







C



say hello, world



```
printf("hello, world\n");
```



```
#include <stdio.h>

int main(void)
{
    printf("hello, world\n");
}
```



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    printf("hello, world\n");
}
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```
while (true)
{
    printf("hello, world\n");
}
```



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while (true)
{
    printf("hello, world\n");
}
```



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```
while (true)
{
    printf("hello, world\n");
}
```





```
for (int i = 0; i < 50; i++)  
{  
    printf("hello, world\n");  
}
```



```
for (int i = 0; i < 50; i++)  
{  
    printf("hello, world\n");  
}
```



```
for (int i = 0; i < 50; i++)  
{  
    printf("hello, world\n");  
}
```



```
for (int i = 0; i < 50; i++)  
{  
    printf("hello, world\n");  
}
```



```
for (int i = 0; i < 50; i++)  
{  
    printf("hello, world\\n");  
}
```



```
for (int i = 0; i < 50; i++)  
{  
    printf("hello, world\n");  
}
```



```
for (int i = 0; i < 50; i++)  
{  
    printf("hello, world\n");  
}
```



```
for (int i = 0; i < 50; i++)  
{  
    printf("hello, world\\n");  
}
```

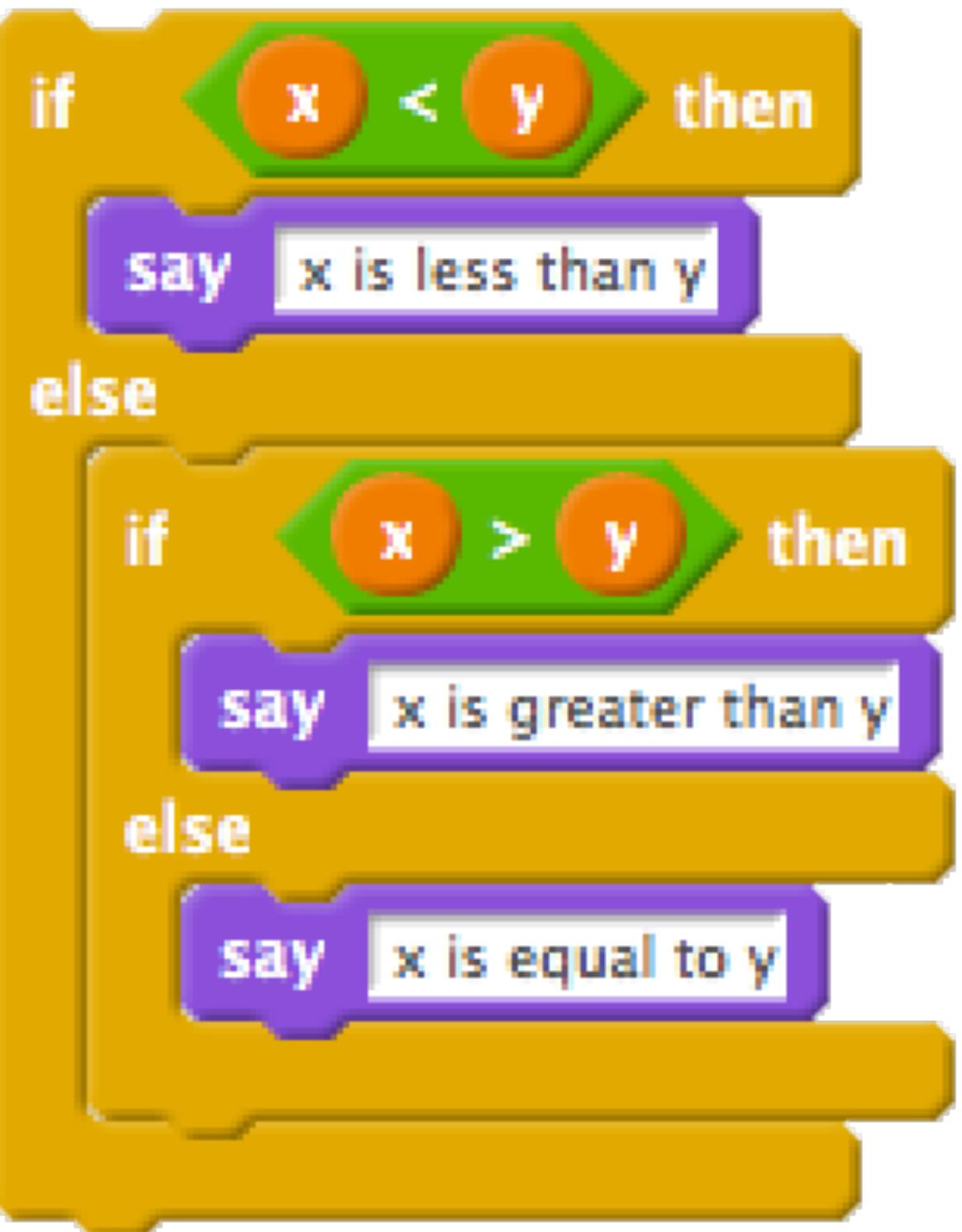


```
for (int i = 0; i < 50; i++)  
{  
    printf("hello, world\n");  
}
```

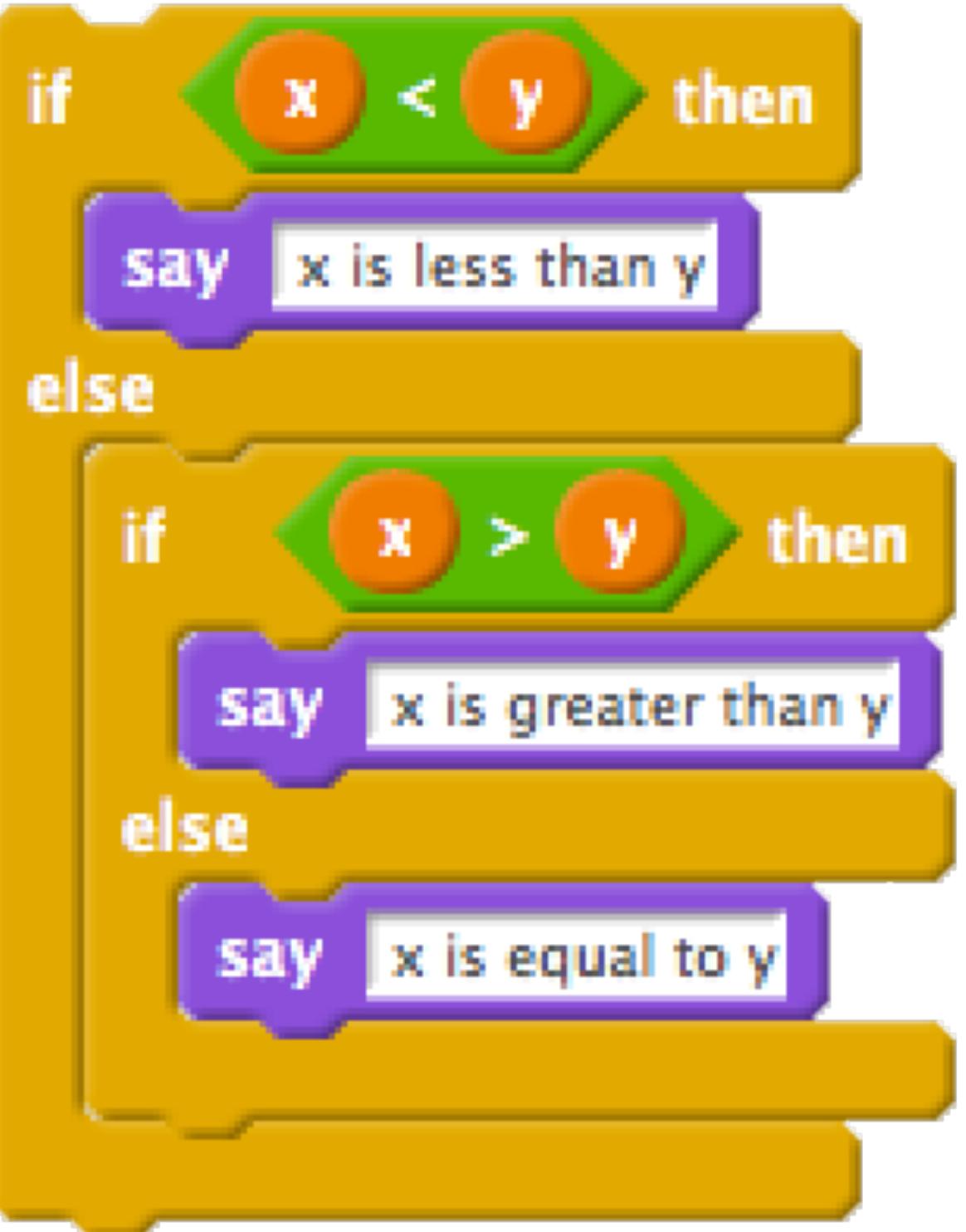


```
for (int i = 0; i < 50; i++)  
{  
    printf("hello, world\n");  
}
```

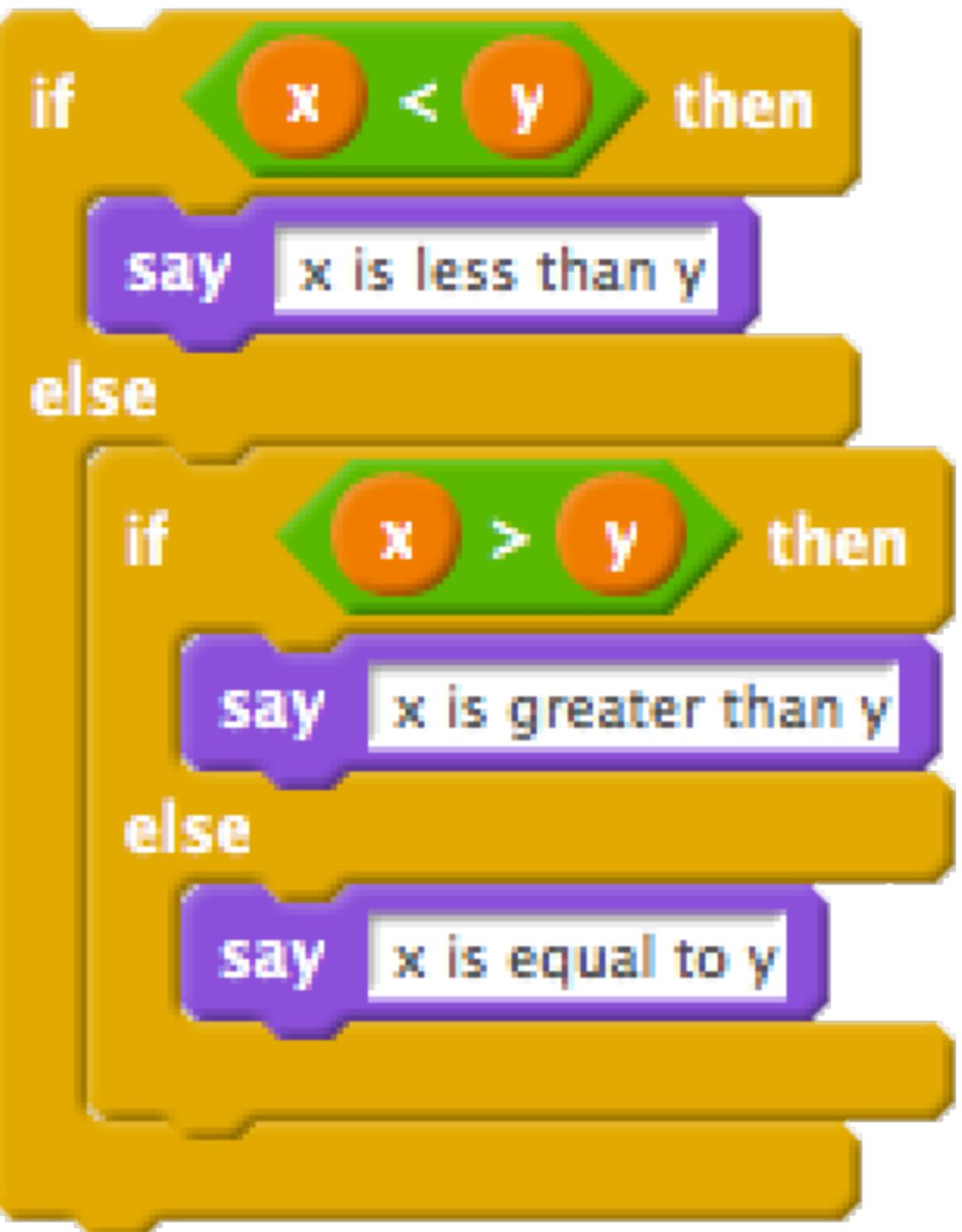
```
if x < y then  
    say x is less than y  
else  
    if x > y then  
        say x is greater than y  
else  
    say x is equal to y
```



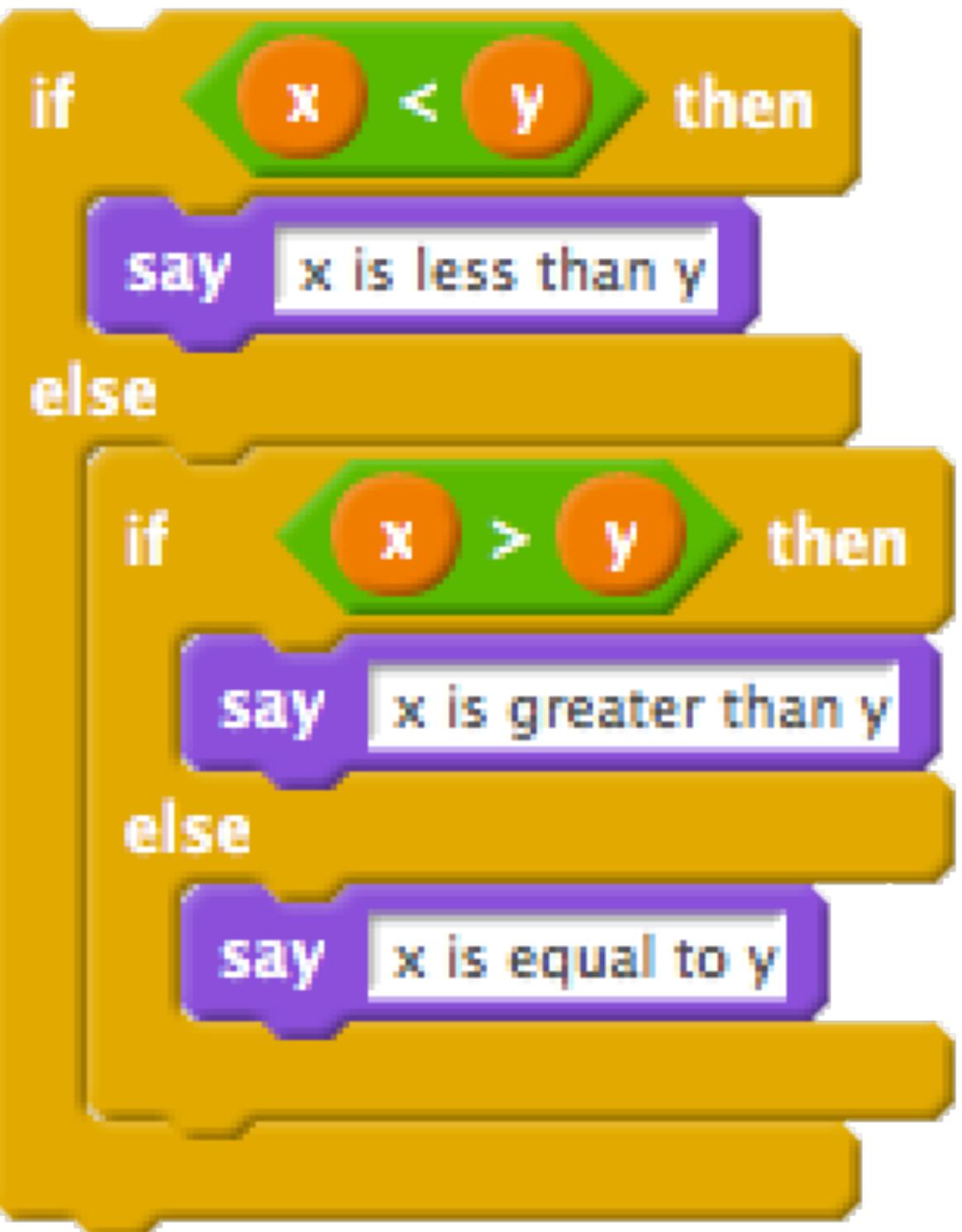
```
if (x < y)
{
    printf("x is less than y\n");
}
else if (x > y)
{
    printf("x is greater than y\n");
}
else
{
    printf("x is equal to y\n");
}
```



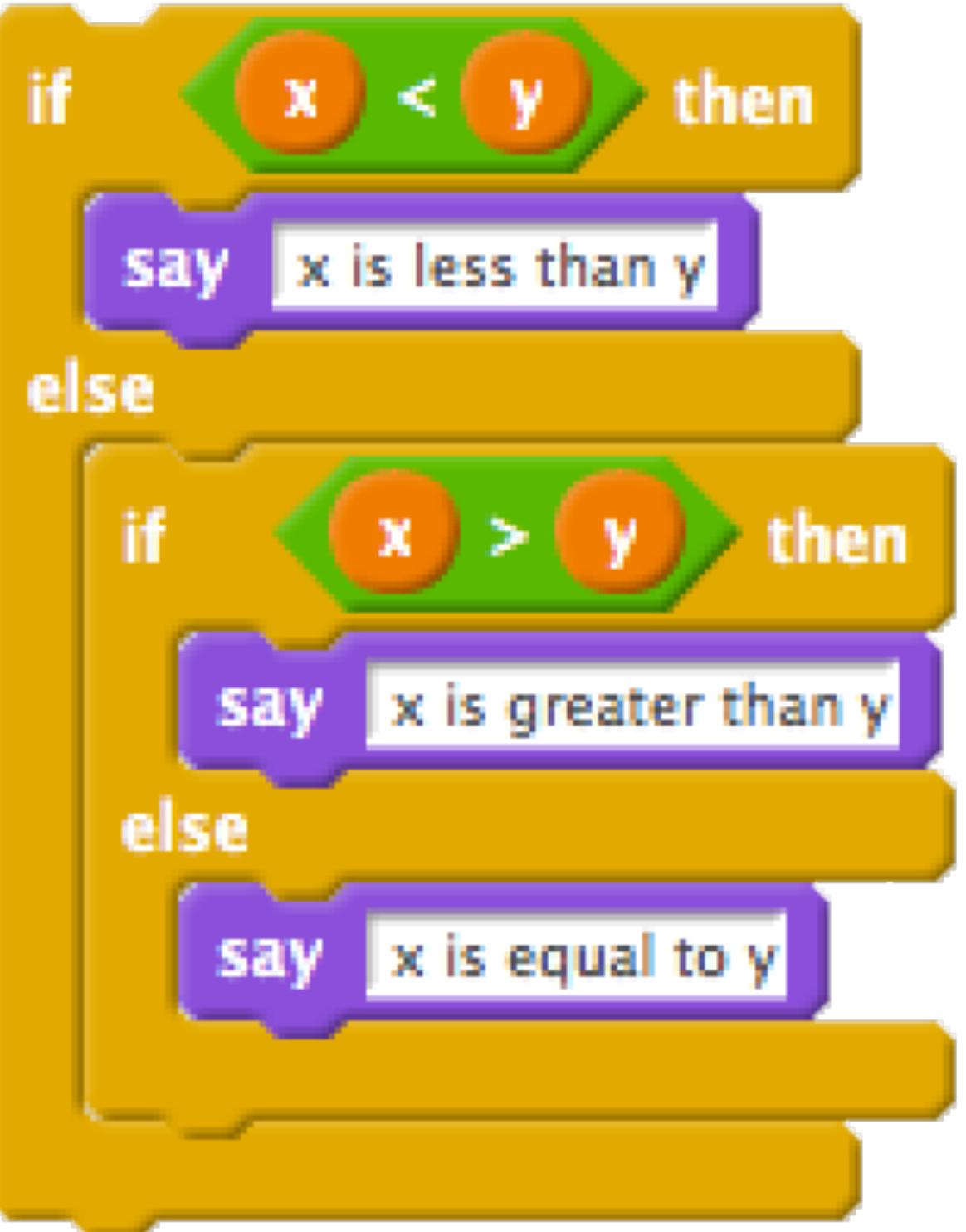
```
if (x < y)
{
    printf("x is less than y\n");
}
else if (x > y)
{
    printf("x is greater than y\n");
}
else
{
    printf("x is equal to y\n");
}
```



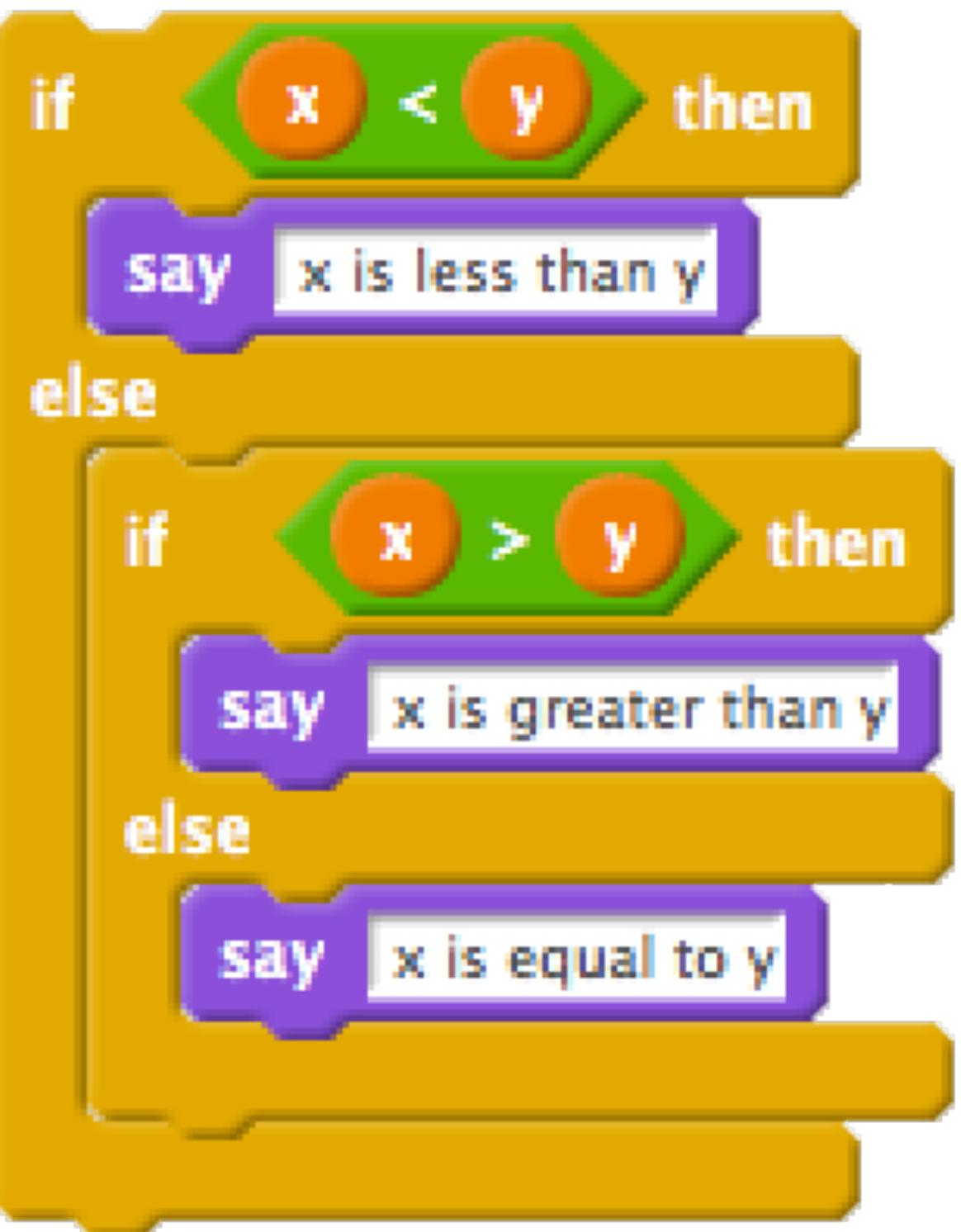
```
if (x < y)
{
    printf("x is less than y\n");
}
else if (x > y)
{
    printf("x is greater than y\n");
}
else
{
    printf("x is equal to y\n");
}
```



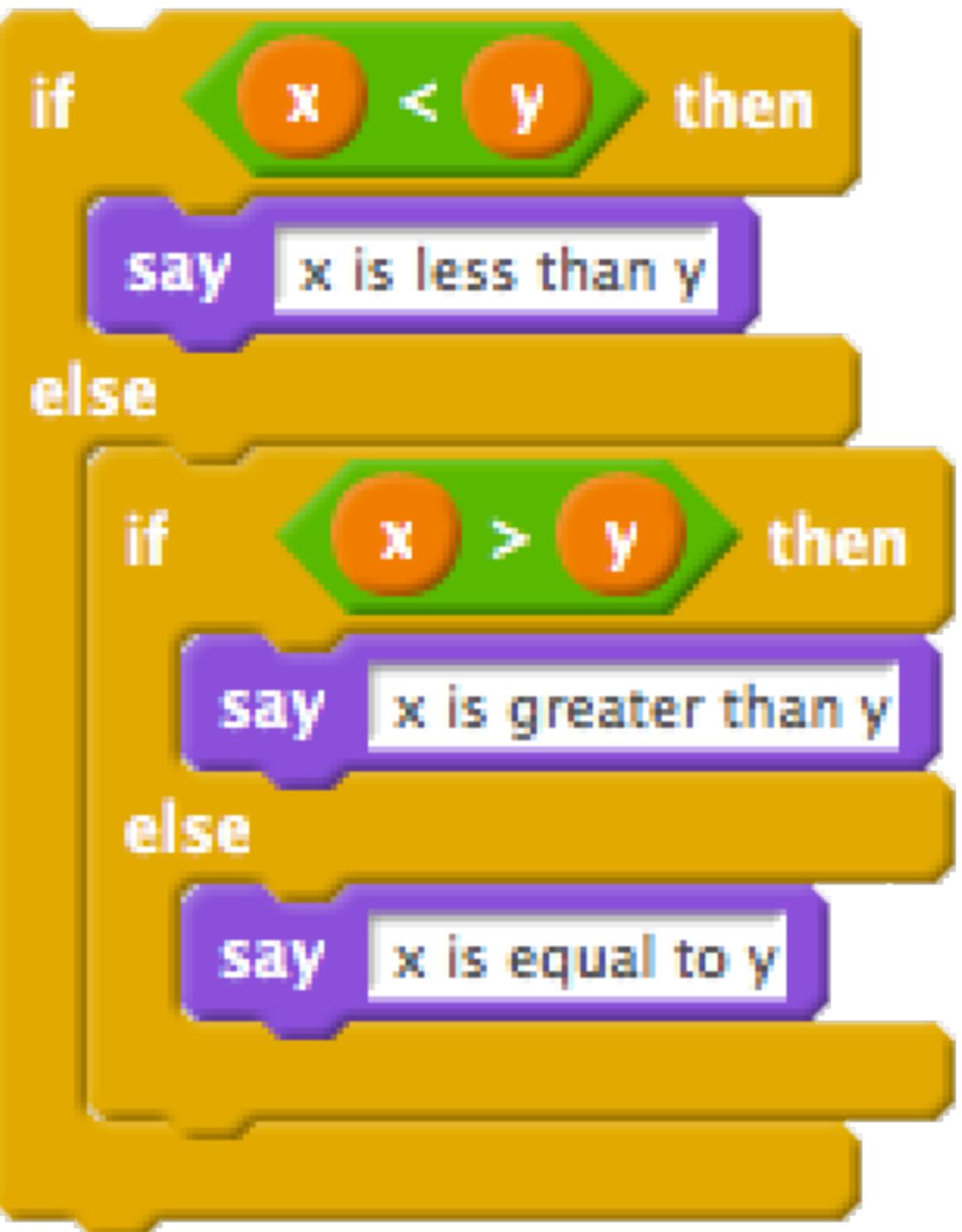
```
if (x < y)
{
    printf("x is less than y\n");
}
else if (x > y)
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    printf("x is greater than y\n");
}
else
{
    printf("x is equal to y\n");
}
```



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if (x < y)
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    printf("x is less than y\n");
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}
else
{
    printf("x is equal to y\n");
}
```



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if (x < y)
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    printf("x is less than y\n");
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else if (x > y)
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    printf("x is greater than y\n");
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else
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}
```



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if (x < y)
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    printf("x is less than y\n");
}
else if (x > y)
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}
else
{
    printf("x is equal to y\n");
}
```

```
#include <stdio.h>

int main(void)
{
    printf("hello, world\n");
}
```

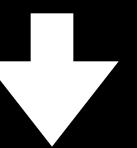
01111111	01000101	01001100	01000110	00000010	00000001	00000001	00000001	00000000
00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
00000010	00000000	00111110	00000000	00000001	00000000	00000000	00000000	00000000
10110000	00000101	01000000	00000000	00000000	00000000	00000000	00000000	00000000
01000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
11010000	00010011	00000000	00000000	00000000	00000000	00000000	00000000	00000000
00000000	00000000	00000000	00000000	01000000	00000000	00111000	00000000	00000000
00001001	00000000	01000000	00000000	00100100	00000000	00100001	00000000	00000000
00000110	00000000	00000000	00000000	00000101	00000000	00000000	00000000	00000000
01000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
01000000	00000000	01000000	00000000	00000000	00000000	00000000	00000000	00000000
01000000	00000000	01000000	00000000	00000000	00000000	00000000	00000000	00000000
11111000	00000001	00000000	00000000	00000000	00000000	00000000	00000000	00000000
11111000	00000001	00000000	00000000	00000000	00000000	00000000	00000000	00000000
00001000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
00000011	00000000	00000000	00000000	00000100	00000000	00000000	00000000	00000000
00111000	00000010	00000000	00000000	00000000	00000000	00000000	00000000	00000000
00111000	00000010	01000000	00000000	00000000	00000000	00000000	00000000	00000000
00111000	00000010	01000000	00000000	00000000	00000000	00000000	00000000	00000000
00011100	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000

...

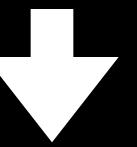
source code

machine code

source code



compiler



machine code

CS50 IDE

cs50.io

The screenshot shows the CS50 IDE interface. At the top, there's a browser bar with the URL <http://cs50.io/>. Below it is the menu bar with options: CS50 IDE, File, Edit, Find, View, Go, Window, Support. On the right side, there's a small cat icon and three tabs: Outline and Debugger.

In the center, there's a code editor window titled "hello.c". The file contains the following C code:

```
1 #include <stdio.h>
2
3 int main(void)
4 {
5     printf("hello, world\n");
6 }
```

To the left of the code editor is a sidebar showing the workspace directory structure: `~/workspace` with a single file `hello.c`.

At the bottom, there's a terminal window titled "workspace/" with the prompt `~/workspace/ $`.

The screenshot shows the CS50 IDE interface. At the top, there's a browser-like header with a red, yellow, and green window control buttons, the title "CS50 IDE", and a URL bar displaying "http://cs50.io/". Below this is a dark-themed menu bar with "CS50 IDE", "File", "Edit", "Find", "View", "Go", "Window", and "Support". A small cat icon is visible in the top right corner.

The main workspace is titled "hello.c" and contains the following C code:

```
1 #include <stdio.h>
2
3 int main(void)
4 {
5     printf("hello, world\n");
6 }
```

To the left of the editor is a sidebar showing a folder icon and the path "~workspace". Below the editor is a terminal window titled "workspace/" with the command line prompt "~workspace/ \$".

On the right side of the interface, there are three vertical tabs: "Outline", "Debugger", and another tab which is partially visible.

clang hello.c

./a.out

```
clang -o hello hello.c
```

```
./hello
```

make hello

./hello

`cd`

`ls`

`mkdir`

`rm`

`rmdir`

`...`

`get_char`

`get_double`

`get_float`

`get_int`

`get_long_long`

`get_string`

...

bool

char

double

float

int

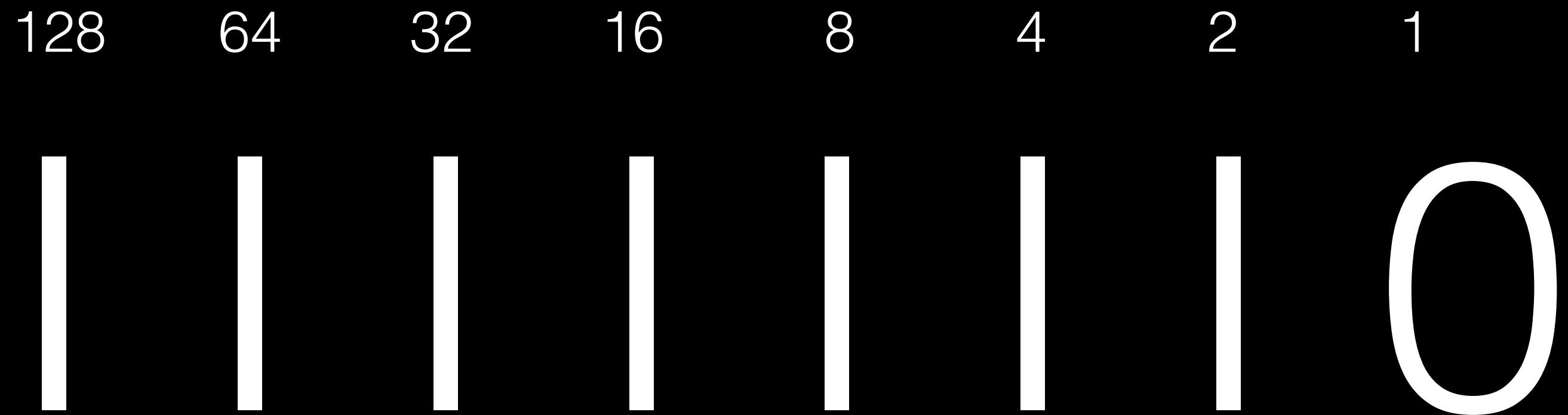
long long

string

...



integer overflow



128

64

32

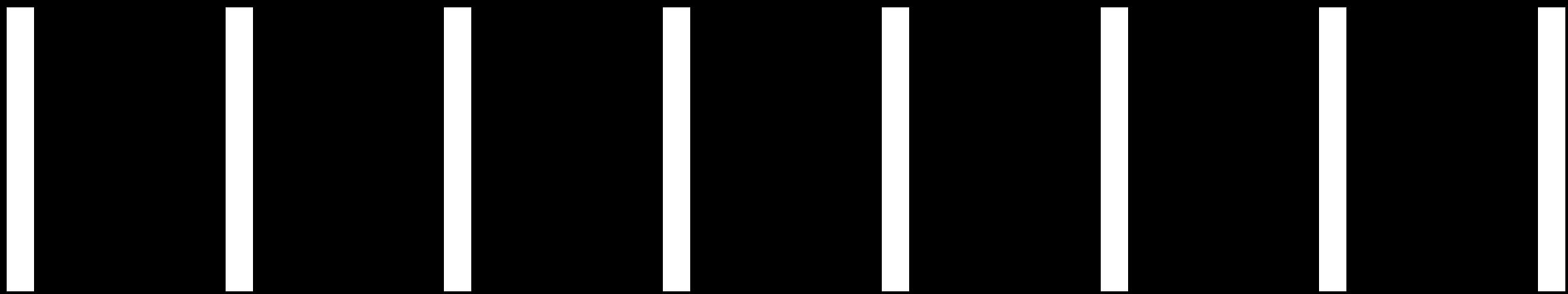
16

8

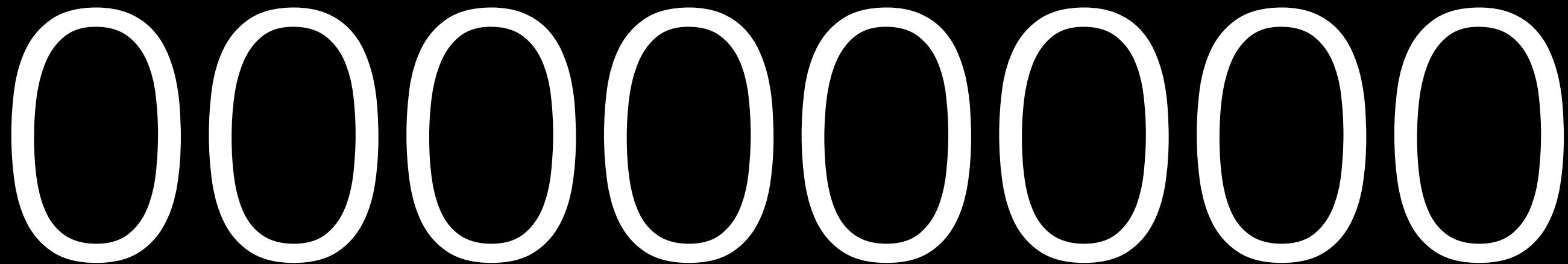
4

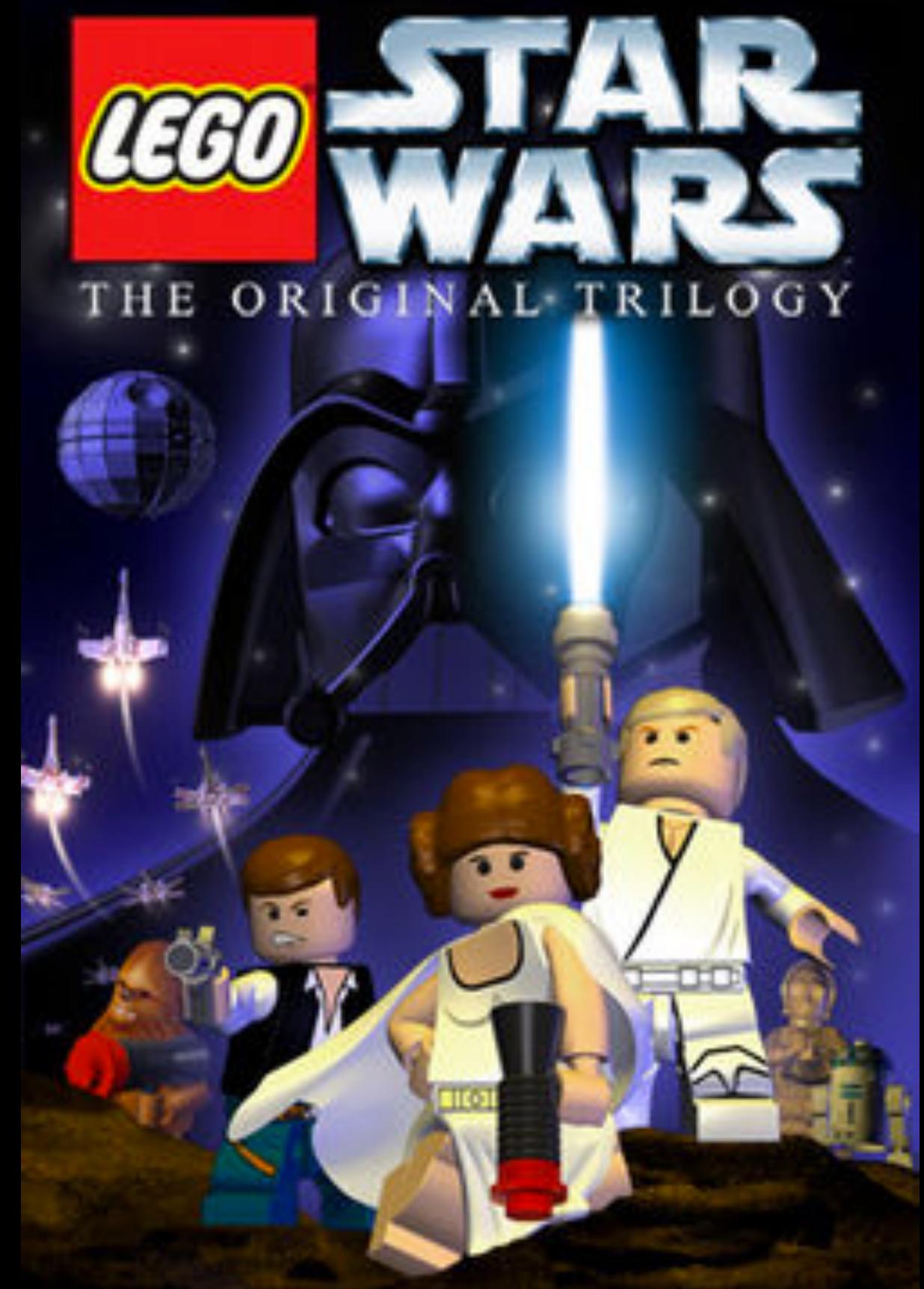
2

1



128 64 32 16 8 4 2 1







B **Dad's**
A **Green**

4,000,000,000





floating-point imprecision

integer overflow



Greetings from Mr. Gandhi, ruler
and King of the Indians...
Our words are backed
with NUCLEAR WEAPONS!



