

Java - While

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<https://github.com/wbombardellis/java-unterricht>

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Organization

1 While

2 Summary

While

- Play a musical note forever.

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```
while (true) {  
    note.setMessage(ShortMessage.NOTE_ON, 0, 60, 100);  
    rcvr.send(note, timeStamp);  
    Thread.sleep(1000);  
}
```

While

- Play a musical note 100 times .

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```
int count = 1;
while (count <= 100) {
    note.setMessage(ShortMessage.NOTE_ON, 0, 60, 100);
    rcvr.send(note, timeStamp);
    Thread.sleep(100);
    count ++;
}
```

While

- Play all musical notes (“supported by the computer”).

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```
int freq = 0;
while (freq < 128) {
    note.setMessage(ShortMessage.NOTE_ON, 0, freq, 100);
    rcvr.send(note, timeStamp);
    Thread.sleep(100);
    freq ++;
}
```


Exercises

- 1 Write a program that prints all natural numbers up to 1000

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- 2 Write a program that prints the Fibonacci sequence up to 1000. That is: 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, ...
 - Tip: $F_0 = 0$, $F_1 = 1$, $F_n = F_{n-2} + F_{n-1}$, for $n > 1$

While Grammar Rules

```
while (⟨Boolean condition⟩) {  
    ...  
}
```

Exercises

- 1 Write a program that reads the grades of ten students and print at the end the greatest note, the least note, the average note (arithmetic mean) and how many students passed (*grade* ≥ 7).

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- 1 Write a program that reads the grades of ten students and print at the end the greatest note, the least note, the average note (arithmetic mean) and how many students passed ($grade \geq 7$).
- 2 Write a program that tells whether a number is prime or not. A prime number is a natural number greater than 1 that is only divisible by 1 and by itself.

Summary

- While allows you to execute the same code several times
- Next Lesson: For

References

- W3C Tutorial:
 - https://www.w3schools.com/java/java_while_loop.asp
- Exercises:
 - <https://www.w3schools.com/java/exercise.asp>
 - Java Loops