* Compare and contrast while loops, for loops, and do-while loops. Explain the scenarios in which each loop is most appropriate….

Comparison: -

| **Feature** | **while Loop** | **for Loop** | **do-while Loop** |
| --- | --- | --- | --- |
| Control type | Entry-controlled | Entry-controlled | Exit-controlled |
| Condition check time | Before loop starts | Before loop starts | After first iteration |
| Use case | Unknown repetitions | Known repetitions | Run at least once |
| Initialization | Outside loop | Inside loop header | Outside loop |
| Executes at least once | No | No | Yes |

When use:

* **while**: When the loop should run **only if the condition is true from the beginning**.
* **for**: When you **know in advance** how many times to repeat.
* **do-while**: When the code **must execute at least once**, regardless of the condition