Practical Optional Types for Clojure

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Outline

Make Titles Informative. Use Uppercase Letters.

Subtitles are optional.

- ▶ Use itemize a lot.
- Use very short sentences or short phrases.

- ▶ using the pause command:
 - First item.
 - ▶ Second item.
- using overlay specifications:
 - First item.
 - Second item
- using the general uncover command:
 - First item.
 - Second item.

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Definition

A prime number is a number that has exactly two divisors.

- ▶ 2 is prime (two divisors: 1 and 2).
- ▶ 3 is prime (two divisors: 1 and 3).
- ▶ 4 is not prime (three divisors: 1, 2, and 4).

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There Is No Largest Prime Number

The proof uses *reductio* ad absurdum.

Theorem

There is no largest prime number.

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Proof.

- 1. Suppose *p* were the largest prime number.
- 2. Let q be the product of the first p numbers.
- 3. Then q + 1 is not divisible by any of them.
- 4. But q + 1 is greater than 1, thus divisible by some prime number not in the first p numbers.

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What's Still To Do?

Answered Questions

How many primes are there?

Open Questions

Is every even number the sum of two primes?

What's Still To Do?

Answered Questions How many primes are there?

Open Questions

Is every even number the sum of two primes?[?]

What's Still To Do?

Answered Questions

How many primes are there?

Open Questions

Is every even number the sum of two primes? $\cite{[?]}$

```
int main (void)
  std::vector<bool> is_prime (100, true);
  for (int i = 2; i < 100; i++)
    if (is_prime[i])
        std::cout << i << " ":
        for (int j = i; j < 100; is prime [j] = false, j+=i);
return 0; }
```

Note the use of std::

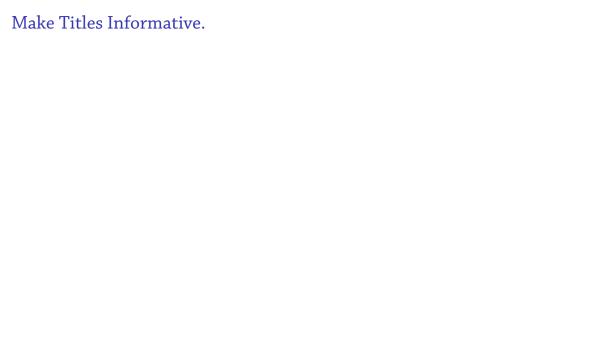
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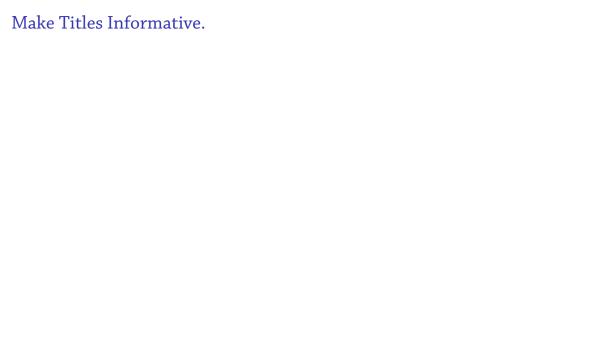
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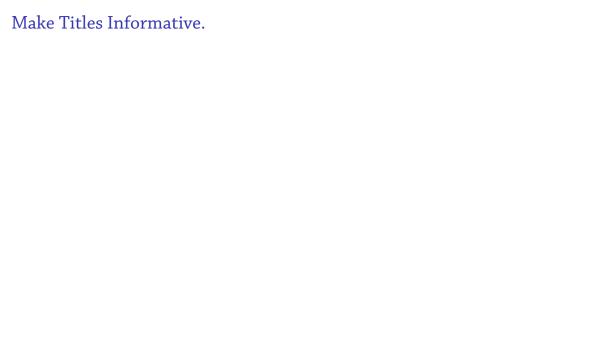
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Summary

- ▶ The first main message of your talk in one or two lines.
- ► The second main message of your talk in one or two lines.
- Perhaps a third message, but not more than that.

- Outlook
 - Something you haven't solved.
 - Something else you haven't solved.

For Further Reading I



A. Author.

Handbook of Everything.

Some Press, 1990.



S. Someone.

On this and that.

Journal of This and That, 2(1):50–100, 2000.



A problem we should try to solve before the ISPN '43 deadline, *Letter to Leonhard Euler*, 1742.