Erratta to Aug 28:

In order for all obj. in an abelian cat $\mathcal{C}$ to have comp. series $\mathcal{C}$ must be both Artinian and Noetherian. So, in the statement of [Prop 4, Aug 28], which char semisimpleness via ext. of simples, we should replace "Let $\mathcal{C}$ be Artinian" with "Let $\mathcal{C}$ be Artinian and Noetherian". It is in the Art + Noeth setting that all objects have specified lengths and composition factors. We note that all finitary Art. cats are already Noeth. as well:

Ex 1: The cat Vect of finite-dim vect spaces is both Art. and Noeth.

Ex 2: The cat A-mod$_{fg}$ of fin-dim modules over any $\mathbb{C}$-alg A is both Art and Noeth.

Ex 3: The cat R-mod$_{fg}$ of fin. gen mods over an Artinian ring R is both Art. and Noeth.

Ex 4: The cat rep($\mathfrak{g}$) of fin-dim $\mathfrak{g}$-repns, for any Lie alg $\mathfrak{g}$ is both Art. and Noeth.

Anti-Ex 5: The opposite cat $(\mathbb{C}[x]\text{-mod}_{fg})^{op}$ is Artinian but not Noeth.

Many fin. constructions hold for Examples 1, 2, 4 for simple dimensional reasons.