

Create Your Own Visualization

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First paragraph: Complete departmental and institutional affiliation

Second paragraph: Changes in affiliation (if any)

Third paragraph: Acknowledgments, funding sources, special circumstances

Fourth paragraph: Contact information (mailing address and e-mail)

## **Report Project 3 – Create Your Own Visualization**

### **Section 1: Visualization Development**

#### **What did you develop?**

I developed a scatter plot in Excel showing the relationship between Glucose levels and BMI (Body Mass Index), with color-coded Outcome values (blue = No Diabetes, orange = Diabetes). This helps visualize how higher glucose and BMI may be associated with the likelihood of diabetes.

#### **Why did you choose Excel?**

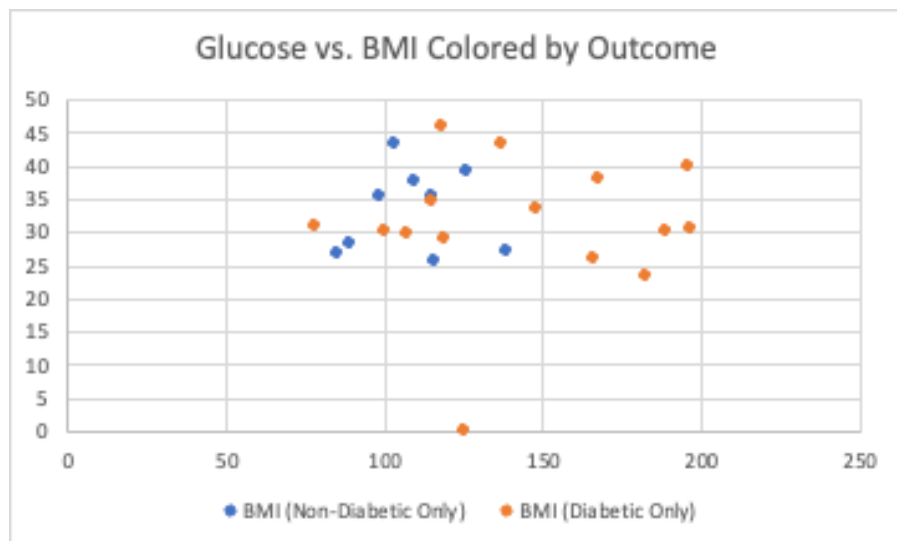
I chose Excel because it is user-friendly, widely available, and allows quick generation of meaningful visuals from tabular data. It supports scatter plots, bar charts, and other essential graph types perfect for this dataset.

#### **Do you think your visual will help in Biology and why?**

I don't believe it will make a significant impact but it's helpful in biology, especially in epidemiology and public health, because it provides an immediate understanding of how biometric variables like BMI and glucose relate to diabetes risk. Such trends can guide preventive strategies.

**Would you utilize the tool and your visual again?**

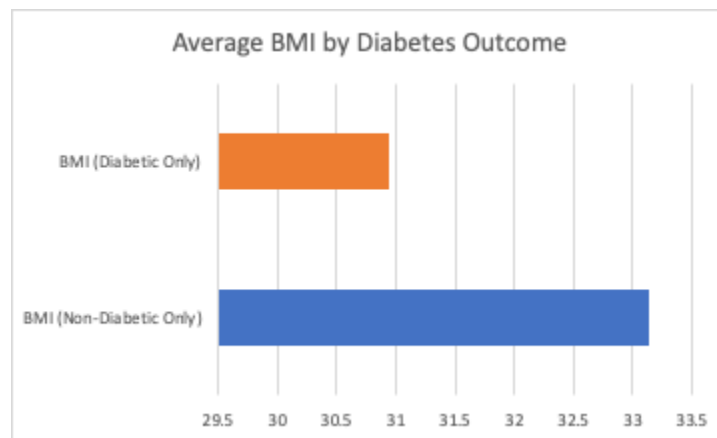
Yes. Excel provides a fast and intuitive way to explore biological datasets. For initial analyses or presentations, it is perfect. I would use it again for quick visualizations before possibly moving to more advanced tools like R or Python.

**Included Visual****Programming Code**

*Excel Functions: =IF(I2=0,F2,NA()) & =IF(I2=1,F2,NA())*

## Section 2 – Additional Elements

### Additional Image: Average BMI by Diabetes Outcome



Excel Bar Graph of Average BMI by Diabetes Outcome

### Summary of Findings

Through this project, I visualized the relationship between glucose levels and BMI using Excel. The scatter plot suggests a noticeable trend: individuals with higher BMI and glucose tend to have a positive diabetes outcome. This aligns with existing biological research, which shows that obesity and glucose intolerance are key risk factors for type 2 diabetes.

By creating this visualization, I learned how basic statistical patterns can be communicated visually. It also reinforced the importance of proper data formatting and chart labeling. For further research, I would recommend a larger dataset and include additional factors like age or insulin levels in multivariate analysis. Excel was sufficient for this small dataset, but more advanced tools could be used for predictive modeling or hypothesis testing in future studies.

### References

American Diabetes Association. (n.d.). *Understanding A1C test*. Retrieved Month Day, Year, from <https://diabetes.org/about-diabetes/a1c>

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