③ M complex manifold.
a meromorphic function f on an open set $U \subset M$ is given locally as the quotient of two holomorphic functions.

i.e for some covering $\{U_i\}$ of U, $f|_{U_i} = g_i/h_i$, where g_i, h_i relatively prime in $\mathcal{O}(U_i)$ and $g_i/h_i = \frac{g_j}{h_j}$ in $\mathcal{O}(U_i \cap U_j)$.

The sheaf of meromorphic functions on M is denoted by $\mathcal{M}$; the multiplicative sheaf of meromorphic functions not identically zero is denoted $\mathcal{M}^*$.

Def: $\mathcal{F}$ presheaf of X. $p \in X$.
we define the stalk $\mathcal{F}_p$ of $\mathcal{F}$ at p to be the direct limit of the groups $\mathcal{F}(U)$ for all open set U containing p, via the restriction map ρ.

Thus an element of $\mathcal{F}_p$ is represented by a pair of $\langle U, s \rangle$, where U is an open nbd of p and s is an element $\mathcal{F}(U)$. Two such pairs $\langle U, s\rangle$ and $\langle V, t\rangle$ define the same element of $\mathcal{F}_p$ $\Leftrightarrow$ there is an open nbd W of p with $W \subset U \cap V$ s.t $s|_W = t|_W$.

$\Rightarrow$ We may speak of elements of the stalk $\mathcal{F}_p$ as germs of sections of $\mathcal{F}$ at the point p.

See M. Greenberg Algebraic top. ~~A first course~~
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$$\mathcal{F}(U) \xrightarrow{\rho_{U,V}} \mathcal{F}(V) \xrightarrow{\rho_{V,W}} \mathcal{F}(W) \; --- \quad \varinjlim_{U \ni p} \mathcal{F}(U) = \mathcal{F}_p$$

$$U \cap V \cap W \ni p$$