

# Program 1 Design

Assignment: Open "data.txt" print all integer tokens in sorted order.

# Pseudocode (big picture)

```
open file
if file opened
    read tokens
    sort tokens
    print tokens
else
    report error
```

# Pseudocode (more detail)

```
open file
if file opened
    while tokens remain to be read
        if token can be read as int
            add int to array
        else
            throw away token
    sort tokens
    print tokens
else
    report error
```

# Pseudocode (more detail)

```
open file
if file opened                                <== How do I know?
    while tokens remain to be read
        if token can be read as int
            add int to array                    <== What if full?
        else
            throw away token                    <== How?
    sort tokens                                <== How?
    print tokens
else
    report error
```

# Pseudocode (even more detail)

```
try
    open file
catch
    file = null
if file is open
    i = 0
    while tokens remain to be read
        if token can be read as int
            if array is full
                make new array double size, copy elements
            add int to array idx i
            i += 1
        else
            read token but do nothing with it
    Arrays.sort(indices 0..i)
    print tokens
else
    report error
```