365 unique SQL Server Database Administration (DBA) Learnings:
Fundamentals → intermediate → advanced → real-world DBA scenarios → career & best practices.

Foundations (Days 1–30)

1. What does a SQL Server DBA do?
2. SQL Server Editions explained
3. SQL Server architecture overview
4. Understanding SQL Server instances
5. System databases and their purpose
6. User databases vs system databases
7. SQL Server service accounts best practices
8. SQL Server installation checklist
9. Default SQL Server ports and security
10. SQL Server authentication modes
11. Windows vs SQL authentication
12. Importance of patching SQL Server
13. SQL Server versioning explained
14. Cumulative Updates vs Service Packs
15. SQL Server compatibility levels
16. Collation in SQL Server
17. Case sensitivity in SQL Server
18. SQL Server file types explained
19. MDF, LDF, and NDF files
20. SQL Server startup parameters
21. TempDB overview
22. Why TempDB is critical
23. SQL Server memory architecture
24. SQL Server CPU usage basics
25. SQL Server disk I/O fundamentals
26. SQL Server network considerations
27. SQL Server ports and firewalls
28. SQL Server licensing basics
29. Common DBA myths
30. Daily responsibilities of a DBA

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Security & Permissions (Days 31–70)

31. SQL Server security model
32. Logins vs users
33. Server-level roles explained
34. Database-level roles explained
35. Fixed vs custom roles
36. Principle of least privilege
37. GRANT, DENY, and REVOKE
38. How to audit SQL Server logins
39. Password policies in SQL Server
40. SQL Server encryption overview
41. Transparent Data Encryption (TDE)
42. Always Encrypted explained
43. SQL Server certificates
44. SQL Server asymmetric keys

45. Row-level security
46. Dynamic data masking
47. SQL Server auditing
48. SQL Server vulnerability assessment
49. Protecting system databases
50. SQL Server security best practices
51. Preventing SQL injection
52. Securing SQL Server Agent
53. Managing permissions efficiently
54. Contained databases
55. Cross-database ownership chaining
56. Security risks of public role
57. Monitoring failed login attempts
58. SQL Server endpoint security
59. Service Broker security
60. Encrypting backups
61. Backup encryption vs TDE
62. Securing linked servers
63. Managing credentials
64. SQL Server authentication troubleshooting
65. Security hardening checklist
66. Auditing schema changes
67. GDPR considerations in SQL Server
68. Data privacy best practices
69. Removing orphaned users
70. Security mistakes DBAs make

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Backup & Recovery (Days 71–110)

71. Importance of backups
72. Types of SQL Server backups
73. Full backup explained
74. Differential backup explained
75. Transaction log backup explained
76. Recovery models overview
77. Simple recovery model
78. Full recovery model
79. Bulk-logged recovery model
80. Choosing the right recovery model
81. Backup compression benefits
82. Backup encryption basics
83. Backup retention strategies
84. Designing a backup strategy
85. Automating backups
86. SQL Server Maintenance Plans
87. Native backups vs third-party tools
88. Verifying backups
89. Restore strategies
90. Point-in-time recovery
91. Tail-log backups
92. Disaster recovery planning

93. Backup to Azure Blob Storage
94. Common backup failures
95. Backup performance tuning
96. Monitoring backup jobs
97. Restoring system databases
98. Recovering a deleted database
99. Handling corrupted backups
100. Backup storage best practices
101. Testing restores regularly
102. Backup compliance requirements
103. Copy-only backups
104. Backup scheduling best practices
105. Managing large databases backups
106. Backup impact on performance
107. Offsite backups importance
108. Backup documentation
109. Backup troubleshooting tips
110. Lessons from backup failures

Performance Monitoring & Tuning (Days 111–160)

111. What is SQL Server performance tuning?
112. Identifying performance bottlenecks
113. SQL Server wait statistics
114. Common wait types explained
115. Blocking vs deadlocking
116. How deadlocks occur
117. Deadlock monitoring techniques
118. Index basics
119. Clustered vs nonclustered indexes
120. Index fragmentation
121. Rebuild vs reorganize indexes
122. Fill factor explained
123. Missing index warnings
124. Over-indexing issues
125. Query execution plans
126. Reading execution plans
127. Query Store overview
128. Parameter sniffing
129. Statistics importance
130. Updating statistics
131. TempDB performance issues
132. Memory pressure indicators
133. CPU pressure indicators
134. Disk I/O latency
135. Monitoring SQL Server memory
136. SQL Server DMVs overview
137. Top performance DMVs
138. Long-running queries
139. Blocking chain analysis
140. Index maintenance strategies

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141. Auto vs manual tuning
142. Performance baseline creation
143. SQL Server monitoring tools
144. Using Extended Events
145. SQL Server Profiler risks
146. Resource Governor overview
147. Query tuning best practices
148. Avoiding RBAR
149. Scalar vs table-valued functions
150. Temp tables vs table variables
151. Indexing large tables
152. Partitioning overview
153. Performance impact of triggers
154. Performance tuning checklist
155. Common performance mistakes
156. Performance troubleshooting workflow
157. Real-world performance case study
158. Preventing performance regressions
159. Performance documentation
160. Performance tuning myths

High Availability & Disaster Recovery (Days 161–210)

161. HA vs DR explained
162. SQL Server failover concepts
163. Failover Cluster Instances
164. Always On Availability Groups
165. AG architecture overview
166. Synchronous vs asynchronous replicas
167. Automatic vs manual failover
168. AG listener explained
169. Read-only replicas
170. Backup preferences in AG
171. AG failover testing
172. Log shipping overview
173. Log shipping pros and cons
174. Database mirroring (legacy)
175. Replication overview
176. Snapshot replication
177. Transactional replication
178. Merge replication
179. Replication troubleshooting
180. Distributed AGs
181. Multi-subnet clusters
182. Quorum models explained
183. DR site planning
184. RTO and RPO concepts
185. DR testing importance
186. Failover documentation
187. HA monitoring strategies
188. Common HA failures

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189. Split-brain scenarios
190. DR drills best practices
191. SQL Server on Azure HA
192. Azure SQL Managed Instance HA
193. Hybrid HA scenarios
194. Network latency considerations
195. Storage considerations for HA
196. Security in HA environments
197. Licensing for HA
198. HA vs scalability
199. Handling failover failures
200. Disaster recovery checklist
201. Automating failover alerts
202. Lessons learned from outages
203. HA architecture mistakes
204. DR communication plans
205. Data consistency checks
206. Monitoring replica health
207. DR documentation
208. HA upgrade strategies
209. HA patching strategies
210. HA/DR myths

Maintenance & Automation (Days 211–250)

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211. Importance of maintenance plans
212. SQL Server Agent overview
213. Creating SQL Agent jobs
214. Job schedules best practices
215. Job failure notifications
216. SQL Server alerts
217. Database integrity checks
218. DBCC CHECKDB explained
219. Handling corruption
220. Index maintenance automation
221. Statistics maintenance automation
222. Cleanup jobs importance
223. Log file growth management
224. Auto-growth settings
225. Monitoring disk space
226. Maintenance windows planning
227. Server restart best practices
228. Patching strategies
229. Handling cumulative updates
230. Upgrade planning checklist
231. Side-by-side upgrades
232. In-place upgrades risks
233. Rolling upgrades
234. Automating DBA tasks
235. PowerShell for DBAs
236. Using SQLCMD

237. Central management servers
238. Multi-server job management
239. Configuration drift management
240. Policy-Based Management
241. Alert fatigue management
242. Capacity planning basics
243. Storage growth forecasting
244. Memory configuration best practices
245. CPU configuration best practices
246. TempDB configuration best practices
247. Automating health checks
248. Maintenance documentation
249. Maintenance failures troubleshooting
250. Maintenance best practices

Advanced Topics & Real-World DBA (Days 251–310)

251. SQL Server internals overview
252. Buffer pool architecture
253. Transaction log internals
254. Locking and latching
255. Isolation levels explained
256. Snapshot isolation
257. In-memory OLTP
258. Columnstore indexes
259. SQL Server compression
260. Data partitioning strategies
261. Managing very large databases
262. SQL Server on virtual machines
263. NUMA architecture
264. Hyper-V vs VMware considerations
265. SQL Server on Linux overview
266. Cross-platform considerations
267. SQL Server in containers
268. Azure SQL Database overview
269. Azure SQL Managed Instance
270. Migrating to Azure
271. SQL Server licensing optimization
272. Monitoring cloud SQL costs
273. Data migration strategies
274. Minimal downtime migrations
275. Linked servers performance
276. Cross-database queries
277. Handling legacy applications
278. Third-party monitoring tools
279. Troubleshooting production outages
280. Incident response process
281. Root cause analysis
282. Post-incident reviews
283. Change management for DBAs
284. Handling emergency changes

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285. Documentation importance
286. Capacity bottlenecks
287. Scaling SQL Server workloads
288. Read vs write optimization
289. Handling high concurrency
290. SQL Server anti-patterns
291. Common DBA firefighting scenarios
292. Communicating with developers
293. Working with infrastructure teams
294. SLA management
295. Handling audit requests
296. Data retention policies
297. Archiving strategies
298. Compliance audits
299. Performance during peak loads
300. Lessons learned as a DBA
301. DBA war stories
302. Avoiding burnout as a DBA
303. Time management for DBAs
304. Prioritization techniques
305. Handling multiple environments
306. Production vs non-production
307. Change rollback strategies
308. Disaster recovery failures lessons
309. DBA soft skills
310. DBA decision-making

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Career Growth & Best Practices (Days 311–365)

311. Essential skills for SQL Server DBAs
312. Junior vs senior DBA responsibilities
313. Transitioning from developer to DBA
314. Building a DBA lab
315. Certifications for SQL Server DBAs
316. Interview questions for DBAs
317. Resume tips for DBAs
318. LinkedIn branding for DBAs
319. Blogging as a DBA
320. Sharing knowledge in the community
321. Learning roadmap for DBAs
322. Staying current with SQL Server
323. Reading SQL Server documentation
324. Following SQL Server experts
325. Attending SQL Server conferences
326. Importance of user groups
327. SQL Server MVP program
328. Mentorship in DBA career
329. Troubleshooting mindset
330. Developing problem-solving skills
331. Continuous learning strategies
332. Balancing automation and control

333. Avoiding overengineering
334. Knowing when not to tune
335. Communicating risks to management
336. Handling production pressure
337. Ethical responsibilities of DBAs
338. Data ownership principles
339. DBA accountability
340. Measuring DBA success
341. KPIs for DBAs
342. Documentation as a career asset
343. Building trust as a DBA
344. Working under SLAs
345. On-call DBA best practices
346. Career paths beyond DBA
347. DBA to architect transition
348. DBA to cloud engineer path
349. Freelancing as a DBA
350. Consulting vs in-house DBA
351. Teaching SQL Server
352. Writing technical content
353. Speaking at conferences
354. Giving internal training
355. Leadership skills for DBAs
356. Influencing technical decisions
357. Handling conflicts professionally
358. Long-term career planning
359. Avoiding stagnation
360. Building a personal brand
361. Giving back to the community
362. Lessons from senior DBAs
363. Mistakes every DBA makes
364. What I wish I knew as a DBA
365. Future of SQL Server DBA role

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