random (class slides)

CSC 110 – Generating Random Numbers and Other Important Functions and Methods

random module

We need to `import` the module `random`

What do the functions `.random()` and `.randint()` return?

```python
import random

n = random.random()
print(n)

n = random.randint(0, 9)
print(n)
```

```
0.2731686042483684
8
```

Write a function

1. Function name is `pick_winner`
2. It takes a list as argument
3. It generates a random index, and returns the item at that position

```python
winner = pick_winner(["Peter", "Joan", "Mary", "June"])
print(winner)
```

Write a function – solution

```python
import random

def pick_winner(names):
    index = random.randint(0, len(names) - 1)
    return names[index]

if __name__ == "__main__":
    winner = pick_winner(["Peter", "Joan", "Mary", "June"])
    print(winner)
```

```
Peter
```

Setting a seed

What happens when you run `pick_winner` multiple times?

To get always the same result (for autograding purposes, for example) we can set a seed.

```python
import random

def pick_winner(names):
    index = random.randint(0, len(names) - 1)
    return names[index]

if __name__ == "__main__":
    random.seed(123)
    winner = pick_winner(["Peter", "Joan", "Mary", "June"])
    print(winner)
```

```
Peter
```

Changing a list with random numbers

Write a function that takes as argument a list of integers. Iterate over each list element (with a `while` loop), replacing each integer with a random number between zero and the original integer.

Test case:

```
numbers = [3, 2, 1, 3, 5]
numbers = random_list(numbers)
print(numbers)
```

```
[0, 1, 0, 3, 2]
```