

# Python Week 3

Coding leads - November 2023

# Let's build a coin flipping game?

Coin flipping game.

Guess if it's heads or tails.

Start with £5, lose £2 every time you are wrong, gain £1 every time you are right.

Write a function to get the guess from the user (hint: input)

Write a function to flip the coin (random)

If guess = coin toss -> increase winnings.

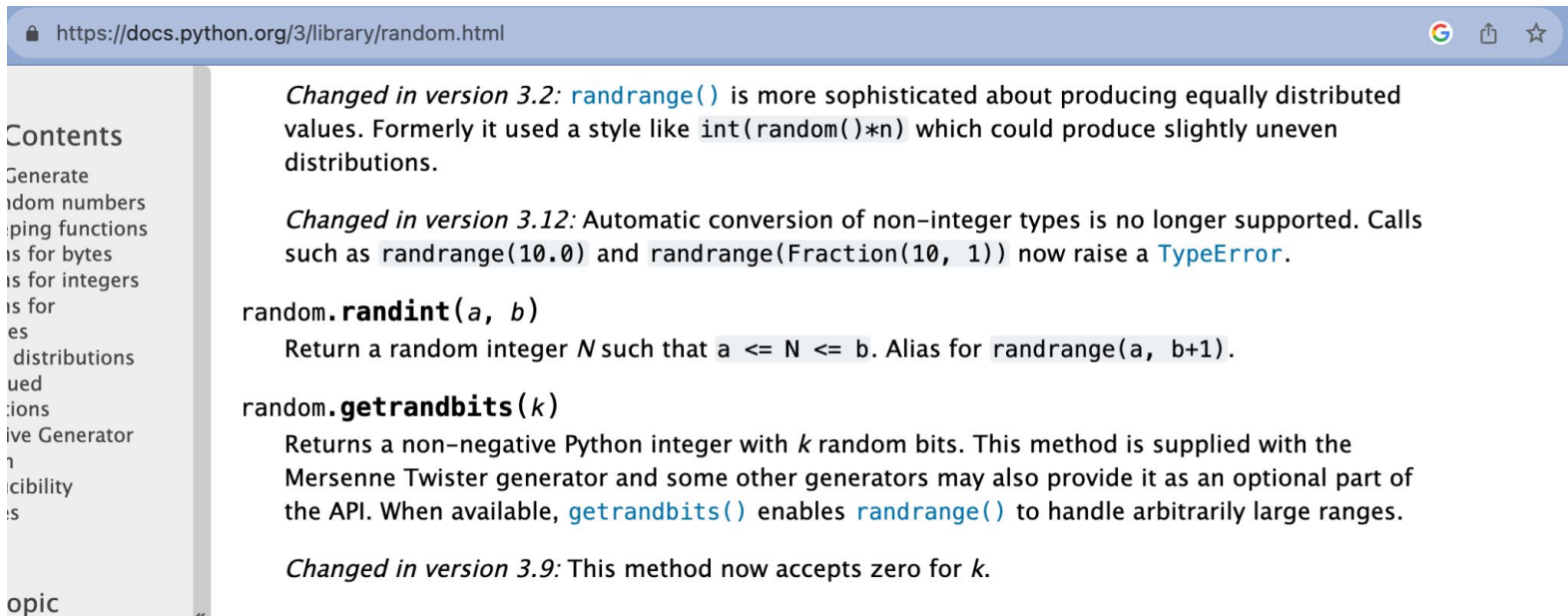
Write a function to increase winnings, which can also end the game when winnings reach 0.

```
input("What's your guess?")
```

Note - you need double quotes for the string here because there's an apostrophe.

# Generate a random number

```
import random
random.randint(1,2)
```



The screenshot shows a web browser window with the URL <https://docs.python.org/3/library/random.html>. On the left is a 'Contents' sidebar with a tree view. The main content area contains two paragraphs of text and two function definitions.

**Contents**

- Generate random numbers
- Mapping functions
- is for bytes
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**Changed in version 3.2:** `randrange()` is more sophisticated about producing equally distributed values. Formerly it used a style like `int(random()*n)` which could produce slightly uneven distributions.

**Changed in version 3.12:** Automatic conversion of non-integer types is no longer supported. Calls such as `randrange(10.0)` and `randrange(Fraction(10, 1))` now raise a `TypeError`.

**`random.randint(a, b)`**  
Return a random integer  $N$  such that  $a \leq N \leq b$ . Alias for `randrange(a, b+1)`.

**`random.getrandbits(k)`**  
Returns a non-negative Python integer with  $k$  random bits. This method is supplied with the Mersenne Twister generator and some other generators may also provide it as an optional part of the API. When available, `getrandbits()` enables `randrange()` to handle arbitrarily large ranges.

**Changed in version 3.9:** This method now accepts zero for  $k$ .

From python docs

# Dice Game

Ask a user if the dice roll will be higher or lower than a random number (in the same bounds as the dice, so for 1 die 1-6, for 2 dice 2-12, etc.).

Then roll the dice and display whether the user was right or wrong.

Let this loop 5 times and display at the end of the game how many games were won in total and a scoreboard of which games were won and which ones were lost.

Output example:

“Higher or Lower than 4”

- Lower

“You won. The dice rolled 3”

... repeat 5 times.

“You won a total of 3 games. You won game 1, 2, 4”

# To-do List

Use an array to make a list of tasks to do (e.g. homework tasks).

Write a function to print out all the tasks.

Write a function to remove a task from the array when it is done.

# Resources

<https://docs.python.org/3/>

<https://www.w3schools.com/>

[Freecodecamp.org](https://www.freecodecamp.org/)

## **Our GitHub:**

<https://github.com/Shadyabu/EngAndTechSociety>

# Downloading. We recommend (all free):

**IDEs** - nice interfaces to write your code, run your code

<https://code.visualstudio.com/>

Supports many different languages

<https://www.jetbrains.com/community/education/#students>

Free for students.

They have different apps for different languages.

**Installing python and relevant packages / libraries** (specific things e.g. for machine learning, plotting graphs, draw things)

<https://brew.sh/>

Installing python and packages on macOS

<https://www.anaconda.com/>

Also has Jupyter notebooks