Barnali: Why does this happen?

Open covers of a scheme

Given a scheme X, suppose $U_i \rightarrow X$ is a collection of	open	subschemes
such that $U = \sqcup_i U_i o X$ is a sheaf-theoretic surjection	on.	

We say that such a collection is a *Zariski open cover* of X.

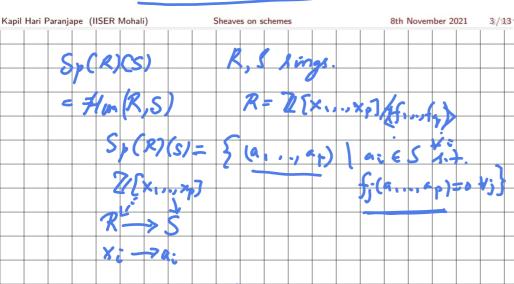
Let us clarify what this means in the case of an affine scheme X = Sp(R).

Since each U_i is an open subscheme of Sp(R), there is an ideal I_i in R such that $U_i = Q(R, I_i)$ is the scheme-theoretic complement of $Sp(R/I_i)$.

Let J be the ideal in R generated by the ideals I_i as i varies.

If the ideal J is proper, then $Sp(R/J) \rightarrow Sp(R)$ is an element of Sp(R)(R/J). However the image of I_i in R/J is $\{0\}$ for all *i*. Thus, this element is *not* in the image of $\sqcup_i U_i$.

How it is the element of SP(R) (R/J)?



R -> R/J notil 1 on to an elt. 9 Sp (2) (R/J)