



Mutating on real-time and non-real-time















```
void mixAllSources (float* output, char* realtimeEventMessages, int n) {  
    processRealtimeEvents(realtimeEventMessages); // may add and remove sources  
    realtimeThreadCaller.process(); // process all the lambdas  
  
    RealtimeMutatable<SourceList>::ScopedAccess<true> sourceList (sharedSourceList);  
    for (int i = 0; i < sourceList->numSources; ++i)  
        mixSource (output, sourceList->buffers[i]);  
}  
  
void printSources() {  
    RealtimeMutatable<SourceList>::ScopedAccess<false> sourceList (sharedSourceList);  
    for (int i = 0; i < sourceList->numSources; ++i)  
        std::cout << (void*)sourceList->buffers[i] << std::endl;  
}
```



# Mutating on realtime and non-realtime

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    processRealtimeEvents(realtimeEventMessages); // may add and remove sources  
    realtimeThreadCaller.process(); // process all the lambdas  
  
    RealtimeMutable<SourceList>::ScopedAccess<true> sourceList (sharedSourceList);  
    for (int i = 0; i < sourceList->numSources; ++i)  
        mixSource (output, sourceList->buffers[i]);  
}
```

```
void printSources() {  
    RealtimeMutable<SourceList>::ScopedAccess<false> sourceList (sharedSourceList);  
    for (int i = 0; i < sourceList->numSources; ++i)  
        std::cout << (void*)sourceList->buffers[i] << std::endl;  
}
```

# Real-time & Non-real-time Summary

- Scenario:
  - Data is big: `std::atomic<>::is_always_lock_free == false`
  - Sharing data between real-time and non-real-time threads
  - Both threads can mutate data
- Trade-off:
  - One thread needs to own the data
  - Same trade-offs as FIFOs & `(Non)RealTimeMutableObjects`
  - Complexity
- Examples:
  - Managing lists and dynamic streams where losing packets is not acceptable