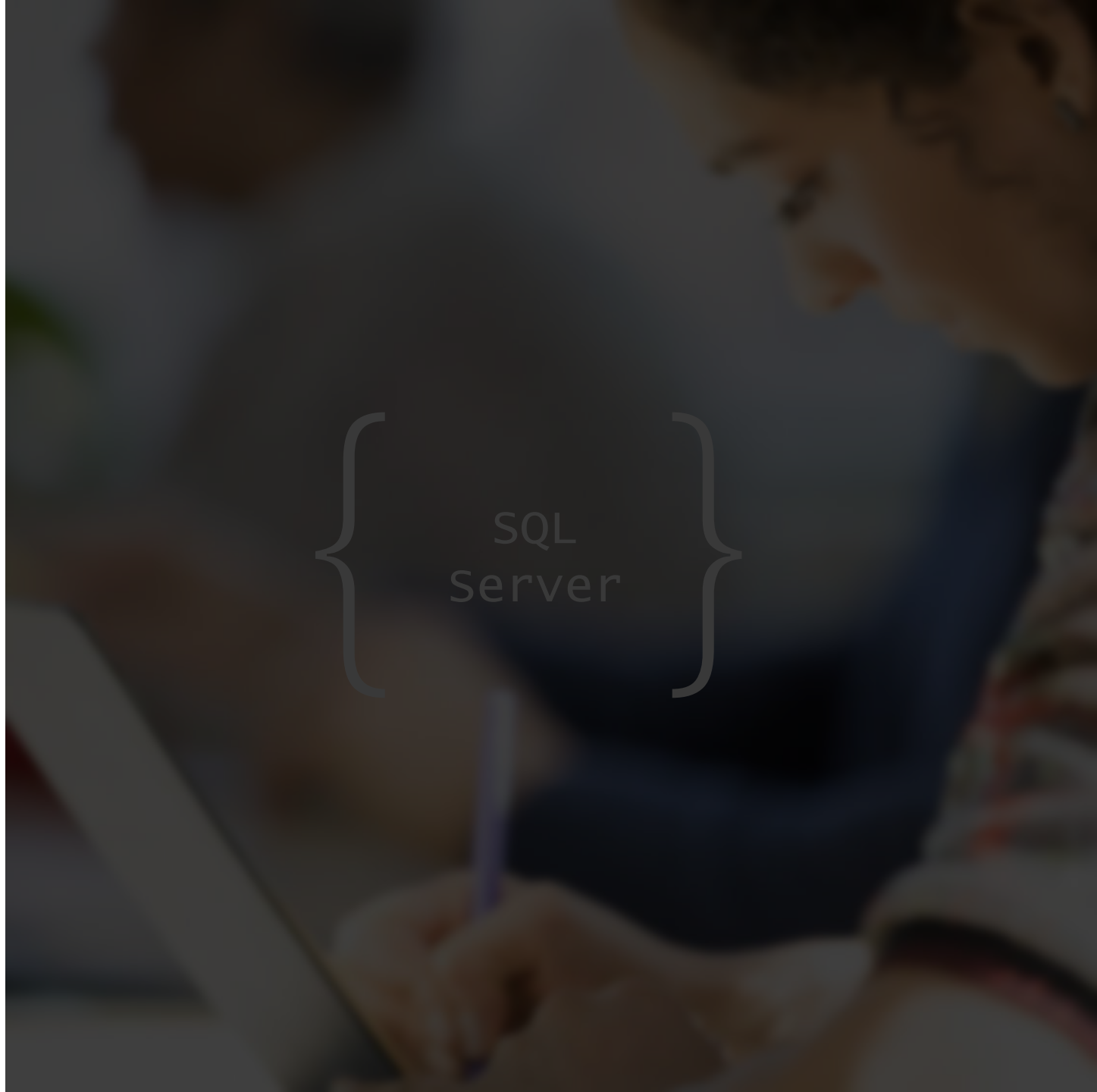
Microsoft

WorkshopPLUS – SQL Server: Performance Tuning and Optimization



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Microsoft Certified Trainer (Regional Lead)
MVP: Data Platform (2016 – 2018)

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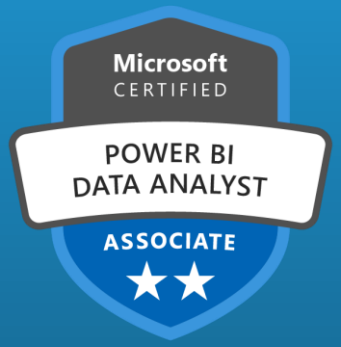
GitHub: github.com\SQLMCT



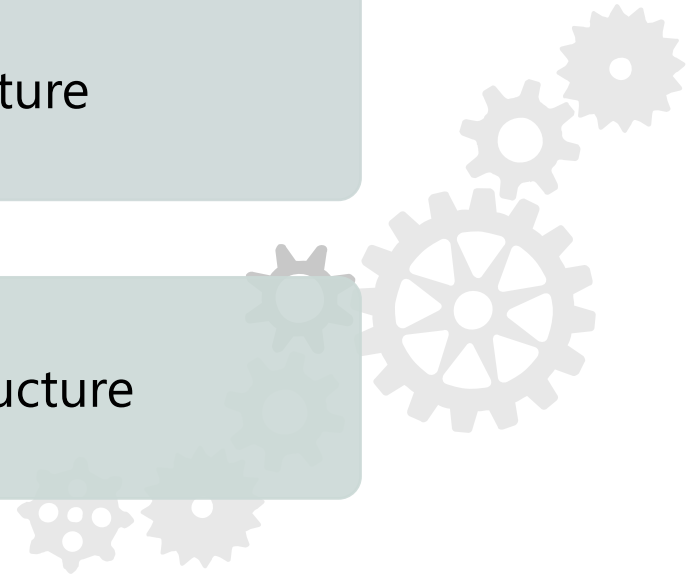
Agenda Day 1

Module 1: SQL Server Architecture, Scheduling and Waits

- SQL OS
- Task Scheduling
- Waits and Queues

Module 2: SQL Server I/O and Database Structure

- Disk I/O
- Page Structure
- Data File Structure



Agenda Day 2

Module 2: SQL Server I/O and Database Structure

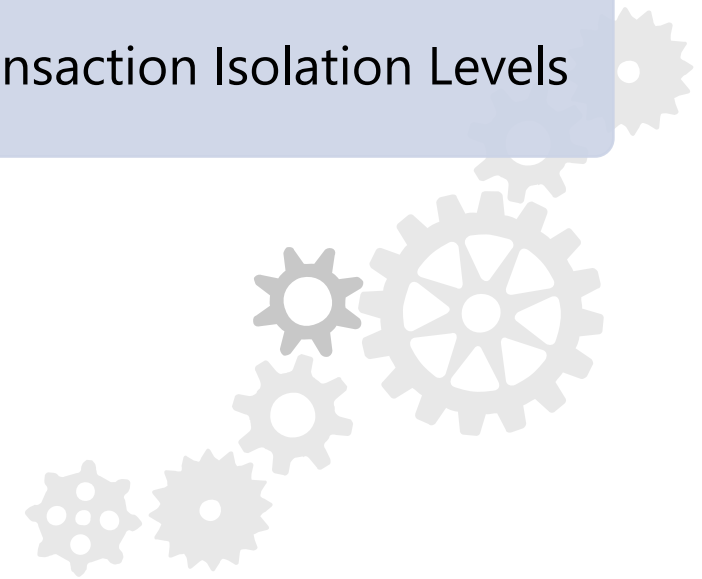
- Log File Structure
- TempDB File Structure

Module 3: SQL Server Memory

- Windows Memory Management
- SQL Server Memory Management
- Troubleshooting SQL Server Memory

Module 4: SQL Server Concurrency and Transactions

- SQL Server Transactions
- Transaction Isolation Levels



Agenda Day 3

Module 4: SQL Server Concurrency and Transactions

- SQL Server Locking
- Blocking and Deadlocking

Module 5: SQL Server Index Structure

- SQL Server Index Internals & Indexing Strategies
- SQL Server Partitioned Tables and Indexes
- SQL Server Index Monitoring and Fragmentation

Agenda Day 4

Module 6: SQL Server Statistics Structure

- SQL Server Statistics Internals
- SQL Server Cardinality Estimation
- SQL Server Statistics Maintenance

Module 7: SQL Server Query Execution and Plans

- SQL Server Query Execution
- SQL Server Query Plan Analysis
- SQL Server Intelligent Query Processing

Module 8: SQL Server Plan Caching and Query Store

- SQL Server Plan Cache Internals
- Query Store
- Query Store Troubleshooting

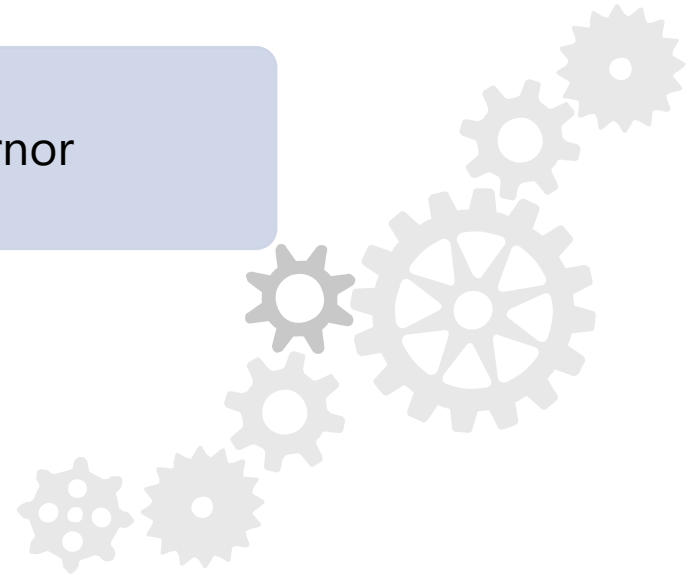
Additional Review

Module 9: SQL Server Query Tuning

- Sargable expressions
- Query Hints
- Query Troubleshooting

Module 10: SQL Server Performance Tools

- Extended Events
- Resource Governor



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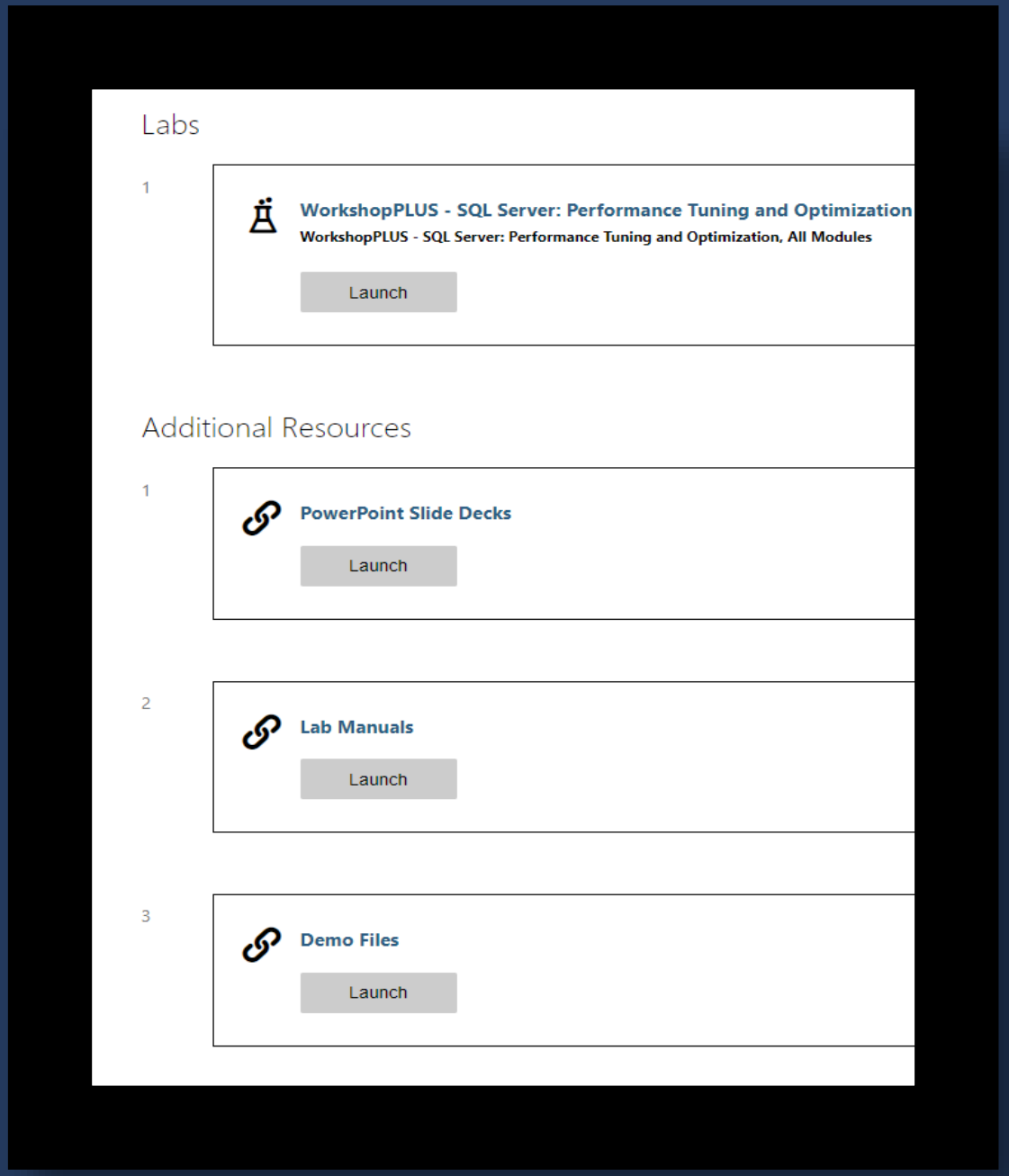
Class Resources

Virtual Lab Environment, Slides Decks, Lab Manuals, and Demo Files



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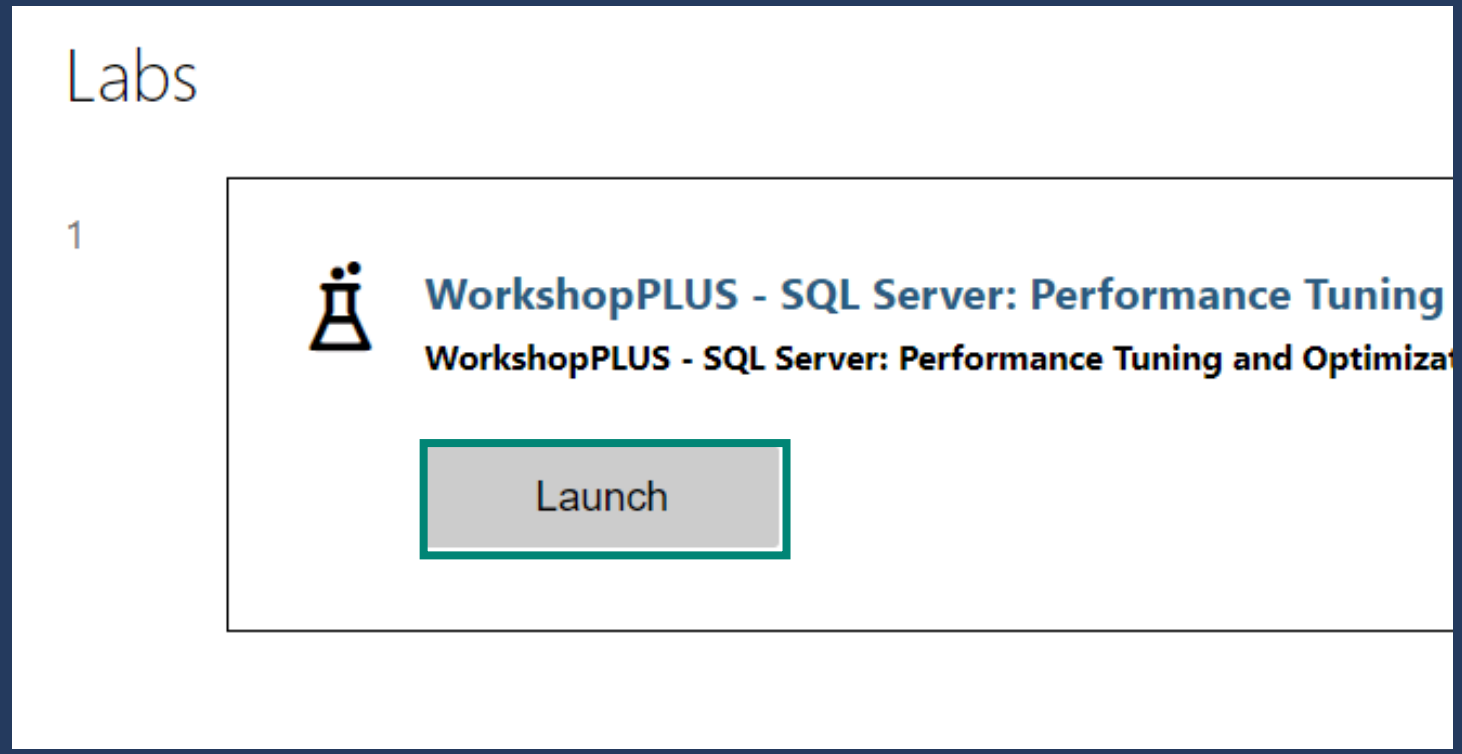
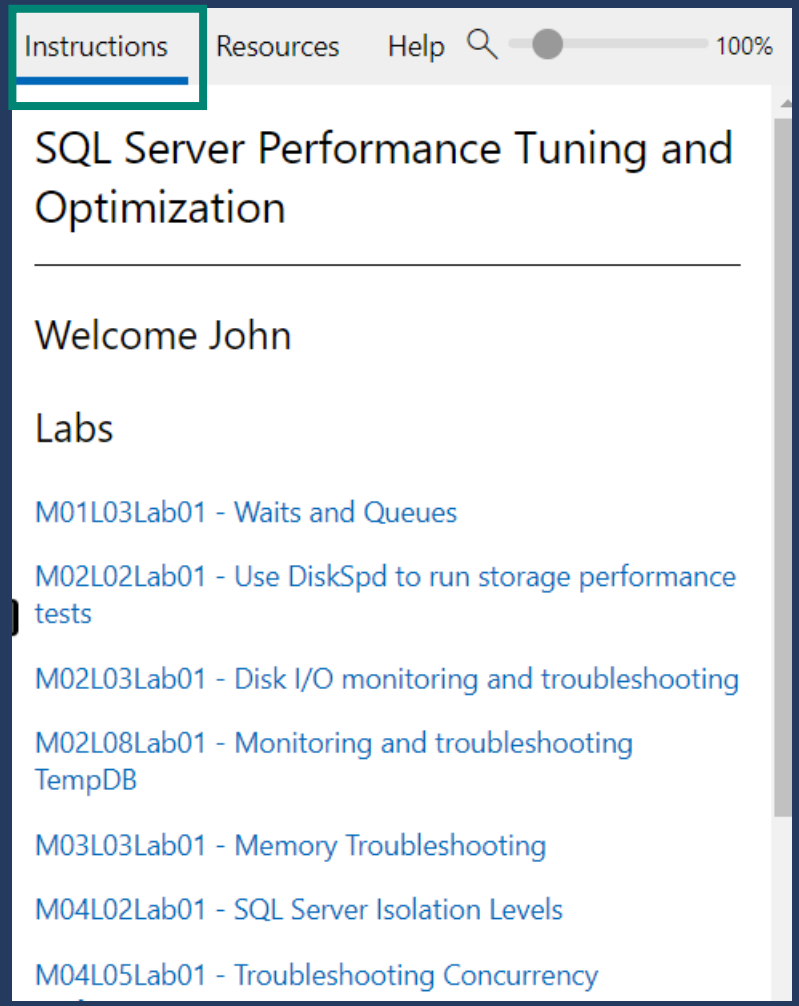
Launch Lab

In the Labs section, click Launch



Lab environment

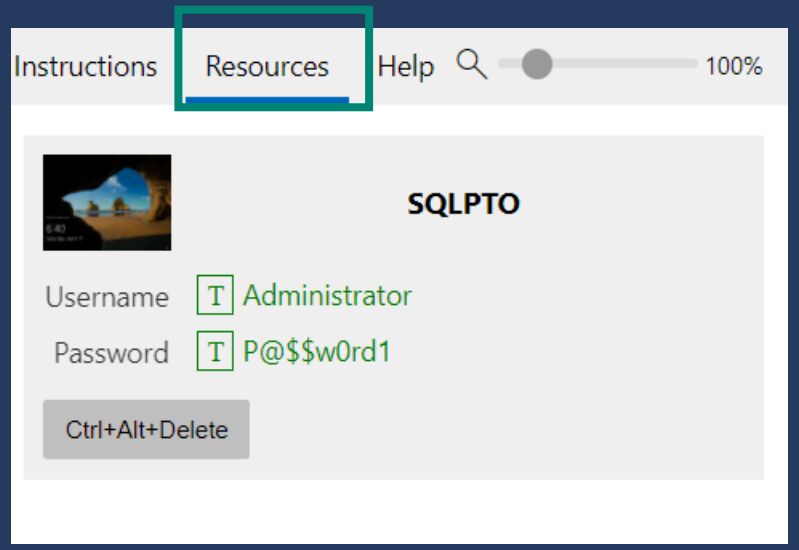
Lab Instructions are shown on the right side of the virtual machine.



Lab environment

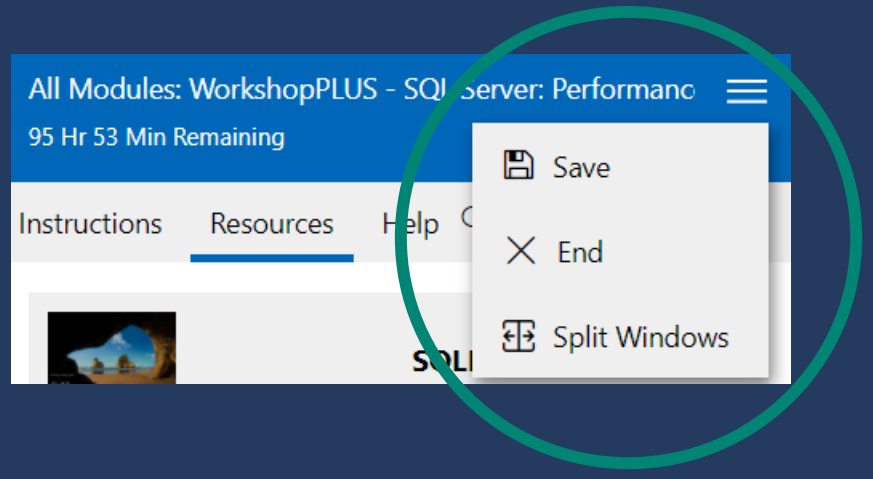
Use the Ctrl+Alt+Delete button to logon to the virtual machine.

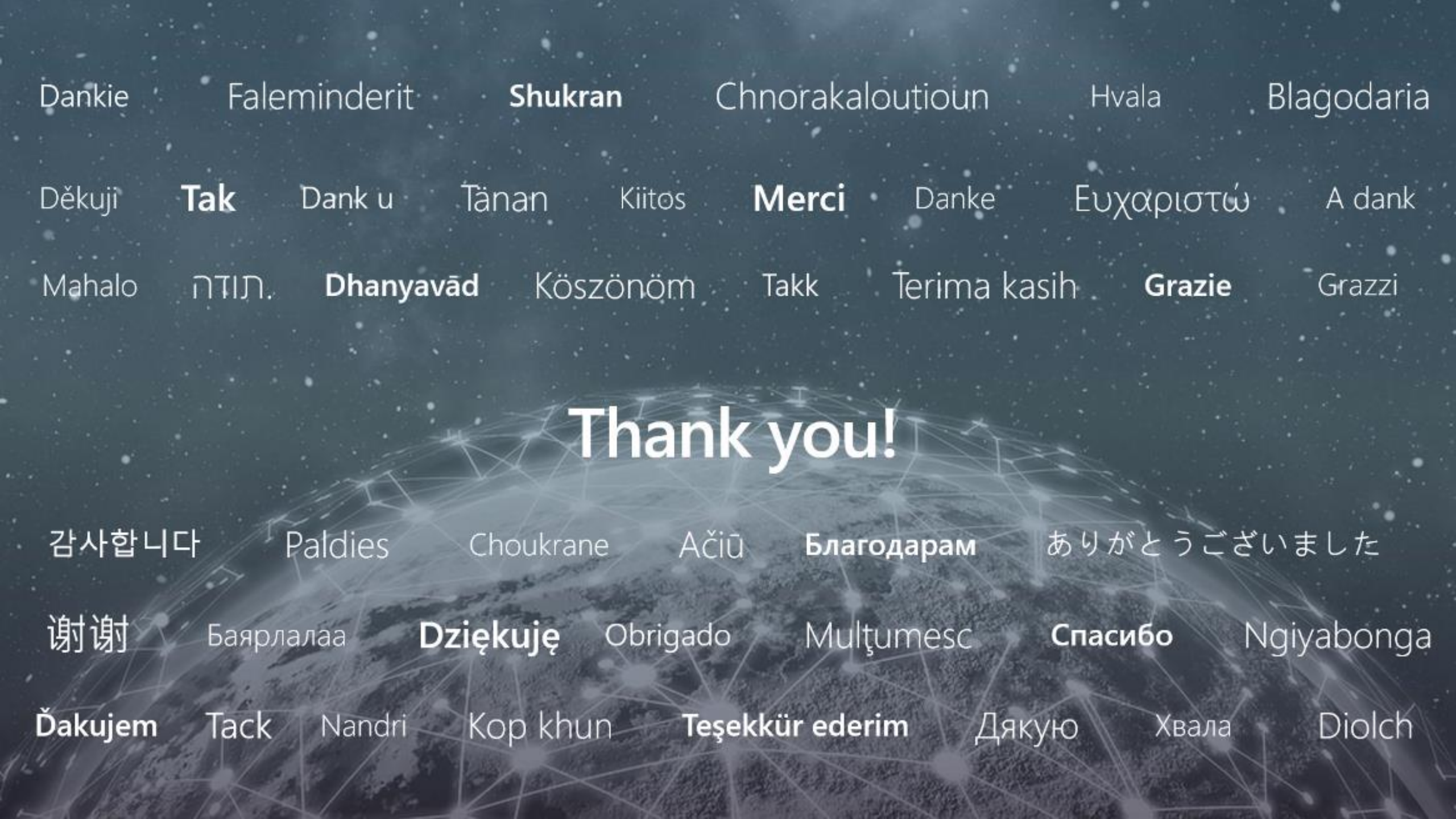
You can click on the T next to Username and Password to paste in the virtual machine.



Lab Time Remaining

- Ensure you select **Save** before leaving the Lab environment.
- You can save up to 5 labs for up to 7 days.
- The lab environment is available for 180 days.
- Split Windows will allow you to move the instructions to a separate screen.




Dankie
Faleminderit
Shukran
Chnorakaloutioun
Hvala
Blagodaria
Děkuji
Tak
Dank u
Tänan
Kiitos
Merci
Danke
Ευχαριστώ
A dank
Mahalo
תודה.
Dhanyavād
Köszönöm
Takk
Terima kasih
Grazie
Grazzi
Thank you!
감사합니다
Paldies
Choukrane
Ačiū
Благодарам
ありがとうございました
谢谢
Баярлалаа
Dziękuję
Obrigado
Mulţumesc
Спасибо
Ngiyabonga
Ďakujem
Tack
Nandri
Kop khun
Teşekkür ederim
Дякую
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Diolch

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