MSCS-631: Python: Lab3: SMTP

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Below is the experience and challenges of working with SMTP code and concept:

Working on this assignment provided a great opportunity to dive into the intricacies of the SMTP protocol and understand how email communication works at a low level. Instead of relying on high-level libraries like smtplib, implementing the protocol using raw sockets required me to think critically about every step of the process—from establishing a connection to sending commands like HELO, MAIL FROM, and DATA. This hands-on approach was both enlightening and rewarding, as it gave me a deeper appreciation of how email services operate behind the scenes. Successfully sending an email using raw Python code felt incredibly satisfying, especially after troubleshooting and overcoming some initial obstacles.

One of the biggest challenges was dealing with Gmail's strict security protocols, such as enabling App Passwords and ensuring the proper use of STARTTLS for a secure connection. The "Broken Pipe" error due to an improperly wrapped socket was a tricky issue, but debugging and updating the code to use ssl.create_default_context() was a valuable learning moment. Another challenge was ensuring that every SMTP command received the correct server response codes, as any mistake could cause the connection to drop. This assignment not only tested my understanding of networking protocols but also improved my problem-solving skills when faced with real-world issues like authentication and security.

Screenshots of email getting generated: