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Course: Foundations Of Programming with Python

Lessons Learned

I came into this class knowing some programming concepts from Access, Excel, VBA, and SQL, but Python still felt unfamiliar. Whenever something didn't click, I asked AI to explain it in plain English or compare it to a database, which helped a lot. Looking back over all eight assignments, a few lessons stand out:

Python seemed simple at first, but underneath the easy syntax is a clear structure. Relating it to SQL tables or Access forms helped everything make sense. I started noticing patterns like Input → Process → Output and Read → Transform → Write—very similar to SELECT → FROM → WHERE. Once I saw those connections, things became clearer.

I also learned the importance of validation. Just like database constraints, validation keeps Python programs predictable. Separation of Concerns made more sense once I thought of data classes as tables, processing classes as queries, and presentation classes as forms or reports.

Working with files helped me understand how data moves “behind the scenes,” and using functions and classes taught me how to write cleaner, more reusable code—similar to creating reusable datasets in Power BI or Power Query. Unit testing was new to me, but it quickly showed its value. It's much easier than manually testing everything, and it boosted my confidence. And honestly, errors ended up being some of my best teachers.

Seeing Python through database terms made abstract concepts click easier.

- Classes = table schemas
- Objects = records
- Lists = result sets
- Validation = constraints
- JSON = a table stored as text

This course taught me how to think like a programmer. I still have more to learn, but I definitely feel like I've taken meaningful steps toward my goals.