

About Lab 11

In Lab 11 you need to write 3 programs:

1. Program `hello.py` has the usual `Hello(name)` function. The program asks the user for a name and a number `n`. It then creates `n` processes to run the `Hello()` function with that name.

2. Program `monte.py` (short for Monte Carlo) looks back to Lab 3, where you did a probabilistic estimate of π : you "threw darts" at a circle of radius 1 inside a box of side 2; the ratio of the number of darts that landed inside the circle to the number throws is an estimate of $\pi/4$. In program `monte.py` you write a function that takes in a number n of darts and returns the number that hit the circle. You should ask the user for a number n of processes, and divide 100,000,000 throws into n groups. At the end you sum up the total number of hits, divide by 100,000,000 and multiply by 4 and that is an estimate of π .

This program makes a typical use of process pools. You will also time how long it takes to throw those 100,000,000 darts. Structurally your program should look a lot like [ThirdPoolExample.py](#)

3. In the third program you make a simple bank Account class. What is not so simple is that you make the constructor for the class take a RawValue that will act as the balance and a Lock(). Save these as instance variables. Then, when a customer deposits or withdraws from the account you use the lock to synchronize the processes so only one can be accessing the balance at a time.

The "customers" are processes that make random deposits and withdrawals.