There are two ways to index a string so that a program can meet different performance requirements. When performance is a priority, we can use [] to index strings, but the programmer need to carefully examine the code to prevent any potential errors. If performance is not required, it makes more sense to use at() so that the program throws an exception when there is an error which makes debugging much easier.

I think the design choice of using [] for performance and at() for safety is to align with other programming languages. For indexing, it is more natural and common to use [] so that a programmer with experience in other languages but little C++ experience can also understand it easily. Also many C++ programs are designed to maximize performance so using [] as the default seems to be the better choice.