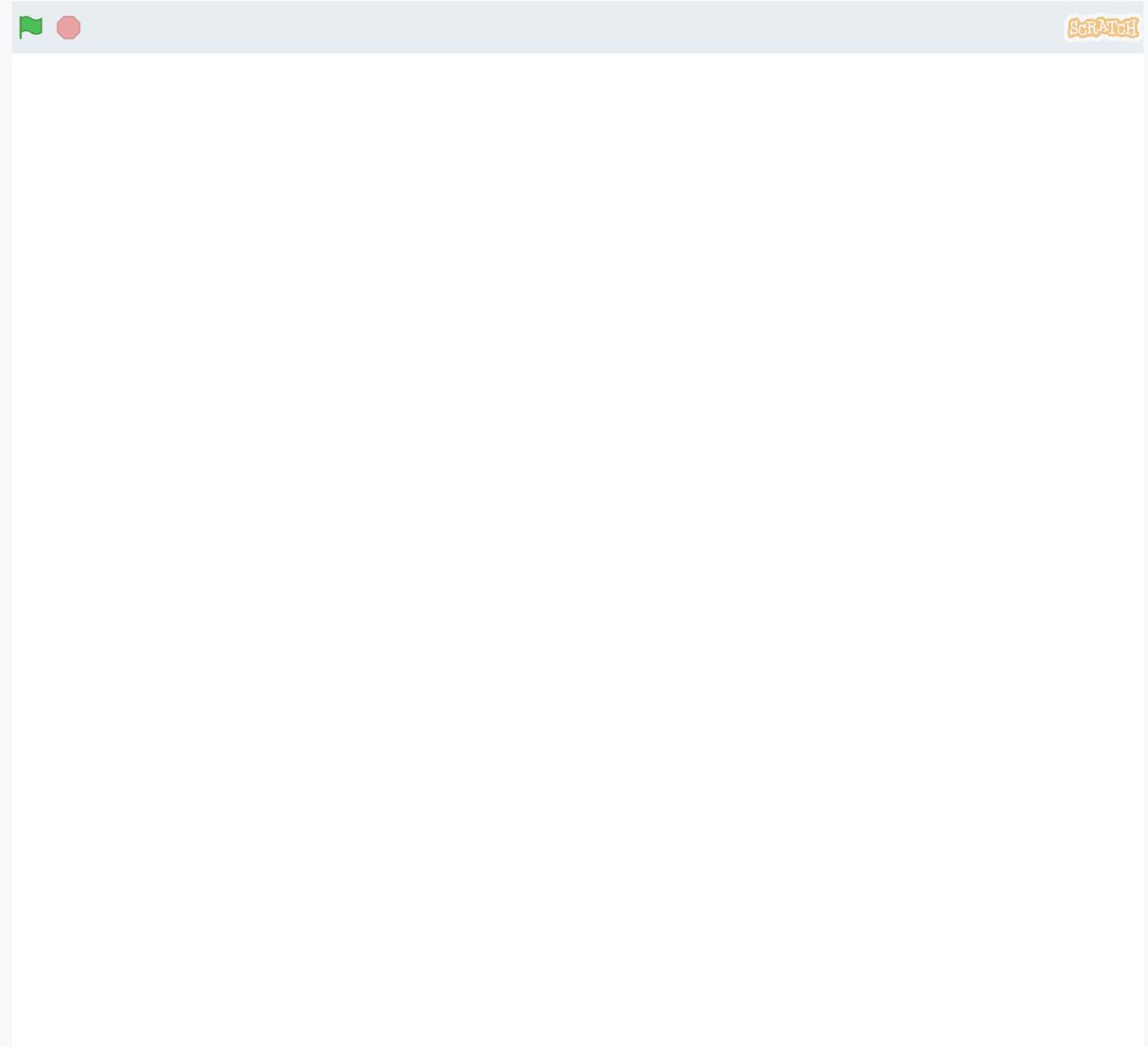


# Scratch



```
when green flag clicked
ask "Type in a score" and wait
set max so far to answer
repeat 4
  ask "Type in a score" and wait
  if answer > max so far then
    set max so far to answer
say join "High score was " max so far " for 10 seconds
```

The image shows a Scratch script designed to find the highest score among four user inputs. It begins with a 'when green flag clicked' event block. This is followed by an 'ask' block that prompts the user to 'Type in a score' and waits for an input. The input is then stored in a variable named 'max so far'. A 'repeat' loop is set to run 4 times. Inside the loop, another 'ask' block prompts the user for a score. An 'if' block checks if the current 'answer' is greater than the current 'max so far'. If true, the 'max so far' variable is updated with the new 'answer'. After the loop, a 'say' block displays the final 'max so far' value with the text 'High score was' and 'for 10 seconds'.



# Python

```
max_so_far = int(input("Type in a score: "))

for i in range(4):
    score = int(input("Type in a score: "))
    if score > max_so_far:
        max_so_far = score

print("High score was", max_so_far)
```

# Python

```
max_so_far = int(input("Type in a score: "))

for i in range(4):
    score = int(input("Type in a score: "))
    if score > max_so_far:
        max_so_far = score

print("High score was", max_so_far)
```

# Python

```
max_so_far = int(input("Type in a score: "))

for i in range(4):
    score = int(input("Type in a score: "))
    if score > max_so_far:
        max_so_far = score

print("High score was", max_so_far)
```

# Python

```
max_so_far = int(input("Type in a score: "))

for i in range(4):
    score = int(input("Type in a score: "))
    if score > max_so_far:
        max_so_far = score

print("High score was", max_so_far)
```

# Python

```
max_so_far = int(input("Type in a score: "))

for i in range(4):
    score = int(input("Type in a score: "))
    if score > max_so_far:
        max_so_far = score

print("High score was", max_so_far)
```

 **trinket** ▶ Run

Powered by  **trinket**  
Connecting to server /

# Key questions

- What is an algorithm?
- How is an algorithm different from a program?

# Supporting Resources

- [Computer Science Field Guide on Algorithms](https://www.csfieldguide.org.nz/en/chapters/algorithms/)

<https://www.csfieldguide.org.nz/en/chapters/algorithms/>

- [High score interactive](https://www.csfieldguide.org.nz/en/interactives/high-score-boxes/)

<https://www.csfieldguide.org.nz/en/interactives/high-score-boxes/>