Assignment 2  
The intercept in a linear regression model is the value where the target variable, given in this example as "Life Expectancy", can be predicted if all predictor variables equal zero. This acts like a baseline value or where the regression line starts. For instance, in this discussion, the intercept provides an estimate of life expectancy for a theoretical scenario where the average years of schooling in a country is zero. But this is probably an unrealistic scenario since the training set likely did not include countries with precisely average years of schooling zero, and such an extreme value may lie outside the range of observed data.  
  
That could lead to interpretations of dubious or even nonsensical validity. Life expectancy is affected by many factors, such as healthcare, nutrition, and socioeconomic conditions, which are usually related to the level of education. A country with zero years of schooling would probably be in a completely different context than the countries included in the data, making the model's prediction for this case not reliable. The intercept is mathematically required for the regression equation, but it may be less practically meaningful when dealing with predictor values not observed or realistic.  
  
Hence, although the intercept gives a baseline prediction, it needs to be carefully interpreted. The meaningful description of the relationship between schooling and life expectancy is obtained using the slope of the regression line within the range of data observations. Use the intercept to interpret extreme or hypothetical cases that fall out of the range of data for which the model was created as the model assumptions may not be good enough in such situations or the model's accuracy might fail.  
Github - https://github.com/Emily-rk/AIML