



For-loops

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Loop Indices

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While-loops

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Preallocation

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Loops Example

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Recursion

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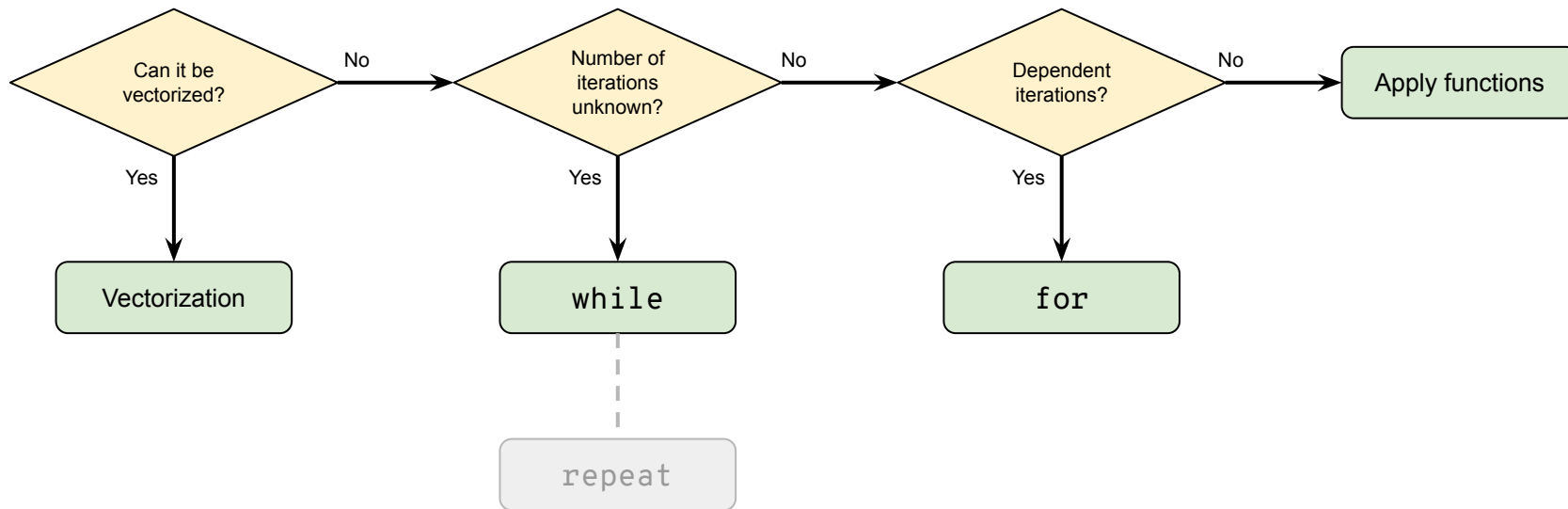


Developing Iterative Code

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Choosing an Iteration Strategy



Use recursion sparingly, for problems that are naturally recursive.

Developing Iterative Code

1. Write the code for just one iteration.
 - Don't use an apply function or loop yet.
 - Test that your code actually works.
2. Modify your code for iteration with an apply function or loop.
 - Look for expressions that change from one iteration to the next.
3. If your code doesn't work, figure out which iteration causes trouble.
 - Use `message()` to print diagnostics, or use R's debugger.
 - Fix the broken iteration!
 - Repeat this step until everything works.

R Iteration Best Practices

- Use vectorization whenever possible
- Minimize code inside apply functions and loops
 - Preallocate result vectors
- Only use indices when necessary
 - Especially important with apply functions
 - Iterate directly over vectors
- Use `seq_len(n)` instead of `1:n`