Faster version of a function that converts from base 256

```
In[•]:= from = Compile[{{x, _Integer, 1}}, Module[{i, exp = 1, ans = 0},
            For[i = 1, i ≤ Length[x], i++, ans = ans + exp * x[[i]];
             exp = exp * 256];
            ans], CompilationTarget → "C"];
```

Faster version of a function that extracts the data segment

```
In[•]:= getData = Compile[{{x, _Integer, 1}},
           from /@ Partition[x[[45 ;; -1]], 2],
           CompilationOptions → {"InlineExternalDefinitions" → True}
          ];
```

This file happens to have only one data chunk, so we can cheat by just returning that chunk.

```
In[•]:= parse[file_] := With[{channelsNum = from@file[[23 ;; 24]],
           sampleRate = from@file[[25 ;; 28]], n1 = from@file[[29 ;; 32]]},
          Assert[file[[1 ;; 4]] == ToCharacterCode@"RIFF"];
          Assert[file[[9 ;; 12]] == ToCharacterCode@"WAVE"];
          Assert[file[[13 ;; 15]] == ToCharacterCode@"fmt"];
          Assert[file[[16]] == 0];
          Assert[from@file[[35 ;; 36]] == 16];
          Assert[file[[37 ;; 40]] == ToCharacterCode@"data"];
          <|"DataSize" → from@file[[41 ;; 44]],
           "BitsPerSample" → 8               n1
                               ──────────────────────────,
                               channelsNum sampleRate
           "Channels" → channelsNum, "SampleRate" → sampleRate,
           "FormatType" → from@file[[21 ;; 22]], "FileSize" → from@file[[5 ;; 8]],
           "DataSize" → from@file[[41 ;; 44]], "FormatSize" → from@file[[17 ;; 20]],
           "Data" → Hold[getData@bytes]|>
         ]

        bytes = BinaryReadList["tiny_planet.wav"];

In[•]:= parsed = parse[bytes]

Out[•]= <|DataSize → 43 076 000, BitsPerSample → 16, Channels → 2,
         SampleRate → 44 100, FormatType → 1, FileSize → 43 076 036,
         FormatSize → 16, Data → Hold[getData[bytes]]|>

In[•]:= d = FromDigits[#, 2] & /@ Partition[Mod[ReleaseHold[parsed[["Data"]]], 2], 8];

        With[{stream = OpenWrite[BinaryFormat → True]},
         PrintTemporary["Writing to disk"];
         BinaryWrite[stream, d];
         PrintTemporary["Written."];
         Close[stream]]

Out[•]= $Aborted
```

Open this up and you get an image of Audacity’s Nyquist prompt with the command “(mult *track* (hsosc 17500.0))” ready to run.