ERRATA

• Page 15: The definition of composition is incorrect since e.g. the composition of \( \{X/a\} \) with itself results in \( \epsilon \) according to definition 1.20. The definition should be as follows:

Let \( \theta \) and \( \sigma \) be the substitutions

\[
\begin{align*}
\theta & := \{X_1/s_1, \ldots, X_m/s_m\}, \\
\sigma & := \{Y_1/t_1, \ldots, Y_n/t_n\}.
\end{align*}
\]

The composition \( \theta \sigma \) of \( \theta \) and \( \sigma \) is obtained by taking the union of

\[
\{X_1/s_1\sigma, \ldots, X_m/s_m\sigma\} \text{ and } \{Y_1/t_1, \ldots, Y_n/t_n\}
\]

after removing all \( X_i/s_i\sigma \) such that \( X_i = s_i\sigma \), and all \( Y_i/t_i \) such that \( Y_i \in \text{Dom}(\theta) \).

(Pointed out by Wlodek Drabent.)

• Page 96: All occurrences of \( t' \) should be replaced by \( n \).

• Page 236: The claim that naive(magic(\( P \))) terminates whenever naive(\( P \)) terminates is wrong! For instance, let \( P \) be:

\[
p(X) \leftarrow p(s(X)).
\]

• Solution 7.12: A correct(?) answer is:

\[
\begin{align*}
\text{msort([], []).} \\
\text{msort([X], [X]).} \\
\text{msort([X, Y|Xs], Ys) :-} \\
\quad \text{split(Xs,Split1,Split2),} \\
\quad \text{msort([X|Split1],Sorted1),} \\
\quad \text{msort([Y|Split2],Sorted2),} \\
\quad \text{merge(Sorted1,Sorted2,Ys).}
\end{align*}
\]

\[
\begin{align*}
\text{split([],[],[]).} \\
\text{split([X|Y], [X|V], W) :-} \\
\quad \text{split(Y,W,V).}
\end{align*}
\]

\[
\begin{align*}
\text{merge([], [], []).} \\
\text{merge([X|Xs], [X|Ys], [X|Ys]).} \\
\text{merge([X|Xs], [], [X|Xs]).} \\
\text{merge([X|Xs], [Y|Ys], [X|Zs]) :-} \\
\quad \text{X<Y,} \\
\quad \text{merge(Xs, [Y|Ys], Zs).}
\end{align*}
\]
merge([X|Xs], [Y|Ys],[Y|Zs]) :-
     X>=Y,
     merge([X|Xs], Ys, Zs).

(Error pointed out by Jørgen Fischer Nilsson and Morten Lindegaard.)

• **Page 166:** All occurrences of `prod_rule/1` should read `prod_rule/2`.
  (Pointed out by Jørgen Fischer Nilsson and Morten Lindegaard.)

• **Solution 6.5:** “≥” should read “≤”.
  (Pointed out by Jørgen Fischer Nilsson and Morten Lindegaard.)

• **Page 252:** The definition of a function is incorrect. Should read “...if whenever \( f(z,x) \) and \( f(z,y) \) then \( x = y \).”
  (Pointed out by Walter Vieira.)