

1 Functions Learned

Do	While	Increment(++)	Input	For	+=, *=
Nest	NestList	NestWhile	NestWhileList	FixedPointList	LengthWhile
TakeWhile	Fold	FoldList	Accumulate	Sequence	Rule

2 Problems

From electronic text

- Problem 7.1 (For whatever reason, the `Print` statement contains an `i` instead of an `n`. Also, they use the variable `prime60`, which should obviously be `prime30`.)
- Problem 7.2 (The book's solution is not exactly correct. Notice that the problem states that we should be looking for primes starting at $n = 0$, but the book's solution starts at $n = 1$. In other words, the book selects the first **positive** number n such that $n^2 + n + i$ is not prime for each $1 \leq i \leq 10000$, but should actually be selecting the first **non-negative** number. For example, when $i = 1$, the book's code returns 4 because $1^2 + 1 + 1 = 3$, $2^2 + 2 + 1 = 7$, $3^2 + 3 + 1 = 13$ are prime, but $4^2 + 4 + 1 = 21$ is not. However, the code should return 0 because $0^2 + 0 + 1 = 1$ is not prime. The same problem occurs frequently for other values of i as well (e.g. $i = 1, 4, 6, 8, 9, 10, \dots$). Your code should fix this issue. Additionally, I feel that the coding of this problem is quite clunky and hard to modify to answer the question posed in Exercise 7.1. For a slicker approach, use `AppendTo` or check out `Reap` and `Sow`.)
- Exercise 7.1
- Problem 7.3
- Problem 7.4
- Problem 7.5
- Problem 7.6
- Problem 7.7
- Exercise 7.2
- Problem 7.8
- Problem 7.9
- Problem 7.10
- Problem 7.11
- Exercise 7.3 (This exercise is not reasonable to compute as written. Using the code from Problem 7.11, you should restrict your search to pairs of numbers taking values between 88000 and 91000.)
- Exercise 7.4
- Exercise 7.5
- Exercise 7.6
- Problem 7.12
- Problem 7.13
- Exercise 7.7
- Problem 7.14
- Problem 7.15
- Problem 7.16
- Exercise 7.8 (Your solution should work for any fixed k .)
- Exercise 7.9 (This problem is begging for you to use `NestWhileList`.)