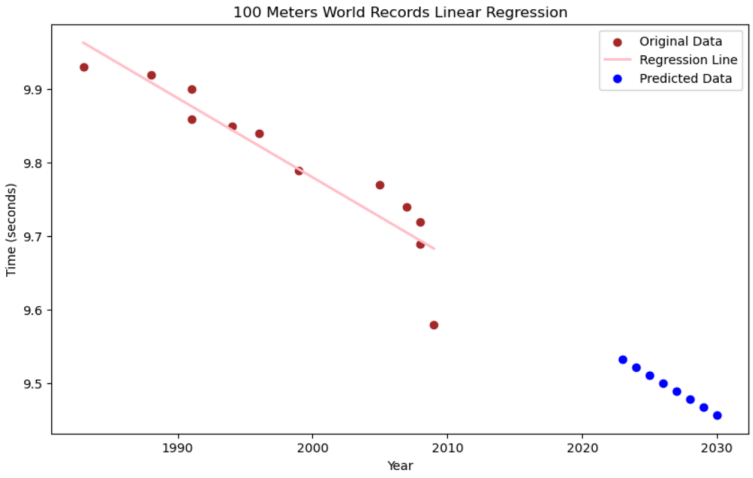
Introduction:

The 100-meter race has been a well-known event since the beginning of sporting competition and the Olympic Games, requiring competitors to run a specific distance as quickly as they can. Thanks to science and technology, athletes have had the chance to realise their full potential throughout the century in order to set records and improve their chances of winning. This study examines how the world record for the 100-meter male athlete developed between 1983 and 2009. To do this, we evaluated and projected the possible world record for 2023–2030 using statistical techniques like linear regression. The goal is to find if the male performance has increased by using a straightforward line.

Methods:

Python and imported libraries were used to construct a data set from the Wikipedia data, which was then used for the analysis portion. To find a linear regression summary, those techniques are essential.

Results:

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Linear Regression Summary:
Intercept (b0): 31.31
Coefficient (b1): -0.01

R-squared value: 0.8602
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Time = 31.31 - (0.01) Year

Given the data, which show that the intercept (b0) is equal to 31.31 and the coefficient (b1) is equal to -0.01, describe the graph's declining trend. with 0.8602 as the R-squared value

Discussion:

A clear correlation between year and time is seen from the regression model. The slope of our line is negative, at -0.01, as can be seen from the graph and the linear regression summary above. This indicates that male athletes' performance improved over the course of the year, supporting our conclusion that players were faster. According to the R-squared value, the model fits the data quite well, and the year alone accounts for 86% of the variation in record times. Given that athletes today have greater access to technology and individualised training that empowers them to assist themselves, all of this information makes perfect sense. Nevertheless, the model is not perfect because the data set only consists of 12 points. Furthermore, since humans have limitations, our regression line makes the unrealistic assumption that time will decrease flawlessly.Athletes today have even more access to these tools, and more study is being done on how to help them perform better.

Conclusion:

This study demonstrates how time and year relate to one another and how various factors are causing male athletes to become faster. Despite its flaws, our model provides us with a useful insight on what makes a good model.