

▼ Review

```
import random
```

<https://docs.python.org/3/library/random.html>

```
random.randint(a, b)
```

Return a random integer N such that $a \leq N \leq b$.

```
dice1 = random.randint(1, 6)
print(dice1)
```

4

```
dice2 = random.randint(1, 10)
print(dice2)
```

📄 8

```
total = dice1 + dice2
print(total)
```

12

```
dice1 = random.randint(1, 6)
dice2 = random.randint(1, 6)
guess = (dice1 + dice2)
# tell me your guess?
# what are the possible number in guess..
```

```
print(guess)
```

4

```
import random
dice1 = random.randint(1, 6)
dice2 = random.randint(1, 6)
guess = (dice1 * dice2)
print(guess)
# tell me your guess?
# what are the possible number in guess..
```

12

```
for i in range(50):
    dice1 = random.randint(1, 6)
```

```
dice2 = random.randint(1, 6)
guess = (dice1 * dice2)
# tell me your guess?
# what are the possible number in guess..
print(guess)
```

```
2
4
1
30
6
12
2
6
4
16
30
12
4
4
12
36
5
9
30
2
6
6
6
6
6
20
8
8
24
4
6
2
15
10
15
15
3
10
10
8
15
1
20
3
24
4
6
18
6
20
```

▼ List

We all have make our micro:bit step counter... So we will have our step records, 6000 steps, for Monday, 5432 steps on Tuesday... How can we store them? As we may add them together?

```
step_count_records = [] # this is an empty list.
```

```
step_count_records.append(6000)
print(step_count_records)
```

```
[6000]
```

```
step_count_records.append(5432)
print(step_count_records)
```

```
[6000, 5432]
```

```
step_count_records.append(8790)
print(step_count_records)
```

```
[6000, 5432, 8790]
```

This is a bit of boring... we have seven days in a week!!

```
# this is a list of string, and we can create a new list like this:
list_of_days = ["Mon", "Tue", "Wed", "Thu", "Fri", "Sat", "Sun"]
print(list_of_days)
```

```
['Mon', 'Tue', 'Wed', 'Thu', 'Fri', 'Sat', 'Sun']
```

```
# btw, an element of a list can be got by its ID like this:
print(list_of_days[4])
```

```
Fri
```

▼ Wait!! Something wrong with the ID!!

Always remember: ID starts with 0!!

▼ Let's see how "loop" can help us

```
for day in list_of_days:
    print(day)
```

```
Mon
Tue
Wed
Thu
Fri
Sat
Sun
```

We need some fake data, LoL...

```
import random
```

```
min_steps = 4000
max_steps = 12000
fake_record = random.randint(min_steps, max_steps)
fake_record
```

```
11191
```

```
for day in list_of_days:
    fake_record = random.randint(min_steps, max_steps)
    print(day, ": ", fake_record)
```

```
Mon : 6146
Tue : 6916
Wed : 11249
Thu : 11608
Fri : 6993
Sat : 4882
Sun : 11213
```

we will put the fake record in to a list now:

```
step_count_records = []
for day in list_of_days:
    fake_record = random.randint(min_steps, max_steps)
    step_count_records.append(fake_record)
    print(day, ": ", fake_record)
```

```
Mon : 11846
Tue : 8015
Wed : 7031
Thu : 5174
Fri : 11794
Sat : 9631
Sun : 8790
```

```
print(step_count_records)
```

```
[11846, 8015, 7031, 5174, 11794, 9631, 8790]
```

- ▼ Question, how to add them together? We want to see who did the most steps in a week!!

We will use what we learned last week, adding thing together.

```
total_steps = 0

for record in step_count_records:
    total_steps += record

print(total_steps)

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```

- ▼ Could you tell me who got the most steps in a week?

Double-click (or enter) to edit

Double-click (or enter) to edit

```
for i in range(30):
    print(i)

0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
```

23
24
25
26
27
28
29

▼ Lab: Music Player

```
p1 = ['c4:3', 'c:1', 'd:4', 'c:4', 'f', 'e:8']
p2 = ['c:3', 'c:1', 'd:4', 'c:4', 'g', 'f:8']
p3 = ['c:3', 'c:1', 'c5:4', 'a4', 'f', 'e', ]
p4 = ['d', 'a#:3', 'a#:1', 'a:4', 'f', 'g', 'f:8']
```

```
p1 = ['c4:2', 'c:2', 'd:4', 'c:4', 'f:4', 'e:8']
p2 = ['c4:2', 'c:2', 'd:4', 'c:4', 'g:4', 'f:8']
p3 = ['c4:2', 'c:2', 'c5:4', 'a4:4', 'f:4', 'd:8']
p4 = ['d', 'a#:3', 'a#:1', 'a:4', 'f', 'g', 'f:8']
```

```
p1 = ['f#1:4', 'g1:4', 'g#1:4', 'a1:4', 'g#:' ]
```

```
from microbit import *
import music
```

```
p1 = ['c4:2', 'c:2', 'd:4', 'c:4', 'f:4', 'e:8']
p2 = ['c4:2', 'c:2', 'd:4', 'c:4', 'g:4', 'f:8']
p3 = ['c4:2', 'c:2', 'c5:4', 'a4:4', 'f:4', 'd:8']
p4 = ['r:4', 'bb:2', 'bb:2', 'a:4', 'f:4', 'g', 'f:12']
```

```
happy_birthday = [p1, p2, p3, p4]
for p in happy_birthday:
    music.play(p)
```

