March

March-24-08
10:15 AM

Most math manuscripts are like open source computer programs without any comments.
They are open (at least that), they compile and run, but they are impossible to understand.

The basic exact sequence for a CW-space $K=\bigcup K^{(n)}$, using the pair $(K^{(n)},K^{(n-1)})$:

can be shared.

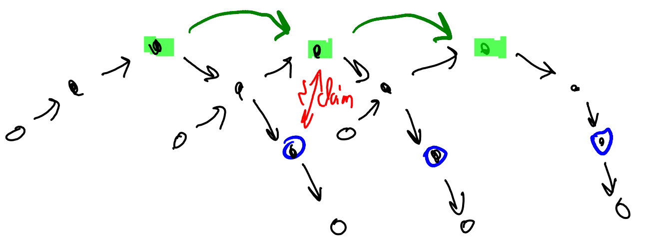
$$0 \longrightarrow H_n(K^{n-1}) \longrightarrow H_n(K^n) \longrightarrow \underset{\text{understood}}{H_n(K^n,K^{n-1})} \longrightarrow H_{n-1}(K^{n-1}) \longrightarrow H_{n-1}(K^n) \longrightarrow 0$$

$(H_{n+1}(K^n,K^{n-1}))$

$0 \cong H_n(K^{n-2}) \cong$ etc.

goal

$\cong H_{n-1}(K^{n+1}) \cong \dots$



Agenda for March 26:

1. Show a large commutative diagram to justify the degrees appearing in the differential.
2. Not to be justified claims:
   1. The same works in the infinite case
   2. The relative case.
   3. Cellular maps
   4. The cellular approximation theorem.
3. The exact seq of a triple.
4. The Mayer-Vietoris sequences.

$$H_n(K^n,K^{n-1}) \xrightarrow{\partial} H_{n-1}(K^{n-1}) \longrightarrow H_{n-1}(K^{n-1},K^{n-2})$$

$$
\begin{tikzcd}
{} \arrow[d, leftrightarrow] & & {} \arrow[d, leftrightarrow] \\
H_n(K^n, K^{n-1}_\epsilon) & & H_{n-1}(K^{n-1}, K^{n-1}_\epsilon) \\
H_n(K^n - K^{n-1}, K^{n-1}_\epsilon - K^{n-1}) \arrow[u] & & H_{n-1}(K^{n-1} - K^{n-2}, K^{n-1}_\epsilon - K^{n-2}) \arrow[u] \\
& & H_{n-1}(D^{n-1}_\tau, S^{n-2}_\tau) \arrow[u] \arrow[d] \\
H_n(D^n_\sigma, S^{n-1}_\sigma) \arrow[uu] \arrow[r, "\partial", "\sim"'] & H_{n-1}(S^{n-1}_\sigma) \arrow[dr, "(p_\tau \circ f_{\partial\sigma})_*"'] & H_{n-1}(S^{n-1}_\tau, D^{n-1}_{+\tau}) \\
& & H_{n-1}(S^{n-1}_\tau) \arrow[u]
\end{tikzcd}
$$

start

finish