Erratalist, Programming for Computations - Matlab/Octave

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0.1 Page 94, Section 4.1.3

The number of time points is one too many compared to the number stated in eqn. (4.8), so the text

Note that we need to compute $N_t + 1$ new values $N^1, ..., N^{N_t+1}$. A total of $N_t + 2$ values are needed in an array representation of $N^n, n = 0, ..., N_t + 1$.

should be replaced by

Note that we need to compute N_t new values $N^1, ..., N^{N_t}$. A total of $N_t + 1$ values are needed in an array representation of $N^n, n = 0, ..., N_t$.

Also, the corresponding code `growth1.m` suffers from the same error. So, the code lines

```
t = linspace(0, (N_t+1)*dt, N_t+2);
N = zeros(N_t+2, 1);
```

should be replaced by

```
t = linspace(0, N_t*dt, N_t+1);
N = zeros(N_t+1, 1);
```

Furthermore, after the code on p. 95, there is a comment in parenthesis that should now be skipped. It reads

(or to be absolutely precise, the last time point to be computed according to our set-up above is $t_{N_t+1} = 20.5$)

Finally, for the same reason, the plots in Figs. 4.4 - 4.6 show a graph that goes slightly outside the domain specified in the example, i.e. beyond t = 20. These plots should end at t = 20.

0.2 Page 106, Section 4.2.3

In the program `SIR1.m`, there is a typo in the comment of the code line

```
N_t = floor(D*24/dt);   % Corresponding no of hours
```

It should be replaced by

```
N_t = floor(D*24/dt);   % Corresponding no of time steps
```

0.3 Page 118, Section 4.2.6

In the program `demo_SIR.m`, there is a typo in the comment of the code line

```
N_t = floor(D*24/dt);   % Corresponding no of hours
```

It should be replaced by

```
N_t = floor(D*24/dt);   % Corresponding no of time steps
```

0.4 Page 32, Section 2.2

The line starting

It that case, ...

should be changed into

In that case, ...

0.5 Page 80, Exercise 3.4

The filename `integrate_sine.pdf` has wrong extension pdf. The filename should be `integrate_sine.m`.

0.6 Page 99, Section 4.1.6

In the middle of the page, the line

...so there is now ...

should be changed into

...so there is no ...

0.7 Page 180, Section 6.1.1

In the program `brute_force_root_finder_flat.m`, the `if` test is insufficient when y values are zero. The branch

```
if y(i)*y(i+1) < 0
    ...
    ...
```

should be followed by

```
elseif y(i) == 0
    root = x(i);
    break;  % Jump out of loop
end
```

0.8 Page 180, Section 6.1.1

In the program `brute_force_root_finder.m`, the `if` test is insufficient when y values are zero. The branch

```
if y(i)*y(i+1) < 0
    ...
    ...
```

should be followed by

```
elseif y(i) == 0
    root = x(i);
    roots = [roots; root];
end
```

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