

Appendix 1 - Indelly Configuration

```
{
  "Tree": "(Latin,(Romanian,(((Walloon,French),(((Portuguese,PortugueseBrazil),Spanish),Catalan)),
(Friulian,Italian)))));",
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  "Taxa": ["Latin", "French", "Spanish", "Italian", "PortugueseBrazil", "Portuguese", "Catalan",
"Walloon", "Friulian", "Romanian"],
  "PartitionSets": [{ "Name": "Nasal Vowel", "Set": [34, 35, 41, 42, 43, 44, 46, 50, 53, 59, 69,
71]}, {"Name": "Vowel", "Set": [0, 2, 4, 6, 7, 9, 11, 14, 15, 16, 22, 27, 28, 29, 31, 37, 38, 39,
47, 57, 58, 64, 65, 66, 67, 73, 77, 78, 80, 84, 85, 87]}, {"Name": "Nasal Consonant", "Set": [20,
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55, 56, 61, 62, 68, 70, 72, 74, 75, 76, 79, 81, 82, 83, 86]}],
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      { "Taxon": "French", "Segments": [-1, 3, -1, 4]},
      { "Taxon": "Spanish", "Segments": [-1, 5, -1, 6]},
      { "Taxon": "Italian", "Segments": [-1, 7, -1, 6]},
      { "Taxon": "PortugueseBrazil", "Segments": [-1, 0, -1, 8]},
      { "Taxon": "Portuguese", "Segments": [-1, 0, -1, 8]},
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      { "Taxon": "Romanian", "Segments": [12, 0, -1, 8]}
    ]},
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      { "Taxon": "French", "Segments": [13, 15]},
      { "Taxon": "Spanish", "Segments": [13, 16]},
      { "Taxon": "Italian", "Segments": [13, 16]},
      { "Taxon": "PortugueseBrazil", "Segments": [13, 16]},
      { "Taxon": "Portuguese", "Segments": [13, 16]},
      { "Taxon": "Catalan", "Segments": [13, 16]},
      { "Taxon": "Walloon", "Segments": [13, 15]},
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      { "Taxon": "Romanian", "Segments": [13, 16]}
    ]},
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      { "Taxon": "Portuguese", "Segments": [19, 9, 17, -1, 0, -1]},
      { "Taxon": "Catalan", "Segments": [19, 6, 17, 13, 0, -1]}
    ]},
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      { "Taxon": "French", "Segments": [20, 16, -1, -1, -1]},
      { "Taxon": "Spanish", "Segments": [20, 6, -1, 17, -1]},
      { "Taxon": "Italian", "Segments": [20, 2, 7, -1, -1]},
      { "Taxon": "PortugueseBrazil", "Segments": [20, 9, 12, -1, 17]},
      { "Taxon": "Portuguese", "Segments": [20, 9, -1, 21, -1]},
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{
  "Taxon": "Friulian", "Segments": [20, 2, -1, -1, -1]},
  "Taxon": "Romanian", "Segments": [20, 22, -1, -1, -1]}
}],
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  "Name": "YouPlural", "Data": [
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    {"Taxon": "French", "Segments": [19, 16, -1, -1]},
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    {"Taxon": "Italian", "Segments": [19, 2, 7, -1]},
    {"Taxon": "PortugueseBrazil", "Segments": [19, 9, 12, 17]},
    {"Taxon": "Portuguese", "Segments": [19, 6, -1, 21]},
    {"Taxon": "Catalan", "Segments": [23, 16, -1, 17]},
    {"Taxon": "Walloon", "Segments": [19, 6, -1, 17]},
    {"Taxon": "Friulian", "Segments": [19, 2, -1, -1]},
    {"Taxon": "Romanian", "Segments": [19, 22, -1, -1]}
  ],
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    {"Taxon": "Spanish", "Segments": [-1, 28, -1, 24, -1, -1, -1, 7, -1]},
    {"Taxon": "Italian", "Segments": [-1, -1, -1, 24, 8, -1, -1, 7, -1]},
    {"Taxon": "PortugueseBrazil", "Segments": [-1, 28, -1, 24, -1, -1, -1, 7, -1]},
    {"Taxon": "Portuguese", "Segments": [-1, 29, -1, 24, -1, -1, -1, 7, -1]},
    {"Taxon": "Catalan", "Segments": [-1, 28, -1, 24, -1, -1, -1, 7, -1]},
    {"Taxon": "Friulian", "Segments": [-1, 28, -1, 24, -1, -1, -1, 7, -1]}
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  "Name": "There", "Data": [
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    {"Taxon": "Italian", "Segments": [-1, -1, 30, 28, -1]},
    {"Taxon": "PortugueseBrazil", "Segments": [-1, -1, 30, 28, -1]},
    {"Taxon": "Portuguese", "Segments": [-1, -1, 30, 28, -1]},
    {"Taxon": "Catalan", "Segments": [4, -1, 32, 28, -1]},
    {"Taxon": "Walloon", "Segments": [-1, -1, 30, 28, -1]},
    {"Taxon": "Romanian", "Segments": [-1, -1, 30, 28, -1]}
  ],
{
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    {"Taxon": "Italian", "Segments": [-1, 19, 7]}
  ],
{
  "Name": "There", "Data": [
    {"Taxon": "Spanish", "Segments": [28, 7]},
    {"Taxon": "PortugueseBrazil", "Segments": [28, 7]},
    {"Taxon": "Portuguese", "Segments": [29, 7]}
  ],
{
  "Name": "Who", "Data": [
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    {"Taxon": "French", "Segments": [24, -1, 7, -1]},
    {"Taxon": "Italian", "Segments": [24, -1, 7, -1]},
    {"Taxon": "Catalan", "Segments": [24, -1, 7, -1]},
    {"Taxon": "Walloon", "Segments": [24, -1, 27, -1]},
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{
  "Taxon": "Friulian", "Segments": [24, 8, 7, -1]}
}],
{"Name": "Who", "Data": [
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  {"Taxon": "Spanish", "Segments": [24, 12, 0, 20, -1]},
  {"Taxon": "PortugueseBrazil", "Segments": [24, -1, 34, -1, -1]},
  {"Taxon": "Portuguese", "Segments": [24, -1, 35, -1, -1]},
  {"Taxon": "Romanian", "Segments": [36, -1, 7, 20, 0]}
}],
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  {"Taxon": "Spanish", "Segments": [24, -1, 0, -1]},
  {"Taxon": "Italian", "Segments": [24, -1, 0, -1]},
  {"Taxon": "PortugueseBrazil", "Segments": [24, -1, 7, -1]},
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  {"Taxon": "Walloon", "Segments": [24, 8, 39, -1]},
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  {"Taxon": "Romanian", "Segments": [40, -1, 0, -1]}
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  {"Taxon": "Spanish", "Segments": [24, 8, 28, 20, 18, 6]},
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  {"Taxon": "Portuguese", "Segments": [24, 8, 42, -1, 18, 16]},
  {"Taxon": "Catalan", "Segments": [24, 8, 28, 20, -1, -1]},
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  {"Taxon": "Friulian", "Segments": [24, 8, 28, 20, 13, -1]},
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  {"Taxon": "Spanish", "Segments": [24, 6, 25, 6, -1, -1]},
  {"Taxon": "Italian", "Segments": [24, 6, 25, 0, -1, -1]},
  {"Taxon": "PortugueseBrazil", "Segments": [24, 6, 25, 16, -1, -1]},
  {"Taxon": "Portuguese", "Segments": [24, 6, 25, 16, -1, -1]},
  {"Taxon": "Catalan", "Segments": [24, 9, 25, -1, -1, -1]},
  {"Taxon": "Walloon", "Segments": [24, 9, 25, 43, -1, -1]},
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  {"Taxon": "Italian", "Segments": [20, 6, 20, -1]},
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  "Taxon": "Portuguese", "Segments": [20, 42, 45, -1]},
  {"Taxon": "Catalan", "Segments": [20, 6, -1, -1]},
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  {"Taxon": "Romanian", "Segments": [20, 16, -1, -1]}
}],
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  {"Taxon": "Italian", "Segments": [20, 0, -1]},
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  {"Taxon": "Portuguese", "Segments": [20, 35, -1]},
  {"Taxon": "Catalan", "Segments": [20, 7, -1]},
  {"Taxon": "Walloon", "Segments": [20, 46, -1]}
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  {"Taxon": "Italian", "Segments": [6, 48, 48, 7, -1]}
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  {"Taxon": "French", "Segments": [13, 16, -1, -1, -1, -1]},
  {"Taxon": "Spanish", "Segments": [13, 6, -1, 18, 6, -1]},
  {"Taxon": "Italian", "Segments": [13, 16, 13, 13, 6, -1]},
  {"Taxon": "PortugueseBrazil", "Segments": [13, 6, -1, 18, 16, -1]},
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  {"Taxon": "Walloon", "Segments": [13, 9, -1, -1, -1, -1]},
  {"Taxon": "Friulian", "Segments": [18, 16, -1, 13, -1, -1]},
  {"Taxon": "Romanian", "Segments": [13, 6, -1, 13, -1, -1]}
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  {"Taxon": "Italian", "Segments": [25, 6, 30, 13, 6, -1, -1]},
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  {"Taxon": "Romanian", "Segments": [25, 16, 30, 13, -1, -1, -1]}
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  {"Taxon": "Catalan", "Segments": [13, 28, 20, 13, -1, -1]},
  {"Taxon": "Friulian", "Segments": [13, 28, 20, 52, -1, -1]}
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```

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  "Name": "Some", "Data": [
    {"Taxon": "French", "Segments": [6, -1, 24, 53, -1, -1, -1]},
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    {"Taxon": "Italian", "Segments": [28, 30, 24, 16, 20, 6, -1]},
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    {"Taxon": "Portuguese", "Segments": [28, 55, 1, 50, -1, -1, -1]},
    {"Taxon": "Catalan", "Segments": [4, 30, 1, 16, -1, -1, -1]}
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    {"Taxon": "Italian", "Segments": [56, 9, 24, 6, -1, -1]},
    {"Taxon": "PortugueseBrazil", "Segments": [56, 6, 8, 24, 16, -1]},
    {"Taxon": "Portuguese", "Segments": [56, 6, 8, 24, 16, -1]},
    {"Taxon": "Catalan", "Segments": [56, 9, 24, -1, -1, -1]},
    {"Taxon": "Walloon", "Segments": [56, 59, -1, -1, -1, -1]},
    {"Taxon": "Friulian", "Segments": [56, 2, 24, -1, -1, -1]}
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    {"Taxon": "French", "Segments": [6, -1, 13, -1, 61, -1]},
    {"Taxon": "Spanish", "Segments": [6, -1, 13, -1, 62, 6]},
    {"Taxon": "Italian", "Segments": [28, 30, 13, -1, 60, 6]},
    {"Taxon": "PortugueseBrazil", "Segments": [6, 8, 13, -1, 62, 16]},
    {"Taxon": "Portuguese", "Segments": [6, 8, 13, -1, 62, 16]},
    {"Taxon": "Catalan", "Segments": [28, 30, 13, -1, 62, 4]},
    {"Taxon": "Walloon", "Segments": [59, -1, 13, -1, -1, -1]},
    {"Taxon": "Friulian", "Segments": [28, 30, 13, -1, 60, 7]},
    {"Taxon": "Romanian", "Segments": [28, 30, 13, -1, -1, -1]}
  ],
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    {"Taxon": "PortugueseBrazil", "Segments": [28, 8, -1, -1, -1]},
    {"Taxon": "Portuguese", "Segments": [28, 55, -1, -1, -1]}
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    {"Taxon": "Italian", "Segments": [16, 20, 6, -1]},
    {"Taxon": "PortugueseBrazil", "Segments": [50, -1, -1, -1]},
    {"Taxon": "Portuguese", "Segments": [50, -1, -1, -1]},
    {"Taxon": "Catalan", "Segments": [16, 20, -1, -1]},
    {"Taxon": "Walloon", "Segments": [59, -1, -1, -1]},
    {"Taxon": "Friulian", "Segments": [16, 63, -1, -1]},
    {"Taxon": "Romanian", "Segments": [16, 20, 16, -1]}
  ],
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    {"Taxon": "French", "Segments": [18, -1, 58, -1]},
  ]
}
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{
  "Taxon": "Spanish", "Segments": [18, -1, 6, 17]},
  {"Taxon": "PortugueseBrazil", "Segments": [18, -1, 22, 17]},
  {"Taxon": "Portuguese", "Segments": [18, -1, 22, 21]},
  {"Taxon": "Catalan", "Segments": [18, -1, 6, 17]},
  {"Taxon": "Walloon", "Segments": [18, -1, 64, -1]},
  {"Taxon": "Friulian", "Segments": [18, -1, 22, -1]},
  {"Taxon": "Romanian", "Segments": [18, -1, 22, -1]}
}],
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  {"Taxon": "Italian", "Segments": [18, 16, -1, 0]},
  {"Taxon": "Romanian", "Segments": [18, 6, 8, 4]}
]},
{"Name": "Two", "Data": [
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  {"Taxon": "PortugueseBrazil", "Segments": [18, 16, 29, 17]},
  {"Taxon": "Portuguese", "Segments": [18, 16, 29, 21]}
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  {"Taxon": "French", "Segments": [13, 61, 8, 66, -1]},
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  {"Taxon": "Italian", "Segments": [13, 60, -1, 0, -1]},
  {"Taxon": "PortugueseBrazil", "Segments": [13, 62, -1, 0, 17]},
  {"Taxon": "Portuguese", "Segments": [13, 62, -1, 0, 21]},
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  {"Taxon": "Walloon", "Segments": [13, 60, -1, 64, -1]},
  {"Taxon": "Friulian", "Segments": [13, 60, -1, 47, -1]},
  {"Taxon": "Romanian", "Segments": [13, 60, -1, 67, -1]}
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  {"Taxon": "French", "Segments": [17, 46, -1, 24, -1, -1]},
  {"Taxon": "Spanish", "Segments": [68, 7, 20, 24, -1, 6]},
  {"Taxon": "Italian", "Segments": [40, 7, 63, 24, 8, 0]},
  {"Taxon": "PortugueseBrazil", "Segments": [17, 69, -1, 24, -1, 16]},
  {"Taxon": "Portuguese", "Segments": [17, 69, -1, 24, -1, 16]},
  {"Taxon": "Catalan", "Segments": [17, 7, 63, 24, -1, -1]},
  {"Taxon": "Walloon", "Segments": [17, 46, -1, 24, -1, -1]},
  {"Taxon": "Friulian", "Segments": [40, 7, 63, 24, -1, -1]},
  {"Taxon": "Romanian", "Segments": [40, 7, 20, 40, -1, -1]}
]},
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  {"Taxon": "Latin", "Segments": [25, 28, 54, 20, 16, 25]},
  {"Taxon": "Spanish", "Segments": [25, 28, -1, 48, 6, -1]},
  {"Taxon": "Italian", "Segments": [25, 28, 48, 48, 6, -1]}
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  {"Taxon": "Latin", "Segments": [54, 60, 28, 20, 18, 0, 25]},
  {"Taxon": "French", "Segments": [1, 61, 41, -1, -1, -1, -1]},
  {"Taxon": "Spanish", "Segments": [1, 62, 28, 20, 18, 0, -1]},
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```
{
  "Taxon": "Italian", "Segments": [1, 60, 28, 20, 18, 0, -1]},
  {"Taxon": "PortugueseBrazil", "Segments": [1, 62, 42, -1, 10, 7, -1]},
  {"Taxon": "Portuguese", "Segments": [1, 62, 42, -1, 18, 37, -1]},
  {"Taxon": "Catalan", "Segments": [54, 60, 28, 20, -1, -1, -1]},
  {"Taxon": "Walloon", "Segments": [54, 61, 41, -1, -1, -1, -1]},
  {"Taxon": "Friulian", "Segments": [54, 60, 28, 20, 13, -1, -1]}
}],
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  {"Taxon": "Romanian", "Segments": [25, 28, -1, -1, -1, 62, 0, -1]}
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  {"Taxon": "French", "Segments": [30, 44, -1, -1, -1, -1, -1]},
  {"Taxon": "Spanish", "Segments": [30, 6, -1, 20, 54, 6, -1]},
  {"Taxon": "Italian", "Segments": [30, 16, -1, 20, 1, 6, -1]},
  {"Taxon": "PortugueseBrazil", "Segments": [30, 59, -1, 1, 16, -1, -1]},
  {"Taxon": "Portuguese", "Segments": [30, 59, -1, 1, 16, -1, -1]},
  {"Taxon": "Catalan", "Segments": [32, 6, -1, 63, -1, -1, -1]},
  {"Taxon": "Walloon", "Segments": [30, 59, -1, -1, -1, -1, -1]},
  {"Taxon": "Friulian", "Segments": [30, 16, 20, 24, -1, -1, -1]},
  {"Taxon": "Romanian", "Segments": [30, 16, 20, 54, -1, -1, -1]}
]},
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  {"Taxon": "French", "Segments": [30, 28, 61, 3, -1, -1]},
  {"Taxon": "Spanish", "Segments": [30, 28, 62, 70, 6, -1]},
  {"Taxon": "Italian", "Segments": [30, 28, 60, 1, 6, -1]},
  {"Taxon": "PortugueseBrazil", "Segments": [30, 28, 61, 1, 16, -1]},
  {"Taxon": "Portuguese", "Segments": [30, 28, 62, 1, 16, -1]},
  {"Taxon": "Catalan", "Segments": [32, 28, 62, 24, -1, -1]},
  {"Taxon": "Friulian", "Segments": [30, 28, 60, 24, -1, -1]},
  {"Taxon": "Romanian", "Segments": [30, 28, 60, 54, -1, -1]}
]},
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  {"Taxon": "French", "Segments": [30, 0, -1, -1, -1]},
  {"Taxon": "Spanish", "Segments": [30, 28, 13, 6, -1]},
  {"Taxon": "Italian", "Segments": [30, 28, 13, 6, -1]},
  {"Taxon": "PortugueseBrazil", "Segments": [30, 28, 13, 16, -1]},
  {"Taxon": "Portuguese", "Segments": [30, 28, 13, 16, -1]},
  {"Taxon": "Romanian", "Segments": [30, 28, 13, -1, -1]}
]},
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  {"Taxon": "French", "Segments": [71, -1, 56, 30, -1, -1]},
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  {"Taxon": "Italian", "Segments": [28, 25, 56, 12, 6, -1]},
  {"Taxon": "PortugueseBrazil", "Segments": [42, -1, 21, -1, 16, -1]},
  {"Taxon": "Portuguese", "Segments": [42, -1, 21, -1, 16, -1]},
  {"Taxon": "Catalan", "Segments": [28, 25, 56, 30, 4, -1]}
]}
```

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```
  ]},
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    {"Taxon": "Latin", "Segments": [56, 7, 13, 13, 7, 13, 16, 17]},
    {"Taxon": "French", "Segments": [56, 4, -1, 13, 7, -1, -1, -1]},
    {"Taxon": "Catalan", "Segments": [56, 4, 13, 7, 13, -1, -1, -1]},
    {"Taxon": "Walloon", "Segments": [56, 7, -1, 13, 7, -1, -1, -1]}
  ]},
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    {"Taxon": "Italian", "Segments": [56, 7, 13, 40, 7, 20, 6, -1]},
    {"Taxon": "PortugueseBrazil", "Segments": [56, 0, 24, 0, 20, 16, -1, -1]},
    {"Taxon": "Portuguese", "Segments": [56, 37, 24, 0, 20, 16, -1, -1]},
    {"Taxon": "Romanian", "Segments": [56, 16, -1, 72, 7, 20, -1, -1]}
  ]},
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    {"Taxon": "Friulian", "Segments": [56, 7, -1, 40, 16, 30, -1, -1]}
  ]},
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    {"Taxon": "Latin", "Segments": [28, 20, 1, 16, 17, 13, 16, 17]},
    {"Taxon": "Spanish", "Segments": [28, 20, 1, 6, 17, 13, 6, -1]},
    {"Taxon": "Italian", "Segments": [28, 20, 1, 16, 17, 13, 6, -1]},
    {"Taxon": "Romanian", "Segments": [37, 63, 54, 16, 17, 13, -1, -1]}
  ]},
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    {"Taxon": "Spanish", "Segments": [0, 17, 13, 62, -1, 0, -1, -1, 40, 6, -1]},
    {"Taxon": "Italian", "Segments": [-1, 17, 13, 60, -1, 0, -1, 13, 13, 6, -1]},
    {"Taxon": "PortugueseBrazil", "Segments": [7, 17, 13, 62, -1, 67, -1, -1, 13, 16, -1]},
    {"Taxon": "Portuguese", "Segments": [37, 21, 13, 62, -1, 73, -1, -1, 13, 16, -1]},
    {"Taxon": "Catalan", "Segments": [4, 17, 13, 62, -1, 38, -1, -1, 13, -1, -1]},
    {"Taxon": "Walloon", "Segments": [-1, 17, 13, 61, -1, 64, -1, -1, -1, -1, -1]},
    {"Taxon": "Friulian", "Segments": [-1, 17, 13, 60, -1, 38, -1, -1, 13, -1, -1]},
    {"Taxon": "Romanian", "Segments": [-1, 17, 13, 60, -1, 37, 25, -1, 13, -1, -1]}
  ]},
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    {"Taxon": "Spanish", "Segments": [56, 0, 68, -1, -1, -1]},
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    {"Taxon": "Portuguese", "Segments": [56, 73, 21, -1, 37, -1]},
    {"Taxon": "Catalan", "Segments": [56, 0, 21, -1, -1, -1]},
    {"Taxon": "Friulian", "Segments": [56, 38, 17, -1, -1, -1]},
    {"Taxon": "Romanian", "Segments": [56, 0, 21, 13, 0, -1]}
  ]},
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    {"Taxon": "French", "Segments": [56, 8, 28, 17, 59]},
    {"Taxon": "Walloon", "Segments": [56, -1, 38, 26, 59]}
```


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```
  ]},
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    {"Taxon": "Spanish", "Segments": [28, 23, 0, -1]},
    {"Taxon": "PortugueseBrazil", "Segments": [28, 19, 7, -1]},
    {"Taxon": "Portuguese", "Segments": [28, 19, 37, -1]},
    {"Taxon": "Catalan", "Segments": [28, 8, -1, -1]}
  ]},
  {"Name": "Bird", "Data": [
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    {"Taxon": "French", "Segments": [8, 28, -1, -1, -1, 74, -1, 6, -1, -1, -1, -1]},
    {"Taxon": "Italian", "Segments": [-1, -1, 16, -1, 13, 40, -1, 38, 30, 30, 6, -1]},
    {"Taxon": "Catalan", "Segments": [-1, -1, 16, -1, -1, 17, -1, 0, -1, 32, -1, -1]},
    {"Taxon": "Walloon", "Segments": [-1, -1, 14, -1, -1, 26, -1, 39, -1, -1, -1, -1]},
    {"Taxon": "Friulian", "Segments": [-1, -1, 16, -1, -1, 40, 12, 38, -1, 30, -1, -1]}
  ]},
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    {"Taxon": "Spanish", "Segments": [56, 28, -1, 75, 28, 62, 6, -1]},
    {"Taxon": "Italian", "Segments": [56, 28, 17, 17, 0, 60, 6, -1]},
    {"Taxon": "PortugueseBrazil", "Segments": [56, 28, -1, 17, 29, 62, 16, -1]},
    {"Taxon": "Portuguese", "Segments": [56, 28, -1, 17, 29, 62, 16, -1]},
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  ]},
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    {"Taxon": "Italian", "Segments": [76, 12, 2, 62, 0, -1]},
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    {"Taxon": "Portuguese", "Segments": [76, 30, 6, 62, -1, -1]},
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    {"Taxon": "Walloon", "Segments": [76, 30, 64, 61, -1, -1]},
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    {"Taxon": "Romanian", "Segments": [76, 30, 78, 62, 0, -1]}
  ]},
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    {"Taxon": "Spanish", "Segments": [20, 28, 17, 6, -1]},
    {"Taxon": "Italian", "Segments": [20, 31, 17, 6, -1]},
    {"Taxon": "Catalan", "Segments": [20, 28, 17, -1, -1]},
    {"Taxon": "Walloon", "Segments": [20, 0, -1, -1, -1]},
    {"Taxon": "Friulian", "Segments": [20, 31, 17, -1, -1]},
    {"Taxon": "Romanian", "Segments": [20, 28, 17, -1, -1]}
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    {"Taxon": "PortugueseBrazil", "Segments": [20, 28, 62, 7, 17, -1]},
    {"Taxon": "Portuguese", "Segments": [20, 29, 62, 7, 21, -1]},
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```
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}],
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  {"Taxon": "French", "Segments": [23, -1, -1, 8, 66, 61, -1]},
  {"Taxon": "Spanish", "Segments": [23, 0, 23, -1, 0, 62, -1]},
  {"Taxon": "Italian", "Segments": [23, 0, -1, -1, -1, 62, 0]},
  {"Taxon": "PortugueseBrazil", "Segments": [23, 0, 23, -1, 0, 61, -1]},
  {"Taxon": "Portuguese", "Segments": [23, 37, 79, -1, 0, 62, -1]},
  {"Taxon": "Catalan", "Segments": [23, 38, 8, -1, -1, 62, 4]},
  {"Taxon": "Walloon", "Segments": [23, -1, -1, -1, 64, 61, -1]},
  {"Taxon": "Friulian", "Segments": [23, 0, 19, 7, -1, -1, -1]},
  {"Taxon": "Romanian", "Segments": [23, -1, -1, -1, 80, -1, -1]}
}],
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  {"Taxon": "PortugueseBrazil", "Segments": [24, 6, 25, 0, -1, -1, -1, -1]},
  {"Taxon": "Portuguese", "Segments": [24, 16, 25, -1, -1, 0, 62, -1]}
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  {"Taxon": "Spanish", "Segments": [25, 28, 20, 18, 16, 24, 28, 62, -1]},
  {"Taxon": "Italian", "Segments": [25, 28, 20, 10, -1, -1, 28, 62, 0]},
  {"Taxon": "PortugueseBrazil", "Segments": [25, 42, -1, 3, -1, -1, 28, 61, -1]},
  {"Taxon": "Portuguese", "Segments": [25, 42, -1, 3, -1, -1, 28, 62, -1]},
  {"Taxon": "Catalan", "Segments": [25, 4, 48, 3, -1, -1, 28, -1, -1]},
  {"Taxon": "Walloon", "Segments": [25, 28, 48, -1, -1, -1, 27, -1, -1]},
  {"Taxon": "Friulian", "Segments": [25, 28, 63, 81, -1, -1, 31, -1, -1]},
  {"Taxon": "Romanian", "Segments": [25, 37, 20, -1, -1, 24, 28, -1, -1]}
}],
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  {"Taxon": "Italian", "Segments": [25, 6, 60, 17, 7, 24, 28, 62, 0]},
  {"Taxon": "PortugueseBrazil", "Segments": [25, 16, -1, 17, 4, 1, 28, -1, -1]},
  {"Taxon": "Portuguese", "Segments": [25, 16, -1, 17, 4, 1, 28, 60, -1]},
  {"Taxon": "Catalan", "Segments": [25, 16, -1, 17, 4, 70, 28, -1, -1]},
  {"Taxon": "Romanian", "Segments": [25, 16, 60, 17, 0, 24, 28, -1, -1]}
}],
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```

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  {"Taxon": "Portuguese", "Segments": [17, 16, 1, 28, 62, -1]},
  {"Taxon": "Walloon", "Segments": [17, 15, 17, 27, -1, -1]},
  {"Taxon": "Friulian", "Segments": [52, 16, 52, 31, -1, -1]},
  {"Taxon": "Romanian", "Segments": [17, 16, 10, 0, -1, -1]}
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  {"Taxon": "PortugueseBrazil", "Segments": [24, 16, -1, 17, 56, 7, 61, -1, -1]},
  {"Taxon": "Portuguese", "Segments": [24, 16, -1, 21, 56, 7, 62, -1, -1]}
]},
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  {"Taxon": "Romanian", "Segments": [-1, 17, 24, 16, 12, 56, 28, -1, -1]}
]},
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  {"Taxon": "Spanish", "Segments": [0, 17, 56, 16, 13, 28, 62, -1]},
  {"Taxon": "Italian", "Segments": [-1, 17, 56, 16, 13, 28, 62, 0]},
  {"Taxon": "Friulian", "Segments": [17, 56, 16, 18, 31, -1, -1, -1]}
]},
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  {"Taxon": "Romanian", "Segments": [21, 13, 7, -1, -1]}
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  {"Taxon": "French", "Segments": [17, 28, 19, 8, 28, 61, -1]},
  {"Taxon": "Spanish", "Segments": [17, 28, 23, -1, 0, 62, -1]},
  {"Taxon": "Italian", "Segments": [17, 28, 56, -1, 47, 60, 0]},
  {"Taxon": "PortugueseBrazil", "Segments": [17, 28, 23, -1, 0, 61, -1]},
  {"Taxon": "Portuguese", "Segments": [17, 29, 23, -1, 0, 62, -1]},
  {"Taxon": "Catalan", "Segments": [17, 4, 79, -1, 38, -1, -1]},
  {"Taxon": "Walloon", "Segments": [17, 28, 19, -1, 64, 82, -1]},
  {"Taxon": "Friulian", "Segments": [17, 28, 19, -1, 47, -1, -1]}
]},
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  {"Taxon": "Spanish", "Segments": [24, 6, -1, 20, 6, 68, 0, 62, -1, -1]},
  {"Taxon": "Italian", "Segments": [24, 6, -1, 20, 6, 21, 21, 0, 60, 0]},
  {"Taxon": "PortugueseBrazil", "Segments": [24, 6, -1, 48, 0, 17, -1, 0, 61, -1]},
  {"Taxon": "Portuguese", "Segments": [24, 16, -1, 48, 37, 17, -1, 0, 62, -1]},
  {"Taxon": "Catalan", "Segments": [24, 16, -1, 20, 38, 21, -1, 4, -1, -1]},
  {"Taxon": "Walloon", "Segments": [24, 7, -1, 20, 9, 26, -1, -1, -1, -1]},
  {"Taxon": "Friulian", "Segments": [24, 6, -1, 48, 6, 17, -1, 7, -1, -1]},
  {"Taxon": "Romanian", "Segments": [24, 16, -1, 20, 78, 21, 13, 0, -1, -1]}
]}
```

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```
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    {"Taxon": "Spanish", "Segments": [24, 8, -1, -1, 7, 18, 28, 62, -1]},
    {"Taxon": "Italian", "Segments": [24, -1, 6, 10, 7, 13, 28, 60, 0]},
    {"Taxon": "PortugueseBrazil", "Segments": [24, -1, 16, 3, 7, 13, 28, 61, -1]},
    {"Taxon": "Portuguese", "Segments": [24, -1, 16, 3, 7, 13, 28, 62, -1]},
    {"Taxon": "Catalan", "Segments": [24, -1, 16, -1, 12, 18, 28, -1, -1]},
    {"Taxon": "Romanian", "Segments": [24, -1, 16, 10, 0, 13, 28, -1, -1]}
  ]
},
{
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    {"Taxon": "Spanish", "Segments": [56, 0, 20, 17, 28, 62, -1]},
    {"Taxon": "Italian", "Segments": [56, 0, 20, 17, 28, 62, 0]},
    {"Taxon": "PortugueseBrazil", "Segments": [56, 46, -1, 17, 28, 61, -1]},
    {"Taxon": "Portuguese", "Segments": [56, 46, -1, 17, 28, 62, -1]},
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    {"Taxon": "Walloon", "Segments": [56, 43, -1, 17, 0, -1, -1]},
    {"Taxon": "Friulian", "Segments": [56, 0, 63, 17, 31, -1, -1]},
    {"Taxon": "Romanian", "Segments": [56, 4, -1, 17, 28, -1, -1]}
  ]
},
{
  "Name": "ToFear", "Data": [
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    {"Taxon": "Spanish", "Segments": [13, 0, 25, 0, 62, -1]},
    {"Taxon": "Italian", "Segments": [13, 0, 25, 47, 60, 0]},
    {"Taxon": "PortugueseBrazil", "Segments": [13, 0, 25, 0, 61, -1]},
    {"Taxon": "Portuguese", "Segments": [13, 37, 25, 0, 62, -1]},
    {"Taxon": "Catalan", "Segments": [13, 0, 25, 4, -1, -1]},
    {"Taxon": "Friulian", "Segments": [13, 0, 25, 7, -1, -1]},
    {"Taxon": "Romanian", "Segments": [13, 0, 25, 0, -1, -1]}
  ]
},
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    {"Taxon": "Portuguese", "Segments": [13, 62, 37, 25, -1, 0, 62, -1]},
    {"Taxon": "Friulian", "Segments": [13, 60, 7, 25, -1, 31, -1, -1]}
  ]
},
{
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    {"Taxon": "Spanish", "Segments": [18, -1, 6, 62, 25, 7, 62, -1]},
    {"Taxon": "Italian", "Segments": [18, -1, 6, 60, 25, 27, 60, 0]},
    {"Taxon": "PortugueseBrazil", "Segments": [18, -1, 6, 61, 25, 7, 61, -1]},
    {"Taxon": "Portuguese", "Segments": [18, -1, 16, 62, 25, 7, 62, -1]},
    {"Taxon": "Catalan", "Segments": [18, -1, 16, 60, 25, 7, -1, -1]},
    {"Taxon": "Walloon", "Segments": [18, 8, 28, 61, 25, 7, -1, -1]},
    {"Taxon": "Friulian", "Segments": [18, -1, 16, 60, 25, 27, -1, -1]},
  ]
}
```

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```
{
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  {"Taxon": "French", "Segments": [19, 7, 19, -1, 61, -1]},
  {"Taxon": "Spanish", "Segments": [23, 7, 23, 7, 62, -1]},
  {"Taxon": "Italian", "Segments": [19, 27, 19, 0, 60, 0]},
  {"Taxon": "PortugueseBrazil", "Segments": [19, 7, 19, 0, 61, -1]},
  {"Taxon": "Portuguese", "Segments": [19, 7, 19, 0, 62, -1]},
  {"Taxon": "Catalan", "Segments": [23, 7, 8, -1, 62, 4]},
  {"Taxon": "Friulian", "Segments": [19, 7, 19, 7, -1, -1]},
  {"Taxon": "Romanian", "Segments": [19, 7, -1, 28, -1, -1]}
}],
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  {"Taxon": "PortugueseBrazil", "Segments": [25, 6, 61, 0, 61, -1]},
  {"Taxon": "Portuguese", "Segments": [25, 16, 61, 0, 62, -1]},
  {"Taxon": "Catalan", "Segments": [25, 16, 62, 7, -1, -1]},
  {"Taxon": "Walloon", "Segments": [25, 9, 82, 7, -1, -1]},
  {"Taxon": "Friulian", "Segments": [25, 16, 60, 27, -1, -1]},
  {"Taxon": "Romanian", "Segments": [25, 16, 60, 7, -1, -1]}
}],
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  {"Taxon": "Italian", "Segments": [20, 8, 6, 13, 28, 62, 0]},
  {"Taxon": "PortugueseBrazil", "Segments": [20, -1, 28, 18, 28, 61, -1]},
  {"Taxon": "Portuguese", "Segments": [20, -1, 29, 49, 28, 62, -1]},
  {"Taxon": "Catalan", "Segments": [20, -1, 4, 18, 28, -1, -1]},
  {"Taxon": "Friulian", "Segments": [20, -1, 28, 18, 31, -1, -1]}
}],
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  {"Taxon": "French", "Segments": [20, 28, -1, -1, 3, 0, -1, -1]},
  {"Taxon": "Spanish", "Segments": [20, 28, 23, 0, 1, 28, 62, -1]},
  {"Taxon": "Italian", "Segments": [20, 28, 19, 7, 1, 28, 60, 0]},
  {"Taxon": "PortugueseBrazil", "Segments": [20, 28, 19, 37, 70, 28, 61, -1]},
  {"Taxon": "Portuguese", "Segments": [20, 29, 19, 37, 70, 28, 62, -1]},
  {"Taxon": "Catalan", "Segments": [20, 4, 23, 4, 1, 28, -1, -1]},
  {"Taxon": "Walloon", "Segments": [20, 38, -1, -1, 10, 27, -1, -1]},
  {"Taxon": "Friulian", "Segments": [20, 28, 19, 7, 54, 31, -1, -1]},
  {"Taxon": "Romanian", "Segments": [20, 28, 19, 7, 1, 28, -1, -1]}
}],
{"Name": "ToFly", "Data": [
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  {"Taxon": "French", "Segments": [19, 6, 30, 0, -1, -1]},
  {"Taxon": "Spanish", "Segments": [23, 6, 30, 28, 62, -1]},
  {"Taxon": "Italian", "Segments": [19, 6, 30, 28, 62, 0]},
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Appendix 1 - Indelly Configuration

```
{
  "Taxon": "PortugueseBrazil", "Segments": [19, 6, -1, 28, 61, -1]},
  "Taxon": "Portuguese", "Segments": [19, 8, -1, 28, 62, -1]},
  "Taxon": "Catalan", "Segments": [23, 16, 30, 28, -1, -1]},
  "Taxon": "Walloon", "Segments": [19, 9, 30, 0, -1, -1]}
}],
{
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    {"Taxon": "Friulian", "Segments": [74, 19, 6, 30, 31, -1, -1]},
    {"Taxon": "Romanian", "Segments": [74, 23, 16, 62, 28, -1, -1]}
  ]
},
{
  "Name": "ToWalk", "Data": [
    {"Taxon": "French", "Segments": [21, 4, 25, 7, 20, 0, -1, -1, -1]},
    {"Taxon": "Spanish", "Segments": [24, 28, 25, 7, 20, 28, 62, -1, -1]},
    {"Taxon": "Italian", "Segments": [24, 28, 25, 25, 7, 20, 31, 62, 0]},
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    {"Taxon": "Portuguese", "Segments": [24, 29, 25, 7, 48, 28, 62, -1, -1]},
    {"Taxon": "Catalan", "Segments": [24, 4, 25, 7, 20, 28, -1, -1, -1]},
    {"Taxon": "Walloon", "Segments": [40, 7, 25, 7, 20, 0, -1, -1, -1]},
    {"Taxon": "Friulian", "Segments": [40, 12, 28, 25, 7, 20, 28, -1, -1]}
  ]
},
{
  "Name": "ToWalk", "Data": [
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    {"Taxon": "Walloon", "Segments": [25, 31, 82, 40, 27]}
  ]
},
{
  "Name": "ToWalk", "Data": [
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    {"Taxon": "Italian", "Segments": [25, 38, 60, 10, 0, 60, 0]},
    {"Taxon": "Romanian", "Segments": [25, 0, 60, 10, 0, -1, -1]}
  ]
},
{
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    {"Taxon": "Italian", "Segments": [28, 20, 18, -1, -1, 28, 60, 0]},
    {"Taxon": "PortugueseBrazil", "Segments": [42, -1, 18, -1, -1, 28, 61, -1]},
    {"Taxon": "Portuguese", "Segments": [42, -1, 18, -1, -1, 28, 62, -1]}
  ]
},
{
  "Name": "ToCome", "Data": [
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    {"Taxon": "French", "Segments": [19, 4, 20, 7, 61, -1]},
    {"Taxon": "Spanish", "Segments": [23, 0, 20, 7, 62, -1]},
    {"Taxon": "Italian", "Segments": [19, 0, 20, 27, 62, 0]},
    {"Taxon": "PortugueseBrazil", "Segments": [19, -1, -1, 7, 61, -1]},
    {"Taxon": "Portuguese", "Segments": [19, -1, -1, 7, 62, -1]},
    {"Taxon": "Catalan", "Segments": [23, 4, 20, 7, -1, -1]},
    {"Taxon": "Walloon", "Segments": [19, 7, 20, 7, -1, -1]},
    {"Taxon": "Friulian", "Segments": [19, 7, 48, 27, -1, -1]},
    {"Taxon": "Romanian", "Segments": [19, 0, 20, 7, -1, -1]}
  ]
},
{
  "Name": "ToLieAsInABed", "Data": [
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    {"Taxon": "French", "Segments": [0, -1, 13, 71, -1, 18, -1, 61, -1, -1]}
  ]
}
```

Appendix 1 - Indelly Configuration

```
{
  "Taxon": "Spanish", "Segments": [0, 24, 17, 13, 0, 20, 18, 0, 62, -1]},
  "Taxon": "Italian", "Segments": [0, -1, 17, 13, 38, 20, 18, 0, 60, 0]},
  "Taxon": "PortugueseBrazil", "Segments": [7, 17, 13, 46, -1, 18, 0, 61, -1, -1]},
  "Taxon": "Portuguese", "Segments": [7, 21, 13, 46, -1, 18, 0, 62, -1, -1]},
  "Taxon": "Catalan", "Segments": [4, -1, 17, 13, 0, 20, 18, -1, 62, 4]},
  "Taxon": "Romanian", "Segments": [0, 24, 17, 13, 7, 20, 18, 0, -1, -1]}
}],
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    {"Taxon": "Spanish", "Segments": [5, 28, -1, 68, 0, 62, -1]},
    {"Taxon": "Italian", "Segments": [10, 28, -1, 40, 47, 62, 0]},
    {"Taxon": "PortugueseBrazil", "Segments": [3, 29, -1, 74, 0, 61, -1]},
    {"Taxon": "Portuguese", "Segments": [3, 29, -1, 74, 0, 62, -1]},
    {"Taxon": "Catalan", "Segments": [3, 28, 8, -1, -1, 62, 4]},
    {"Taxon": "Walloon", "Segments": [10, 0, -1, -1, 60, 0, -1]},
    {"Taxon": "Friulian", "Segments": [12, 0, -1, 17, 7, -1, -1]},
    {"Taxon": "Romanian", "Segments": [74, 4, -1, 40, 80, -1, -1]}
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    {"Taxon": "French", "Segments": [17, 8, 28, -1, -1, 61, -1]},
    {"Taxon": "Spanish", "Segments": [17, -1, 0, -1, -1, 62, -1]},
    {"Taxon": "Italian", "Segments": [17, -1, 0, 18, 0, 60, 0]},
    {"Taxon": "PortugueseBrazil", "Segments": [17, -1, 0, -1, -1, 61, -1]},
    {"Taxon": "Portuguese", "Segments": [17, -1, 0, -1, -1, 62, -1]},
    {"Taxon": "Romanian", "Segments": [21, -1, 0, 18, 80, -1, -1]}
  ]
},
{
  "Name": "ToSit", "Data": [
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    {"Taxon": "PortugueseBrazil", "Segments": [17, 46, -1, -1, -1, 13, 28, 62, -1]},
    {"Taxon": "Portuguese", "Segments": [17, 46, -1, -1, -1, 13, 28, 62, -1]},
    {"Taxon": "Friulian", "Segments": [17, 0, -1, -1, 20, 13, 31, -1, -1]}
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},
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    {"Taxon": "Spanish", "Segments": [0, 17, 13, 28, 62, -1]},
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    {"Taxon": "Catalan", "Segments": [4, 17, 13, 28, -1, -1]},
    {"Taxon": "Walloon", "Segments": [38, 17, -1, -1, -1, -1]},
    {"Taxon": "Friulian", "Segments": [-1, 17, 13, 31, -1, -1]},
    {"Taxon": "Romanian", "Segments": [-1, 17, 13, 28, -1, -1]}
  ]
},
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    {"Taxon": "French", "Segments": [30, 4, 19, 0, -1, -1]},
    {"Taxon": "Spanish", "Segments": [5, 0, 23, 28, 62, -1]},
  ]
}
```


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```
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  "Taxon": "PortugueseBrazil", "Segments": [30, 0, 19, 28, 61, -1]},
  "Taxon": "Portuguese", "Segments": [30, 37, 19, 28, 62, -1]},
  "Taxon": "Catalan", "Segments": [32, 4, 23, 28, -1, -1]},
  "Taxon": "Walloon", "Segments": [30, 4, 19, 0, -1, -1]},
  "Taxon": "Friulian", "Segments": [30, 0, 19, 31, -1, -1]},
  "Taxon": "Romanian", "Segments": [30, -1, 16, 28, -1, -1]}
}],
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    {"Taxon": "French", "Segments": [-1, 6, -1, 17, -1, 0, -1, -1, -1]},
    {"Taxon": "Spanish", "Segments": [-1, 28, 30, 68, -1, 28, 62, -1, -1]},
    {"Taxon": "Italian", "Segments": [-1, 28, 30, 72, 28, 60, 0, -1, -1]},
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    {"Taxon": "Portuguese", "Segments": [-1, 28, 55, 17, -1, 28, 62, -1, -1]},
    {"Taxon": "Catalan", "Segments": [-1, 4, 30, 17, -1, 28, -1, -1, -1]},
    {"Taxon": "Walloon", "Segments": [26, 84, -1, 17, -1, 27, -1, -1, -1]},
    {"Taxon": "Friulian", "Segments": [-1, 28, 30, 13, 21, -1, 31, -1, -1]}
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    {"Taxon": "Spanish", "Segments": [13, 6, 62, 20, 28, 62, -1]},
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    {"Taxon": "Portuguese", "Segments": [13, 16, 62, 20, 28, 62, -1]},
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    {"Taxon": "Walloon", "Segments": [13, 14, 60, 20, 0, -1, -1]},
    {"Taxon": "Friulian", "Segments": [13, 6, 60, 20, 31, -1, -1]},
    {"Taxon": "Romanian", "Segments": [13, 16, 60, 20, 28, -1, -1]}
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    {"Taxon": "Portuguese", "Segments": [3, 7, 62, 28, 62, -1]},
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    {"Taxon": "Friulian", "Segments": [10, 7, 60, 31, -1, -1]}
  ]
},
{
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    {"Taxon": "Italian", "Segments": [19, 7, 60, 31, 62, 0]},
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    {"Taxon": "Catalan", "Segments": [23, 7, 62, 28, -1, -1]},
    {"Taxon": "Walloon", "Segments": [19, 7, 61, 0, -1, -1]},
    {"Taxon": "Friulian", "Segments": [10, 7, 60, 31, -1, -1]}
  ]
},
]
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    {"Taxon": "Spanish", "Segments": [13, 6, 62, 68, 0, 62, -1]},
    {"Taxon": "Italian", "Segments": [13, 9, 60, 40, 0, 60, 0]},
    {"Taxon": "PortugueseBrazil", "Segments": [13, 16, 60, 17, 0, 60, -1]},
    {"Taxon": "Portuguese", "Segments": [13, 16, 60, 17, 0, 60, -1]},
    {"Taxon": "Catalan", "Segments": [13, 9, 60, 17, 4, -1, -1]},
    {"Taxon": "Romanian", "Segments": [13, 78, 60, 40, 0, -1, -1]}
  ],
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    {"Taxon": "French", "Segments": [21, 8, 28, -1, -1, 61, -1]},
    {"Taxon": "Spanish", "Segments": [24, -1, 28, -1, 0, 62, -1]},
    {"Taxon": "Italian", "Segments": [24, -1, 28, 18, 47, 62, 0]},
    {"Taxon": "PortugueseBrazil", "Segments": [24, -1, 29, -1, 7, 62, -1]},
    {"Taxon": "Portuguese", "Segments": [24, -1, 29, -1, 7, 62, -1]},
    {"Taxon": "Catalan", "Segments": [24, -1, 28, 8, -1, 60, 4]},
    {"Taxon": "Walloon", "Segments": [40, -1, 39, -1, -1, 82, -1]},
    {"Taxon": "Friulian", "Segments": [40, 12, 28, 18, 0, -1, -1]},
    {"Taxon": "Romanian", "Segments": [24, 4, 18, 80, -1, -1, -1]}
  ],
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    {"Taxon": "Spanish", "Segments": [13, 16, 25, 23, 28, 62]},
    {"Taxon": "PortugueseBrazil", "Segments": [13, 59, -1, 23, 28, 61]},
    {"Taxon": "Portuguese", "Segments": [13, 59, -1, 23, 28, 62]},
    {"Taxon": "Catalan", "Segments": [13, 16, 25, 23, 28, -1]},
    {"Taxon": "Walloon", "Segments": [13, 16, 25, -1, 0, -1]},
    {"Taxon": "Romanian", "Segments": [13, 16, 25, 23, 28, -1]}
  ],
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    {"Taxon": "Spanish", "Segments": [13, 0, 20, -1, 0, 62, -1]},
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    {"Taxon": "Portuguese", "Segments": [13, 0, -1, -1, -1, 62, -1]},
    {"Taxon": "Catalan", "Segments": [13, 4, 20, -1, 7, -1, -1]},
    {"Taxon": "Walloon", "Segments": [13, 7, 20, -1, 7, -1, -1]},
    {"Taxon": "Friulian", "Segments": [13, 7, 20, 12, 7, -1, -1]},
    {"Taxon": "Romanian", "Segments": [72, 7, 20, -1, 0, -1, -1]}
  ],
  "Name": "ToHold", "Data": [
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    {"Taxon": "PortugueseBrazil", "Segments": [17, 37, 1, 16, 62, 28, 61]},
    {"Taxon": "Portuguese", "Segments": [17, 37, 70, 16, 62, 28, 62]}
  ],
  "Name": "ToSqueeze", "Data": [
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    {"Taxon": "French", "Segments": [0, -1, -1, 56, 61, 43, -1, 18, -1, 61, -1]},
  ]
}
```

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```
{
  "Taxon": "Spanish", "Segments": [0, 24, 17, 56, 62, 0, 25, -1, 7, 62, -1]},
  {"Taxon": "Italian", "Segments": [-1, -1, 17, 56, 60, 38, 25, -1, 0, 60, 0]},
  {"Taxon": "PortugueseBrazil", "Segments": [7, -1, 21, 56, 60, 4, 25, -1, 0, 61, -1]},
  {"Taxon": "Portuguese", "Segments": [7, -1, 21, 56, 60, 4, 25, -1, 0, 60, -1]},
  {"Taxon": "Catalan", "Segments": [4, -1, 17, 56, 62, 0, 25, -1, 4, -1, -1]},
  {"Taxon": "Friulian", "Segments": [0, -1, 17, 56, 60, 7, 25, -1, 7, -1, -1]},
  {"Taxon": "Romanian", "Segments": [-1, 17, 24, -1, 60, 0, 25, 0, -1, -1, -1]}
]},
{"Name": "ToSqueeze", "Data": [
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  {"Taxon": "Spanish", "Segments": [17, 0, -1, 60, 28, 62, -1]},
  {"Taxon": "PortugueseBrazil", "Segments": [17, 0, -1, 61, 28, -1, -1]},
  {"Taxon": "Portuguese", "Segments": [17, 4, -1, 82, 28, 62, -1]},
  {"Taxon": "Catalan", "Segments": [17, 4, -1, 60, 28, -1, -1]}
]},
{"Name": "ToSqueeze", "Data": [
  {"Taxon": "Latin", "Segments": [17, 0, -1, 60, 28, 60, 0]},
  {"Taxon": "French", "Segments": [17, 0, -1, 61, 0, -1, -1]},
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  {"Taxon": "Italian", "Segments": [17, 0, 60, 60, 28, 60, 0]},
  {"Taxon": "PortugueseBrazil", "Segments": [17, 37, -1, 61, 28, 62, -1]},
  {"Taxon": "Portuguese", "Segments": [17, 37, -1, 61, 28, 62, -1]},
  {"Taxon": "Walloon", "Segments": [17, 38, -1, 82, 0, -1, -1]}
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  {"Taxon": "Spanish", "Segments": [28, -1, 56, -1, -1, 62, 0, 13, 28, 62, -1]},
  {"Taxon": "PortugueseBrazil", "Segments": [29, -1, 56, 37, -1, 62, -1, 13, 28, 62, -1]},
  {"Taxon": "Portuguese", "Segments": [29, -1, 56, 37, -1, 62, -1, 13, 28, 62, -1]}
]},
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  {"Taxon": "French", "Segments": [0, -1, 13, 61, 43, -1, 18, -1, 61, -1]},
  {"Taxon": "Spanish", "Segments": [0, 17, 13, 62, 0, 48, -1, 7, 62, -1]},
  {"Taxon": "Italian", "Segments": [-1, 17, 13, 60, 7, 20, 10, 0, 60, 0]},
  {"Taxon": "PortugueseBrazil", "Segments": [4, 21, 13, 60, 69, -1, 3, 7, 60, -1]},
  {"Taxon": "Portuguese", "Segments": [4, 21, 13, 60, 69, 3, 7, 60, -1, -1]},
  {"Taxon": "Catalan", "Segments": [4, 17, 13, 62, 38, 48, 4, -1, -1, -1]},
  {"Taxon": "Walloon", "Segments": [17, 13, 60, 7, 20, 54, 0, -1, -1, -1]},
  {"Taxon": "Friulian", "Segments": [17, 13, 60, 38, 20, 54, 27, -1, -1, -1]},
  {"Taxon": "Romanian", "Segments": [17, 13, 60, 37, 20, 10, 0, -1, -1, -1]}
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  {"Taxon": "Italian", "Segments": [76, 60, 0, 54, 31, 60, 0]},
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  {"Taxon": "Walloon", "Segments": [76, 60, 22, -1, -1, -1, -1]},
  {"Taxon": "Friulian", "Segments": [76, 60, 0, -1, 28, -1, -1]},
  {"Taxon": "Romanian", "Segments": [76, 60, 0, 24, 28, -1, -1]}
]}
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    {"Taxon": "Portuguese", "Segments": [37, 21, 76, 62, 37, 70, 28, 62]}
  ]},
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    {"Taxon": "Spanish", "Segments": [76, 62, 6, 13, 28, 62, -1, -1]},
    {"Taxon": "Italian", "Segments": [76, 60, 0, 13, 13, 28, 60, 0]},
    {"Taxon": "Walloon", "Segments": [76, 61, 6, 13, 0, -1, -1, -1]}
  ]},
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    {"Taxon": "Catalan", "Segments": [76, 62, 4, 17, 28, -1]}
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    {"Taxon": "Portuguese", "Segments": [30, 29, 19, 28, 62, -1]},
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    {"Taxon": "Walloon", "Segments": [30, 28, 19, 0, -1, -1]},
    {"Taxon": "Friulian", "Segments": [30, 28, 19, 31, -1, -1]},
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  ]},
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    {"Taxon": "Spanish", "Segments": [0, -1, 17, 13, 28, 62, 17, 7, 62, -1]},
    {"Taxon": "Catalan", "Segments": [4, -1, 17, 13, 4, 60, 3, 7, -1, -1]},
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  ]},
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    {"Taxon": "Italian", "Segments": [28, 21, 21, -1, 16, 1, -1, 31, 60, 0]},
    {"Taxon": "PortugueseBrazil", "Segments": [46, -1, 21, -1, 16, 1, -1, 28, 62, -1]},
    {"Taxon": "Portuguese", "Segments": [46, -1, 21, -1, 16, 70, -1, 28, 62, -1]},
    {"Taxon": "Catalan", "Segments": [4, -1, 21, -1, 16, 1, 28, -1, -1, -1]},
    {"Taxon": "Walloon", "Segments": [-1, -1, 17, -1, 16, -1, 8, 0, -1, -1]},
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    {"Taxon": "Romanian", "Segments": [16, -1, 17, -1, -1, 24, -1, 28, -1, -1]}
  ]},
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  {"Taxon": "Spanish", "Segments": [30, 7, 25, 56, 12, -1, 28, 62, -1]},
  {"Taxon": "PortugueseBrazil", "Segments": [30, 69, -1, 56, -1, -1, 28, 62, -1]},
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}],
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  {"Taxon": "Spanish", "Segments": [13, 7, 62, 28, 62, -1]},
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  {"Taxon": "PortugueseBrazil", "Segments": [40, 7, 62, 28, -1, -1]},
  {"Taxon": "Portuguese", "Segments": [13, 7, 62, 28, 62, -1]},
  {"Taxon": "Catalan", "Segments": [13, 7, 62, 28, -1, -1]},
  {"Taxon": "Walloon", "Segments": [13, 7, 60, 0, -1, -1]},
  {"Taxon": "Friulian", "Segments": [13, 7, 60, 31, -1, -1]}
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  {"Taxon": "French", "Segments": [56, 16, -1, 17, 0, -1, -1]},
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  {"Taxon": "PortugueseBrazil", "Segments": [56, 16, -1, 21, 28, 62, -1]},
  {"Taxon": "Portuguese", "Segments": [56, 16, -1, 21, 28, 62, -1]},
  {"Taxon": "Walloon", "Segments": [56, 14, 17, 27, -1, -1, -1]},
  {"Taxon": "Friulian", "Segments": [56, 16, 30, 17, 31, -1, -1]},
  {"Taxon": "Romanian", "Segments": [56, 16, 30, 17, 28, -1, -1]}
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  {"Taxon": "French", "Segments": [13, 61, -1, -1, -1, 38, 61, -1]},
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  {"Taxon": "Catalan", "Segments": [13, 62, 38, -1, 8, -1, 62, 4]},
  {"Taxon": "Friulian", "Segments": [13, 60, 65, -1, -1, -1, -1, -1]},
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  {"Taxon": "Italian", "Segments": [7, 25, 56, 7, 20, 10, 0, 60, 0]},
  {"Taxon": "Catalan", "Segments": [4, 25, 56, 38, 48, -1, 4, -1, -1]},
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  {"Taxon": "Spanish", "Segments": [-1, 0, -1, -1, 40, 28, 62, -1]},
  {"Taxon": "Italian", "Segments": [10, 0, -1, 13, 13, 28, 60, 0]},
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  {"Taxon": "Catalan", "Segments": [75, 7, -1, 13, 28, -1, -1, -1]},
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}],
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  {"Taxon": "Spanish", "Segments": [30, 28, 20, -1, 68, -1, 28, 62, -1]},
  {"Taxon": "Italian", "Segments": [30, 28, 20, 40, 31, 60, 0, -1, -1]},
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  {"Taxon": "Portuguese", "Segments": [30, 42, -1, 17, -1, 28, 62, -1, -1]},
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  {"Taxon": "Walloon", "Segments": [30, 28, 20, 52, -1, 27, -1, -1, -1]},
  {"Taxon": "Friulian", "Segments": [30, 28, 20, 40, 31, -1, -1, -1, -1]}
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  {"Taxon": "Italian", "Segments": [28, 60, 60, 6, 20, 40, 31, 60, 0]},
  {"Taxon": "Romanian", "Segments": [28, -1, 62, 16, 63, 24, 28, -1, -1]}
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  {"Taxon": "Spanish", "Segments": [30, 0, 1, 28, 62, -1]},
  {"Taxon": "Italian", "Segments": [30, 0, 1, 31, 60, 0]},
  {"Taxon": "Catalan", "Segments": [32, 7, 70, 28, -1, -1]},
  {"Taxon": "Walloon", "Segments": [30, 9, 12, 27, -1, -1]},
  {"Taxon": "Friulian", "Segments": [30, 0, -1, 31, -1, -1]},
  {"Taxon": "Romanian", "Segments": [30, 0, 54, 28, -1, -1]}
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  {"Taxon": "Spanish", "Segments": [24, 6, -1, -1, 17, -1, 0, 62, -1]},
  {"Taxon": "Italian", "Segments": [24, 16, -1, -1, 40, -1, 27, 60, 0]},
  {"Taxon": "PortugueseBrazil", "Segments": [24, 16, -1, -1, 74, -1, 0, 62, -1]},
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  {"Taxon": "Walloon", "Segments": [24, 64, -1, -1, 74, -1, -1, -1, -1]},
  {"Taxon": "Friulian", "Segments": [24, 16, -1, -1, 74, 7, -1, -1, -1]},
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  {"Taxon": "Spanish", "Segments": [24, 6, 20, -1, -1, 13, 28, 62, -1]},
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  "Taxon": "Catalan", "Segments": [24, 16, 25, -1, -1, 13, 28, -1, -1]},
  "Taxon": "Walloon", "Segments": [24, 59, -1, -1, 13, 0, -1, -1, -1]},
  "Taxon": "Friulian", "Segments": [24, 6, 20, -1, -1, 13, 31, -1, -1]}
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    {"Taxon": "Portuguese", "Segments": [18, 7, 74, -1, 0, 62, -1]},
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    {"Taxon": "Walloon", "Segments": [18, 27, -1, -1, 61, -1, -1]},
    {"Taxon": "Friulian", "Segments": [18, 27, -1, -1, -1, -1, -1]},
    {"Taxon": "Romanian", "Segments": [74, 7, 40, 0, -1, -1, -1]}
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    {"Taxon": "Friulian", "Segments": [52, 28, 20, 13, 31, -1, -1]},
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  "Taxon": "Walloon", "Segments": [10, 16, 8, -1, 0, -1, -1]},
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  {"Taxon": "Portuguese", "Segments": [76, 30, 16, -1, 13, 16, 28, 62, -1]},
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  {"Taxon": "PortugueseBrazil", "Segments": [76, 30, 8, 7, 61, -1]},
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  {"Taxon": "French", "Segments": [24, 16, 30, 0, -1, -1]},
  {"Taxon": "Spanish", "Segments": [24, 6, 30, 28, 62, -1]},
  {"Taxon": "Italian", "Segments": [24, 6, 30, 31, 60, 0]},
  {"Taxon": "PortugueseBrazil", "Segments": [24, 6, -1, 28, 61, -1]},
  {"Taxon": "Portuguese", "Segments": [24, 16, -1, 28, 62, -1]},
  {"Taxon": "Catalan", "Segments": [24, 16, 55, 28, -1, -1]},
  {"Taxon": "Walloon", "Segments": [24, 9, 30, 0, -1, -1]}
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  {"Taxon": "Portuguese", "Segments": [7, -1, 21, 24, 16, -1, 82, 0, 62, -1]},
  {"Taxon": "Catalan", "Segments": [4, -1, 17, 24, 6, -1, 60, 4, -1, -1]},
```


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```
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    {"Taxon": "Italian", "Segments": [24, 6, 60, 60, 0, 60, 0]},
    {"Taxon": "PortugueseBrazil", "Segments": [24, 6, -1, 61, 0, 61, -1]},
    {"Taxon": "Portuguese", "Segments": [24, 16, -1, 61, 0, 62, -1]},
    {"Taxon": "Catalan", "Segments": [24, 6, -1, 60, 4, -1, -1]},
    {"Taxon": "Friulian", "Segments": [24, 6, -1, 60, 7, -1, -1]},
    {"Taxon": "Romanian", "Segments": [24, 16, 62, 10, 0, -1, -1]}
  ]
},
{
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    {"Taxon": "French", "Segments": [3, 4, 30, 0, -1, -1, -1]},
    {"Taxon": "Spanish", "Segments": [-1, 0, 30, 28, 62, -1, -1]},
    {"Taxon": "Italian", "Segments": [10, 0, 30, 28, 60, 0, -1]},
    {"Taxon": "PortugueseBrazil", "Segments": [3, 37, 30, 28, 62, -1, -1]},
    {"Taxon": "Portuguese", "Segments": [3, 37, 30, 28, 62, -1, -1]},
    {"Taxon": "Catalan", "Segments": [3, 4, 30, 28, -1, -1, -1]},
    {"Taxon": "Walloon", "Segments": [10, 28, 30, 0, -1, -1, -1]}
  ]
},
{
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    {"Taxon": "French", "Segments": [1, 30, 28, -1, 17, -1, 0, -1, -1]},
    {"Taxon": "Italian", "Segments": [1, 12, 28, 13, 40, 12, 28, 60, 0]},
    {"Taxon": "Catalan", "Segments": [1, 30, 4, -1, 17, -1, 28, -1, -1]},
    {"Taxon": "Friulian", "Segments": [54, 30, 28, -1, 40, -1, 31, -1, -1]}
  ]
},
{
  "Name": "ToFreeze", "Data": [
    {"Taxon": "Latin", "Segments": [7, 20, 1, 30, 28, 24, 7, 31, 60, 0]},
    {"Taxon": "Romanian", "Segments": [37, 20, 54, -1, 0, 72, -1, 28, -1, -1]}
  ]
},
{
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    {"Taxon": "Spanish", "Segments": [17, 6, 30, -1, -1]},
    {"Taxon": "Italian", "Segments": [17, 6, 30, 0, -1]},
    {"Taxon": "PortugueseBrazil", "Segments": [17, 9, 8, -1, -1]},
    {"Taxon": "Portuguese", "Segments": [17, 9, 55, -1, -1]},
    {"Taxon": "Catalan", "Segments": [17, 9, 30, -1, -1]},
    {"Taxon": "Walloon", "Segments": [17, 9, 30, 9, -1]},
    {"Taxon": "Romanian", "Segments": [17, 78, 62, 0, -1]}
  ]
},
{
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    {"Taxon": "French", "Segments": [17, 9, 30, 85, -1, -1, -1, -1, -1]},
    {"Taxon": "Friulian", "Segments": [17, 6, 60, 0, -1, -1, 30, 7, -1]}
  ]
},
{
  "Name": "Moon", "Data": [
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Appendix 1 - Indelly Configuration

```
{
  "Taxon": "Latin", "Segments": [30, 14, 20, 28]},
  {"Taxon": "French", "Segments": [30, 15, 20, -1]},
  {"Taxon": "Spanish", "Segments": [30, 16, 20, 28]},
  {"Taxon": "Italian", "Segments": [30, 16, 20, 28]},
  {"Taxon": "PortugueseBrazil", "Segments": [30, 16, -1, 29]},
  {"Taxon": "Portuguese", "Segments": [30, 16, -1, 29]},
  {"Taxon": "Catalan", "Segments": [32, 16, 20, 4]},
  {"Taxon": "Walloon", "Segments": [30, 58, 20, -1]},
  {"Taxon": "Friulian", "Segments": [30, 16, 20, 0]},
  {"Taxon": "Romanian", "Segments": [30, 16, 20, 4]}
}],
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  {"Taxon": "Latin", "Segments": [-1, 17, 13, -1, 47, 30, 30, 28]},
  {"Taxon": "French", "Segments": [0, -1, 13, 8, 28, -1, 30, -1]},
  {"Taxon": "Spanish", "Segments": [0, 17, 13, 62, 0, -1, 5, 28]},
  {"Taxon": "Italian", "Segments": [-1, 17, 13, -1, 0, 30, 30, 28]},
  {"Taxon": "PortugueseBrazil", "Segments": [7, 17, 13, 62, 0, -1, 30, 29]},
  {"Taxon": "Portuguese", "Segments": [37, 21, 13, 62, 0, -1, 30, 29]},
  {"Taxon": "Catalan", "Segments": [4, 17, 13, -1, 38, -1, 30, -1]},
  {"Taxon": "Walloon", "Segments": [-1, 17, 13, -1, 64, -1, 30, -1]},
  {"Taxon": "Friulian", "Segments": [-1, 17, 13, -1, 38, -1, 30, 0]},
  {"Taxon": "Romanian", "Segments": [-1, 17, 13, -1, 80, -1, -1, -1]}
}],
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  {"Taxon": "French", "Segments": [6, -1, -1, -1, -1]},
  {"Taxon": "Spanish", "Segments": [28, -1, 70, 8, 28]},
  {"Taxon": "Italian", "Segments": [28, 24, 24, 8, 28]},
  {"Taxon": "PortugueseBrazil", "Segments": [28, -1, 1, 8, 29]},
  {"Taxon": "Portuguese", "Segments": [28, -1, 1, 8, 29]},
  {"Taxon": "Catalan", "Segments": [65, -1, 70, 8, 4]},
  {"Taxon": "Walloon", "Segments": [39, -1, -1, 8, -1]},
  {"Taxon": "Friulian", "Segments": [28, -1, 54, -1, 0]},
  {"Taxon": "Romanian", "Segments": [28, -1, 56, -1, 4]}
}],
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  {"Taxon": "French", "Segments": [56, 30, 83, -1, -1, 7, -1]},
  {"Taxon": "Spanish", "Segments": [5, -1, 16, -1, 23, 12, 28]},
  {"Taxon": "Italian", "Segments": [56, 12, 6, 18, 10, -1, 28]},
  {"Taxon": "PortugueseBrazil", "Segments": [21, -1, 16, -1, 19, -1, 29]},
  {"Taxon": "Portuguese", "Segments": [21, -1, 16, -1, 19, -1, 29]},
  {"Taxon": "Catalan", "Segments": [56, 30, 16, -1, 3, -1, 4]},
  {"Taxon": "Walloon", "Segments": [56, 30, 14, -1, 61, -1, -1]},
  {"Taxon": "Friulian", "Segments": [56, 30, 6, -1, -1, 12, 0]},
  {"Taxon": "Romanian", "Segments": [56, 30, 78, -1, -1, 12, 0]}
}],
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  {"Taxon": "French", "Segments": [30, 28, 24, -1, -1]},
  {"Taxon": "Spanish", "Segments": [30, 28, 54, 6, -1]},
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Appendix 1 - Indelly Configuration

```
{
  "Taxon": "Italian", "Segments": [30, 28, 1, 6, -1]},
  "Taxon": "PortugueseBrazil", "Segments": [30, 28, 1, 16, -1]},
  "Taxon": "Portuguese", "Segments": [30, 28, 70, 16, -1]},
  "Taxon": "Catalan", "Segments": [32, 28, 24, -1, -1]},
  "Taxon": "Walloon", "Segments": [30, 28, 24, -1, -1]},
  "Taxon": "Friulian", "Segments": [30, 31, 13, -1, -1]},
  "Taxon": "Romanian", "Segments": [30, 28, 24, -1, -1]}
}],
{"Name": "Sea", "Data": [
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  "Taxon": "French", "Segments": [25, 38, 61, -1]},
  "Taxon": "Spanish", "Segments": [25, 28, 62, -1]},
  "Taxon": "Italian", "Segments": [25, 28, 60, 0]},
  "Taxon": "PortugueseBrazil", "Segments": [25, 28, 61, -1]},
  "Taxon": "Portuguese", "Segments": [25, 28, 62, -1]},
  "Taxon": "Catalan", "Segments": [25, 28, 60, -1]},
  "Taxon": "Walloon", "Segments": [25, 0, 61, -1]},
  "Taxon": "Friulian", "Segments": [25, 31, 60, -1]},
  "Taxon": "Romanian", "Segments": [25, 28, 60, 0]}
}],
{"Name": "Salt", "Data": [
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  "Taxon": "French", "Segments": [17, 38, 30, -1, -1]},
  "Taxon": "Spanish", "Segments": [17, 28, 30, -1, -1]},
  "Taxon": "Italian", "Segments": [17, 28, 30, 0, -1]},
  "Taxon": "PortugueseBrazil", "Segments": [17, 28, 8, -1, -1]},
  "Taxon": "Portuguese", "Segments": [17, 28, 30, -1, -1]},
  "Taxon": "Catalan", "Segments": [17, 28, 30, -1, -1]},
  "Taxon": "Walloon", "Segments": [17, 0, -1, -1, -1]},
  "Taxon": "Friulian", "Segments": [17, 31, 30, -1, -1]},
  "Taxon": "Romanian", "Segments": [17, 28, 60, 0, -1]}
}],
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  "Taxon": "French", "Segments": [13, -1, 0, -1, 61, -1]},
  "Taxon": "Spanish", "Segments": [13, 12, 0, -1, 60, 28]},
  "Taxon": "Italian", "Segments": [13, -1, 38, 60, 60, 28]},
  "Taxon": "PortugueseBrazil", "Segments": [13, -1, 0, -1, 61, 29]},
  "Taxon": "Portuguese", "Segments": [13, -1, 38, -1, 61, 29]},
  "Taxon": "Catalan", "Segments": [13, -1, 38, -1, 60, 4]},
  "Taxon": "Walloon", "Segments": [13, -1, 39, -1, 61, -1]},
  "Taxon": "Friulian", "Segments": [13, 12, 38, -1, 60, 0]},
  "Taxon": "Romanian", "Segments": [72, -1, 28, -1, 60, 4]}
}],
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  "Taxon": "Spanish", "Segments": [24, 28, 30, 7, -1, -1, 20, 28, -1]},
  "Taxon": "Italian", "Segments": [24, 28, 30, 7, 10, 7, 20, 0, -1]},
  "Taxon": "PortugueseBrazil", "Segments": [24, 28, 30, 7, 3, 34, -1, -1, -1]},
  "Taxon": "Portuguese", "Segments": [24, 29, 30, 7, 3, 35, -1, -1, -1]}
]}
```

Appendix 1 - Indelly Configuration

```
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    {"Taxon": "Latin", "Segments": [20, -1, 0, -1, 23, 16, 30, 28]},
    {"Taxon": "French", "Segments": [20, 12, 9, -1, -1, -1, 30, 15]},
    {"Taxon": "Spanish", "Segments": [20, 12, 0, -1, 23, -1, 30, 28]},
    {"Taxon": "Italian", "Segments": [20, -1, 0, 23, 23, -1, 12, 28]},
    {"Taxon": "PortugueseBrazil", "Segments": [20, -1, 38, -1, 19, 8, -1, 29]},
    {"Taxon": "Portuguese", "Segments": [20, -1, 38, -1, 19, 8, -1, 29]},
    {"Taxon": "Catalan", "Segments": [20, -1, 0, -1, -1, 8, 30, 4]},
    {"Taxon": "Romanian", "Segments": [20, 0, 1, 16, 60, 4, -1, -1]}
  ]},
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    {"Taxon": "Italian", "Segments": [13, 39, 20, -1, 0, 23, 60, 0]}
  ]},
{
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    {"Taxon": "French", "Segments": [13, -1, 0, 20, -1, 38, 23, 61, -1, -1]},
    {"Taxon": "Spanish", "Segments": [13, -1, 7, 20, 12, 0, 23, 30, 28, 17]},
    {"Taxon": "Italian", "Segments": [13, -1, 39, 20, -1, 0, 23, 60, 0, -1]},
    {"Taxon": "Portuguese", "Segments": [13, 62, -1, -1, -1, 38, 19, -1, 29, 21]},
    {"Taxon": "Catalan", "Segments": [13, -1, 4, 20, -1, 0, 23, 62, 4, 17]}
  ]},
{
  "Name": "Fog", "Data": [
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    {"Taxon": "French", "Segments": [76, 15, 25, 0, -1, -1]},
    {"Taxon": "Spanish", "Segments": [76, 16, 25, 28, 13, 28]},
    {"Taxon": "Italian", "Segments": [76, 16, 25, 31, 13, 28]},
    {"Taxon": "PortugueseBrazil", "Segments": [76, 16, 25, 28, 17, 29]},
    {"Taxon": "Portuguese", "Segments": [76, 16, 25, 28, 17, 29]},
    {"Taxon": "Friulian", "Segments": [76, 16, 25, 28, 13, 0]}
  ]},
{
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    {"Taxon": "Romanian", "Segments": [40, 80, 40, -1, 4]}
  ]},
{
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    {"Taxon": "French", "Segments": [17, 12, 38, 30, -1, -1]},
    {"Taxon": "Spanish", "Segments": [68, 12, 0, 30, 6, -1]},
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    {"Taxon": "PortugueseBrazil", "Segments": [17, -1, 38, 8, -1, -1]},
    {"Taxon": "Portuguese", "Segments": [17, -1, 38, 8, -1, -1]},
    {"Taxon": "Catalan", "Segments": [17, -1, 38, 30, -1, -1]},
    {"Taxon": "Walloon", "Segments": [17, -1, 27, 61, -1, -1]},
    {"Taxon": "Friulian", "Segments": [40, -1, 27, 30, -1, -1]},
    {"Taxon": "Romanian", "Segments": [40, -1, 0, 62, -1, -1]}
  ]},
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    {"Taxon": "French", "Segments": [19, -1, 71, -1, -1, -1, -1]},
    {"Taxon": "Spanish", "Segments": [23, 12, 0, 20, 13, 6, -1]},
  ]}
}
```

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```
{
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  {"Taxon": "Portuguese", "Segments": [19, -1, 46, -1, 13, 16, -1]},
  {"Taxon": "Catalan", "Segments": [23, -1, 0, 20, -1, -1, -1]},
  {"Taxon": "Walloon", "Segments": [19, -1, 46, -1, -1, -1, -1]},
  {"Taxon": "Friulian", "Segments": [19, -1, 7, 20, 13, -1, -1]},
  {"Taxon": "Romanian", "Segments": [19, -1, 37, 20, 13, -1, -1]}
]},
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  {"Taxon": "French", "Segments": [76, -1, 58, -1, -1, -1]},
  {"Taxon": "Spanish", "Segments": [76, 8, 0, 1, 6, -1]},
  {"Taxon": "Italian", "Segments": [76, 8, 9, 24, 6, -1]},
  {"Taxon": "PortugueseBrazil", "Segments": [76, -1, 6, 1, 16, -1]},
  {"Taxon": "Portuguese", "Segments": [76, -1, 6, 70, 16, -1]},
  {"Taxon": "Catalan", "Segments": [76, -1, 9, 24, -1, -1]},
  {"Taxon": "Walloon", "Segments": [76, -1, 64, -1, -1, -1]},
  {"Taxon": "Friulian", "Segments": [76, -1, 14, 24, -1, -1]},
  {"Taxon": "Romanian", "Segments": [76, -1, 6, 24, -1, -1]}
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  {"Taxon": "Italian", "Segments": [23, 60, 16, 40, 31, 60, 0]},
  {"Taxon": "Walloon", "Segments": [23, 61, 14, 30, 0, -1, -1]},
  {"Taxon": "Friulian", "Segments": [23, 60, 16, 74, 31, -1, -1]}
]},
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  {"Taxon": "French", "Segments": [24, 61, 28, 25, 0, -1, -1]},
  {"Taxon": "Spanish", "Segments": [24, -1, 0, 25, 28, 62, -1]},
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  {"Taxon": "PortugueseBrazil", "Segments": [24, -1, 73, 25, 28, 62, 0]},
  {"Taxon": "Portuguese", "Segments": [24, -1, 67, 25, 28, 61, 0]},
  {"Taxon": "Catalan", "Segments": [24, 60, 4, 25, 28, -1, -1]}
]},
{"Name": "ToBurn", "Data": [
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  {"Taxon": "French", "Segments": [76, 30, 71, -1, 23, 0, -1, -1, -1]},
  {"Taxon": "Spanish", "Segments": [76, 30, 28, -1, 25, 0, 28, 62, -1]},
  {"Taxon": "Italian", "Segments": [76, 12, 28, 25, 25, 28, 60, 0, -1]},
  {"Taxon": "Catalan", "Segments": [76, 55, 28, 25, 28, -1, -1, -1, -1]}
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  {"Taxon": "Spanish", "Segments": [28, 62, 18, 0, 62, -1]},
  {"Taxon": "Italian", "Segments": [28, 60, 18, 0, 60, 0]},
  {"Taxon": "PortugueseBrazil", "Segments": [28, 61, 18, 0, 61, -1]},
  {"Taxon": "Portuguese", "Segments": [29, 62, 18, 0, 62, -1]},
  {"Taxon": "Romanian", "Segments": [28, 62, 18, 0, -1, -1]}
]},
]
```

Appendix 1 - Indelly Configuration

```
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    {"Taxon": "French", "Segments": [76, 30, 28, 1, 61, 0, -1, -1]},
    {"Taxon": "Spanish", "Segments": [76, 30, 28, 1, 62, 28, 62, -1]},
    {"Taxon": "Italian", "Segments": [76, 30, 28, 1, 60, 28, 60, 0]},
    {"Taxon": "PortugueseBrazil", "Segments": [76, 30, 28, 54, 61, 28, 61, -1]},
    {"Taxon": "Portuguese", "Segments": [76, 30, 28, 1, 62, 28, 62, -1]}
  ]
},
{
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    {"Taxon": "French", "Segments": [43, -1, 17, 71, -1, 18, 12, 0, -1, -1]},
    {"Taxon": "Spanish", "Segments": [0, 20, 68, 0, 20, 18, -1, 0, 62, -1]},
    {"Taxon": "Italian", "Segments": [7, 20, 40, 38, 20, 18, 12, 28, 60, 0]},
    {"Taxon": "PortugueseBrazil", "Segments": [69, -1, 17, 0, 20, 10, 11, 28, 62, -1]},
    {"Taxon": "Portuguese", "Segments": [69, -1, 17, 46, -1, 18, 12, 28, 62, -1]},
    {"Taxon": "Catalan", "Segments": [4, 20, 17, 0, 20, 18, -1, -1, 62, 4]},
    {"Taxon": "Romanian", "Segments": [37, 20, 40, 7, 20, 18, 3, 0, -1, -1]}
  ]
},
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    {"Taxon": "Italian", "Segments": [16, 17, 13, 6, 30, 28, 60, 0]},
    {"Taxon": "Romanian", "Segments": [16, 17, 13, 16, 60, 28, -1, -1]}
  ]
},
{
  "Name": "Green", "Data": [
    {"Taxon": "Latin", "Segments": [8, 7, 60, 7, 18, 0, 25]},
    {"Taxon": "French", "Segments": [19, 0, 61, -1, -1, -1, -1]},
    {"Taxon": "Spanish", "Segments": [23, 0, 62, -1, 18, 0, -1]},
    {"Taxon": "Italian", "Segments": [19, 0, 60, -1, 18, 0, -1]},
    {"Taxon": "PortugueseBrazil", "Segments": [19, 0, 62, -1, 18, 37, -1]},
    {"Taxon": "Portuguese", "Segments": [19, 0, 62, -1, 18, 37, -1]},
    {"Taxon": "Catalan", "Segments": [19, 38, 62, -1, 13, -1, -1]},
    {"Taxon": "Walloon", "Segments": [19, 38, 61, -1, -1, -1, -1]},
    {"Taxon": "Friulian", "Segments": [19, 38, 60, -1, 13, -1, -1]},
    {"Taxon": "Romanian", "Segments": [19, 0, 62, -1, 18, 0, -1]}
  ]
},
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  "Name": "Year", "Data": [
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    {"Taxon": "French", "Segments": [71, -1, -1, -1, -1]},
    {"Taxon": "Spanish", "Segments": [28, -1, 48, 6, -1]},
    {"Taxon": "Italian", "Segments": [28, 20, 20, 6, -1]},
    {"Taxon": "PortugueseBrazil", "Segments": [29, -1, 20, 16, -1]},
    {"Taxon": "Portuguese", "Segments": [29, -1, 20, 16, -1]},
    {"Taxon": "Catalan", "Segments": [28, -1, 48, -1, -1]},
    {"Taxon": "Walloon", "Segments": [41, -1, -1, -1, -1]},
    {"Taxon": "Friulian", "Segments": [28, -1, 63, -1, -1]},
    {"Taxon": "Romanian", "Segments": [28, 20, -1, -1, -1]}
  ]
},
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  "Name": "And", "Data": [
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    {"Taxon": "French", "Segments": [0, -1]},
    {"Taxon": "Spanish", "Segments": [7, -1]}
  ]
}
```

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{
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  {"Taxon": "PortugueseBrazil", "Segments": [20, 6, 25, 7, -1]},
  {"Taxon": "Portuguese", "Segments": [20, 6, 25, 37, -1]},
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  {"Taxon": "Walloon", "Segments": [20, 59, -1, -1, -1]},
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  {"Taxon": "Romanian", "Segments": [20, 16, 25, 0, -1]}
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  {"Taxon": "French", "Segments": [30, 71, -1, 1, -1, -1]},
  {"Taxon": "Spanish", "Segments": [30, 0, 63, 1, 8, 28]},
  {"Taxon": "Italian", "Segments": [30, 7, 20, 1, 8, 28]},
  {"Taxon": "PortugueseBrazil", "Segments": [30, 69, -1, 1, 8, 29]},
  {"Taxon": "Portuguese", "Segments": [30, 69, -1, 1, 8, 29]},
  {"Taxon": "Walloon", "Segments": [30, 87, -1, -1, -1, -1]},
  {"Taxon": "Friulian", "Segments": [30, 38, 20, 54, -1, 38]},
  {"Taxon": "Romanian", "Segments": [30, 7, 25, 23, -1, 4]}
]}
]
}
```

Appendix 2 - RevBayes Source File

```
#####
# RevBayes Source File for Linguistomics Project #
#####
clear()
path = "C:/Users/shawn/Documents/Code/Linguistomics/Run/Run1/"
gammapath = path+"Gamma.trees"

# Read in discrete character data
data = readDiscreteCharacterData(path+"Characters.nex")

# Get some useful variables from the data. We need these later on
num_taxa <- data.n taxa()

# Number of branches in an rooted tree
num_branches <- 2 * num_taxa - 2
taxa <- data.t taxa()

# Create helper variables
moves = VectorMoves()
monitors = VectorMonitors()

#####
# Tree Model #
#####

# Outgroup is a clade consisting of one language
out_group = clade("Latin")

# Prior distribution on the tree topology
topology ~ dnUniformTopology(taxa, outgroup=out_group, rooted=TRUE)

# These are moves that change the tree topology
moves.append(mvNNI(topology, weight=num_taxa/2.0))
moves.append(mvSPR(topology, weight=num_taxa/10.0))

# Branch length prior
for (i in 1:num_branches) {
  bl[i] ~ dnExponential(10.0)
  moves.append(mvScale(bl[i]))
}

TL := sum(bl)

psi := treeAssembly(topology, bl)
```

Appendix 2 - RevBayes Source File

```
#####
# Substitution Model #
#####

# This is the number of unique characters from the segment filters
unique_chars = 88

# Jukes-Cantor model
Q <- fnJC(unique_chars)

#####
# Gamma model for among-site variation #
#####
alpha ~ dnUniform(0, 10.0)
moves.append(mvScale(alpha, weight=1))
site_rates := fnDiscretizeGamma(alpha, alpha, 4)

#####
# PhyloCTMC Model #
#####
seq ~ dnPhyloCTMC(tree=psi, Q=Q, type="Standard", siteRates=site_rates)
seq.clamp(data)

#####
# Analysis #
#####

# You can use any node as the argument of model()
mymodel = model(psi)
n_gen = 10

# This prints monitors to the screen
monitors.append(mnScreen(TL, printgen=n_gen))

# This monitors the trees and puts them in a file
monitors.append(mnFile(psi, filename=gammapath, printgen=n_gen))

# Model monitor
monitors.append(mnModel(filename=path+"Gamma.log", printgen=n_gen))
mymcmc = mcmc(mymodel, moves, monitors, nruns=1, combine="mixed")
mymcmc.run(generations=1000)

# Summarizes the MCMC runs
mymcmc.operatorSummary()

#####
# Post processing #
```


Appendix 2 - RevBayes Source File

```
#####  
treetrace      = readTreeTrace(gammapath, outgroup=out_group)  
map_tree       = mapTree(treetrace, path+"Gamma_MAP.tree")  
mcc_tree       = mccTree(treetrace, path+"Gamma_MCC.tree")  
consensus_tree = consensusTree(treetrace, path+"Gamma_Consensus.tree")  
  
# Exit the program  
q()
```

Appendix 3 - Segments used in the word list

| Char. | Segment | Words containing this segment |
|-------|---------|--|
| 0 | e | ego:, ew, jew, usted, vose, vose, voste, ekkumhi:k, k ^w em, kjen, ʃfine, ke, ʃe, k ome, ʃemu:t, nek, ne, alter, due, tres, tre, tref, k ^w i:nk ^w e, ʃiŋkwe, grandem, gr ande, grande, majjorem, mare, le, pekeɲo, pekenu, pikenu, etɾwa, estrefjo, str etto, piskem, peθ, peʃfe, peʃ, peʃte, awem, abe, awikellum, useɿ, passerem, pa ssero, pasære, flo:rem, fjo:re, floare, ne, nariʃe, bibere, beber, bere, bebeɿ, biʃe r, bevi, komedere, komer, kome, kumer, manduka:re, mǎʒe, mandʒare, morde: re, morðer, mǎrdere, moɾdeɿ, muɾðer, morsika:re, morsikare, murseka, su:ger e, syse, suðʒe, konspuere, kǒspyē, eskupir, sputere, esputar, sputare, ski:re, sa pere, saber, sape:re, sabɐɿ, sɐber, kogno:skere, konoθer, konoffere, kopeseɿ, k upiser, kuŋaʃte, ko:gita:re, kuɪde, koðitare, kuðʒeta, pe:nsa:re, pǎse, pensar, pensare, pēse, peŋsa:, time:re, temer, teme:re, temɐɿ, timer, temə, temi, teme, t remere, tremer, tremare, tremɐɿ, trimer, dormire, wi:were, vi:vere, viveɿ, viv er, mori:re, moɾeɿ, muɾer, nata:re, nwotare, naviga:re, naze, nabegar, naviga re, wola:re, vole, volare, vǒle, zvola:re, ʃəmine, kammina:re, ʃimine, maɾʃe, mergere, mǎrdʒere, merðʒe, ambita:re, andare, weni:re, benir, veni:re, veni, ek stendere, etǎdɿ, ekstender, estendere, istēdeɿ, iʃtēder, æstendrə, ekstinde, ja ke:re, zeziɿ, jaθer, ɟaʃfe:re, zɐzeɿ, zɐzer, ɟere, jesi, sede:re, ser, sedere, seɿ, ʃe dɟə, sedenta:re, sentar, senta:, sta:re, estar, leva:re, lǎve, jebar, levaɿ, leva:, alt iare, ose, altsare, torna:re, tuɾne, tornare, tu:rne, gyra:re, ziɾe, ɟira:re, viɾe, v ira:re, tork ^w :ere, torθer, tǎrʃere, turser, tǎarʃe, kadere, kaer, kade:re, ʃjade, t ōbe, tume, tene:re, tener, tene:re, teɿ, ter, tsine, segurar, eksprimere, epǎdɿ, e kspremir, spremer, iʃpremeɿ, iʃpremer, əspremə, esprimi, skreme, serrere, se rar, seɾa, serare, seɾe, θerar, serrare, sere, appekto:re, apretar, stringere, et ɾdɿ, estreɲir, strindʒere, stringe, strindʒe, frika:re, fɾeje, fregar, frega:re, fre a, freka, frikta:re, fɾote, frettare, lawa:re, lave, lava:re, tergere, tǎrdʒere, ekst ergere, estarsir, ʃterdʒe, eksuka:re, esɟije, enxugar, affuga:re, suwe, limpida:r e, tirare, tiɾe, tire, pulsa:re, puse, trahere, trarre, traze, trɐzer, tradʒe, imping ere, impindʒere, impindʒe, jaktare, zǎte, eʃar, ɟettare, ɟete, lankea:re, lǎse, l antʃare, e:runka:re, arrontʃare, liga:re, lie, legar, lega:re, lea:, lega, apta:re, k o:nsuere, koser, kuʃi:re, kuzer, ɟqase, komputa:re, kǒte, konta:re, kǒte, e:num era:re, enumeɾe, enumerar, enumerare, enumera, di:kere, deθir, di:re, dizer, z iʃe, ekspo:nere, sporre, spune, kanta:re, ʃǎte, ʃǎte, lu:dere, joka:re, zwe, ɟok a:re, ɟuwe, flu:ktua:re, flyktɟe, fluttuare, fluita:re, fluitare, fluere, flye, flu ire, ko:la:re, kule, kola:re, kǒle, ekskurrere, eskurir, skorrere, iʃkoɾeɿ, iʃkurer, skurɟe, kurrere, korer, korrere, koɾeɿ, kuɾer, kurɟe, gela:re, zǎle, elar, ɟela re, ɟale, glakia:re, glase, gjatʃjare, inglakia:re, ingetsa, so:lem, sole, sqare, sor eli, lune, etwal, estreja, stella, istrelɐ, iʃtrelɐ, stele, age, ploje, ploaje, mare, m eɿ, sa:lem, sale, se, sare, terra, teɿ, tjera, teɾe, tjere, ka:li:ginem, kalidʒine, neb ula, njebla, nebbja, newlǎ, negurǎ, tene:braj, tɐ:nebre, tene:bra:s, tenɐɿ, tinjeb las, tɐ:nebre, tǎnebrǎs, fyne, fumate, θjelo, ʃer, wentum, bjento, ben, fwego, bɾyle, bruʃa:re, bɾu:le, krema:re, kɾame, kemaɾ, kremare, kejmare, kejmaɾe, f lamma:re, flǒbe, flamear, fjammare, arde:re, arder, ardere, aɾdeɿ, ɐrder, arde, flagra:re, flagɾe, flagrare, inkendere, ēsǎdʒe, enθender, inʃendjare, iʃendʒiar, ənsendrǎ, inʃindʒe, ustula:re, ustolare, wiridem, veɿ, berde, verde, verdi, ver de, et, e, no:men, no:me, nume, no:minem, nombre, leŋgwa |

Appendix 3 - Segments used in the word list

| | | |
|---|----|---|
| 1 | g | ego:, awgũ, ałgũ, əlgu, grã, grande, grande, grēdgi, grēdi, longum, lungo, lōgu, largo, lərgu, largu, angustus, angosto, angusto, musəga, musəgar, su:gere, su gaʁ, sugaʁ, kogno:skere, ko:gita:re, nabegar, navigare, nəbəga, naviga, seguraʁ, siguraʁ, fregar, frəga, iffrigaʁ, tergere, ekstergere, enxugar, affuga:re, ɛʃugaʁ, əʃuga, liga:re, legar, lega:re, zogax, zuga, flugtwaʁ, gela:re, glakia:re, glase, gja tʃjare, gləsa, inglakia:re, agwə, lago, lagu, ka:li:ginem, negurə, fwego, fogu, f lagra:re, flagxə, flagrar, flagrare, flagrar, lāg, lengwa, lingwa, ligwə |
| 2 | o: | ego:, no:s, no:i, no:, wo:s, vo:i, vo:, k ^w ando:, k ^w o:modo, no:n, to:tus, po:k, duo:s, florem, fjo:re, flo:r, kogno:skere, ko:gita:re, ko:nsuere, ekspo:nere, ko:la:re, s o:lem, no:men, no:me, no:minem |
| 3 | ʒ | zə, ʒə, ləʒ, mǎʒe, mǐʒax, mǐʒar, mənʒa, kuzitaʁ, kuzitar, naze, zezix, zəzəx, zəzəʁ, zawrə, zixə, ziraʁ, zira, əʃtrɪʒir, əʃtrɪʒir, əstərzi, zəte, zejtar, ʒwe, zogax, zuʁar, zuga, zuka, zəle, zilar, zəla, pluʒə, kalizɛj, kəlizɛj, inʃindʒe |
| 4 | ə | zə, əla, əlgu, altrə, dowə, amplə, pəti, pətit, əstret, pasəre, bəwrə, mənʒa, mus əga, musəgar, musəʁa, əskupi, səʃe, kunɛʃə, pənsa, pəsa, temə, biwrə, nəda, n əbəga, ʃəmine, kəmina, vənix, bəni, əstendrə, zawrə, zəʃʃə, əsta, ləve, ləba, ə lsa, tɔrsə, kawrə, kədə, tənix, təni, ifprəməx, ifprəməʁ, əsprəmə, səraʁ, səra, əʃtrɪʒir, əʃtrɪʒir, əstreɲə, frəga, frəsa, əstərzi, əʃuga, trəwrə, əmpɛrə, zəte, lə nsa, kənta, əskorə, korə, zəle, zəla, gləsa, lunə, lunə, əstel, ajɣwə, apə, pluʒə, tərə, tsarə, newlə, negurə, tənəbrəs, ʃɛaʃə, krəma, ənsendrə, limbə |
| 5 | j | jo, aja, jaθer, jebar, estreja, jubja |
| 6 | o | jo, io, jo, vose, veste, nos, no, bos, vof, vos, kwando, k ^w o:modo, komo, kome, komu, no, non, omne:s, oɲni, todo, tutto, todū, tođū, tot, muʃo, molto, mol, molc, tanto, okœ, alguno, alkuno, poko, pəko, powku, otə, otro, altro, owtru, uno, dos, dowə, θinko, maɲo, maɲno, majjorem, longum, longo, lungo, loŋ, la rɣo, largo, lato, anʃo, ampjo, pekeno, pitʃino, pikkolo, angosto, angusto, estr eʃo, stretto, wazo, utʃello, paxaro, passero, flor, flox, naso, na:so, komedere, komer, kome, morde:re, moʁdɐ, moʁðer, moʁdɛx, morsika:re, moskar, morsik are, konspuere, kogno:skere, konothər, konoffere, koɲesəx, koɲosi, koʃɪtare, dormi:re, dormir, doʁmiʁ, dormi, mori:, morir, mori:re, moʁəx, nwoʔare, wol a:re, vole, bolar, volare, voax, zvola:re, zvola:, ose, torna:re, tornar, tornare, t oʁnaʁ, torna:, toʁk ^w e:re, toʁθer, appektora:re, fʁote, frotar, arrontʃa:re, koser, komputa:re, kontar, konta:re, konta:, sporre, joka:re, ɟoka:re, zogax, kolar, ko la:re, koax, skorrere, ifkoʁəx, əskorə, skori:, koreʁ, korrere, koʁəx, korə, kori, sol, sole, soliculus, soreli, o, pjodɟa, ploje, lago, lago, θjelo, ʃɛlo, bjento, vento, fokum, fwego, fwəko, fogu, foɣu, fok, ustolare, apo, anno, nomi, nomi, nom bre |

Appendix 3 - Segments used in the word list

| | | |
|----|----|--|
| 7 | i | io, no:i, vo:i, isi, aki, kwi, eki, illa:k, ibi:, vi, ai, ei, k ^w is, ki, kwi, ʃfine, k ^w id, ni, oŋni, altri, alius, ʰinko, ʃiŋkwe, siŋk, ʃiŋk, ʃinʃ, grēdʒi, pittitus, pəti, pətit, piti, pittinus, pitʃino, putsin, pitulus, pikkolo, piʃul, striktus, istrejtʉ, piskem, pejʃi, avi, awikellum, nariθ, nariʃe, naris, nəriʃ, bibere, bevi, morsika:re, mor sikare, kuspiʁ, kuspɪr, eskupɪr, əskupi, ʃti, kinɔh, kɔposi, kɔ:ɡita:re, kɔide, k widar, kɔdʒitare, kuzitaʁ, kuzitar, time:re, temi, trima:, dɔʁmiʁ, dɔʁmi, dɔʁm iʁ, durmir, durmi, dwaʁmi, dormi, vivʁ, bibɪr, viveʁ, viver, biwɾə, vivi, via, muʁiʁ, morɪr, muri, mɔri, muri, naviga:re, navigare, naviga:, naviga, ʃəmine, kaminar, kammina:re, kəmiʁaʁ, kəmiʁar, kəmina, ʃimine, ʃjamina, ambita:re, vənɪʁ, benɪr, vɪʁ, vir, bəni, vini, vini:, veni, istēdeʁ, iʃtēder, ekstinde, zezɪʁ, jesi, altia:re, ziʁe, xiraʁ, dʒira:re, ziraʁ, zira, dʒira:, viʁe, biraʁ, vira:re, viraʁ, bir a, kɛɪr, tənɪʁ, təni, tini, tinji, tsine, eksprimere, ekspremiʁ, iʃprəmeʁ, iʃprəmer, esprimi, stringere, estrepiʁ, strindʒere, əʃtriʒɪr, əʃtriʒɪr, stringe, frika:re, frik ta:re, frisaʁ, estarsɪr, əstərzi, esɔije, limpida:re, limpiʁar, tira:re, tiʁe, tiraʁ, ʃira, tira, tire, tira:, impingere, impindʒere, impindʒe, xita, liga:re, lie, ʎiʁa, kuzi, k uzi, diʁ, deθɪr, dizeʁ, di, ziʃe, ludɪr, fluita:re, fluitare, fluiʁ, fluire, flwiʁ, flw iʁ, flui, eskurɪr, iʃkɔʁeʁ, iʃkureʁ, kuʁiʁ, kori, glakia:re, inglakia:re, solculus, soreli, istrele, pluwia, plɔi, ka:li:ɡinem, kalina, kalidʒine, kalizɛʃ, kɛlizɛʃ, tinj eblas, kajkia, vint, inkendere, inʃendjare, inʃindʒe, wiridem, i, ʃi, nomi, no: minem, ling ^w a, lingwa, limbə |
| 8 | w | ew, jew, wo:s, kwi, kwi, kwa, kwɛ:, kwando, kwɛdu, kwan, kwand, kwant, a wgū, powku, owtru, aw, dowə, tɾwa, ʃiŋkwe, etɾwa, pwasə, awem, aw, awik ellum, wazo, bwəʁ, bɛwɾə, savwaʁ, kwidar, dwaʁmi, wi:were, biwɾə, nwotare, wola:re, vwar, wenɪ:re, zawɾə, swaʁ, ʃwaʁ, kawɾə, lawa:re, suwe, tɾɛwɾə, zwe, dʒuwe, flugtwar, flwiʁ, flwɪr, sɔw, etwal, aɣwa, akkwa, agwə, ajɣwə, ɛw, pl uwia, saw, nəvwə, newlə, səw, wentum, fwego, fwoko, wiridem, lengwa, lin gwa, lɪgwə |
| 9 | ɔ | zɔ, vɔse, nɔjs, nɔʃ, vɔjs, kɔm, kɔmɛ, tɔ, pɔko, pɔk, flɔ, mɔrdere, kɔnetɾ, kinɔh, dɔʁmiʁ, mɔri, vɔle, tɔʁdɾ, tɔɾʃere, tɔrsə, lɔji:, kɔle, sɔw, sɔɫ, sɔl, sɔlɔ, sɔlej, nɔ ly, fwoko, fɔk, nɔm, nɔŋ |
| 10 | dʒ | dʒɪ, grēdʒi, mandʒare, sudʒe, kodʒitare, kudʒeta, nədʒi:, mɛrdʒere, mɛrdʒe, dʒaʃe:r e, dʒere, dʒira:re, dʒira:, strindʒere, strindʒe, tɛrdʒere, ʃtɛrdʒe, tradʒe, impindʒere, impindʒe, dʒettare, dʒete, dʒoka:re, dʒuwe, dʒuja:, skurdʒe, kurdʒe, dʒelare, dʒale, pjodɔʒa, kalidʒine, iʃendʒɪr |
| 11 | ɪ | dʒɪ, na:ɾɪs, iʃendʒɪr |
| 12 | j | jo, jew, nɔjs, vɔjs, kjen, majjorem, ampjo, uʃjel, fjo:re, skuja, kujda, ʃjamina, jake:re, jesi, ʃjade, tinji, esɔije, suja:, limpiʁar, jakta:re, lɔji:, joka:re, dʒuja:, gjat ʃjare, jubja, pjodɔʒa, ploje, plɔaje, tjera, tjere, njɔly, njebla, nebbja, tinjeblas, s jel, θjelo, bjento, fjammare, ɛsɔdʒe, inʃendjare, iʃɛdʒar |

Appendix 3 - Segments used in the word list

| | | |
|----|----|---|
| 13 | t | tu:, ty, tu, usted, voste, kwant, t̪emut, to:tus, tu, todo, tutto, todū, toðu, tot, tɔ, dut, multus, molto, m̪ũjt̪u, mult, tantus, tanto, t̪ēt̪u, t̪ēt̪u, tant, tanc, alter, ot̪x, otro, altro, owtru, altrə, ɔt, altri, alt, tre:s, t̪xwə, tres, tre, tref, t̪res, trø:, t re:, trej, grant, la:tum, lato, latu, lat, pittitus, p̪əti, p̪ətit, piti, pittinus, pit̪f̪ino, pitulus, angustus, angosto, angusto, ɪngust, striktus, et̪xwə, estref̪o, stretto, i strejt̪u, iʃtrejt̪u, əstret, st̪xø:, stret, strimt, pest̪e, ut̪f̪ello, sputere, esputar, spu tare, ʃti, k̪onet̪x, kun̪əʃte, ko:gitare, koʃgitare, kuzit̪x, kuzitar, kuʃgeta, tim ere, temer, temere, tem̪x, timer, temə, temi, teme, tremere, trem̪er, tremare, trem̪x, trim̪er, trim̪a:, nata:re, nwotare, ambita:re, ekstendere, et̪ād̪x, eksten der, estendere, ist̪ēd̪x, iʃt̪ēd̪er, əstendrə, ekstinde, sedenta:re, sentar, s̪ētar, s ent̪a:, sta:re, et̪x, estar, iʃtar, əsta, sta:, sta, altia:re, alt̪f̪a:, torna:re, t̪ux̪ne, torn ar, tornare, toʊn̪x, turnar, turna, t̪ur̪ne, torna:, turna, toʊk̪w̪e:re, t̪x̪d̪x, toʊθe r, toʊʃere, turser, toʊsə, toʊaʃe, t̪ōbe, tumb̪ar, t̪ōb̪x, t̪ōb̪ar, tumba, tume, tene: re, t̪əni̪x, tener, tene:re, t̪ex, ter, t̪əni, tini, tinji, appekto:re, apretar, ɐpiɾtar, stringere, et̪x̪ēd̪x, estrepiɾ, strind̪ere, əʃtriʒir, əʃtriʒir, əstreɲə, stringe, stren gi:, strind̪e, frikta:re, f̪x̪ote, f̪rotaɾ, frettare, tergere, t̪er̪d̪ere, ekstergere, esta rsir, əstərzi, ʃter̪d̪e, tira:re, ti̪x̪e, tirar, tira, tire, tira:, trahere, t̪x̪x̪, trarre, tra ze, t̪r̪ez̪er, t̪r̪əw̪rə, traj, trad̪e, jakta:re, ʒəte, d̪ettare, zejt̪ar, xita, d̪ete, apta:re, atar, ɐtar, komputa:re, k̪ōte, kontar, konta:re, k̪ōtar, kumta, k̪ōte, kontar, kan ta:re, ʃāte, kantar, k̪ētar, k̪ənt̪a, t̪f̪āte, cantar, kinta, flu:ktua:re, flykt̪e, flug twar, fluttuare, flutu̪x̪, flutuar, fluktua, fluctua, fluita:re, fluitare, g̪jat̪f̪jar e, ste:lla, etwal, estreja, stella, ist̪rel̪ə, iʃt̪rel̪ə, əst̪el, st̪ø:l, stele, st̪e̪a, la:t, terra, t̪ex, t̪jera, t̪erra, t̪ex̪ə, t̪ex̪ə, t̪er̪ə, t̪ex̪, t̪jere, tene:braj, t̪e:nebre, tene:bra:s, teneb̪x, tinjeblas, t̪e:nebre, t̪r̪ev̪əʃ, t̪ənebr̪əs, fu:ma:ta, fumata, fuma:ta, fumate, went um, bjento, vento, v̪ēt̪u, vint, vint, ustula:re, ustolare, ustura, v̪ert, v̪ert, et |
| 14 | u: | tu:, t̪emut, u: num, u: ɛ:, su:gere, t̪ur̪ne, eksu:ka:re, pu:si:, lu:dere, flu:ktua:re, lu:na, plu:x̪, fu:ma:ta, fu:k, b̪u:le |
| 15 | y | ty, syse, sysi:, k̪ōsp̪ye, gyra:re, flykt̪e, flye, lyn, nj̪oly, fyme, b̪yle |

Appendix 3 - Segments used in the word list

| | | |
|----|---|---|
| 16 | u | tu, usted, nu, vu, bus, ekkumhi:k, kwēdu, komu, kum, nu, to:tus, tu, tutto, to du, toðu, dut, multus, mu, muʃo, mūjtu, mult, tantus, tētu, tētu, alguno, alk uno, əlgu, paɣkus, powku, owtru, alius, u: num, uno, un, uŋ, unu, duo:s, duaj, due, duas, duəs, duəʃ, siku, magnum, longum, lungu, lōgu, lunk, lung, largum, laɣgu, largu, la:tum, latu, amplum, ɛʃu, pittitus, pittinus, pekenu, pikenu, pu tsin, pitulus, piʃul, angustus, angusto, iŋgust, striktus, istrejtu, iʃtrɛjtu, awik ellum, utʃello, useɹ, utʃjel, pasəru, na:sus, kumer, manduka:re, mandukar, m urðer, musəga, musəgar, musəya, murseka, sugaɣ, sugar, cucar, suðe, konspu ere, kuspiɣ, kuʃpir, eskupir, əskupi, skujpa, sputere, esputar, sputare, spuda:, kupiser, kuneʃə, kuŋaʃte, kuzitaɣ, kuzitar, kujda, kuðgeta, durmir, durmi, d urmi, muɣiɣ, muɣer, muri, muri:, muri, bula, zburə, lua, tuɣne, turnar, turna, turna, turser, tumar, tumba, tume, segurar, siguraɣ, siyurar, enxugar, affug a:re, ɛʃugar, ɛʃuyar, əfuga, suwe, suja:, uska, pulsa:re, puse, puxar, puʃar, pul sa:, pulsa, e:runka:re, aruŋka, ko:nsuere, kudɣ, kuʃi:re, kuzer, kuzi, kuzi, ko mputa:re, kumta, e:numera:re, enumeɣe, enumerar, enumera:re, enumera, n umara, spune, ludir, xugar, zuyar, zuga, ɟuwe, ɟuja:, zuka, flu:ktua:re, flug twar, fluttuare, flutuax, flutuar, fluktua, fluctua, fluita:re, fluitare, fluere, fluir, fluire, flui, kule, kuar, kuɹa, ekskurrere, eskurir, iʃkurer, skurðe, kurr ere, kuɣiɣ, kuɣer, kurðe, solculus, luna, luɣ, ɹunə, lune, lunə, pluwia, jubja, juvə, pluzə, lakum, lagu, layu, nebula, negurə, fumata, fuma:ta, fumase, fu mate, kajlum, wentum, vētu, fokum, fogu, foyu, brufare, bruza:, ustula:re, u stolare, ustura, annum, ɛnu, nume |
| 17 | s | usted, vose, vose, voste, no:s, nos, nojs, wo:s, bos, vojs, bus, vos, isi, k ^w is, omn e:s, to:tus, multus, tantus, paɣkus, alius, duo:s, dos, dojs, duas, duəs, tre:s, tres, tres, sēk, siku, siŋk, pittitus, pittinus, pitulus, angustus, angosto, angusto, iŋ gust, striktus, estretʃo, stretto, istrejtu, əstret, stɣə, stɛt, strimt, piskem, pəs, pwasō, useɹ, passerem, passero, pasəru, pasəre, na:sus, naso, na:so, nas, na:s, nas, naris, na:ris, morsika:re, moskar, morsikare, musəga, musəgar, musəya, murseka, su:gere, syse, sugaɣ, sugar, sysi:, suðe, konspuere, kōspye, kuspiɣ, e skupir, əskupi, skujpa, sputere, esputar, sputare, spuda:, ski:re, sapere, savwa ɣ, saber, sape:re, sabɣ, səber, səβe, savø:ɣ, save:, kogno:skere, koɣesek, kupis er, koɣosi, pe:nsa:re, pāse, pensar, pensare, pēsax, pēsar, pānsa, pēsə, peɣsa:, p əsa, ekstendere, ekstender, estendere, istēdeɣ, əstendrə, ekstinde, jesi, sedere, swaɣ, ser, sedere, seɣ, sedenta:re, sentar, sētar, senta:, sta:re, estar, əsta, ɛs, st a:, sta, ose, aɹsa, aɹsar, əlsa, ho:si:, turser, tɣrsə, segurar, siguraɣ, siyurar, eksp rimere, ekspremir, spremere, əspremə, esprimi, skreme, serrere, serar, seɣa, s ərar, səra, serare, seɣe, serrare, siɣar, sere, stringere, estrepir, strindɣere, əstr epə, stringe, strɛngi:, strindɣe, frisar, frəsa, ekstergere, estarsir, əstərzi, eksu: ka:re, esɣije, suwe, suja:, uska, pulsa:re, puse, pu:si:, pulsa:, pulsa, lāse, lēsə, lē sar, ɹənsa, ko:nsuere, koser, ɣase, ekspo:nere, sporre, spune, ekskurrere, esk urir, skorrere, əskorə, skori:, skurðe, glase, gləsa, so:lem, sol, sole, sɔw, sɔɹ, sɔ l, sɔɹ, sɔare, solculus, sɔləj, soreli, ste:lla, estreja, stella, istreɣe, əstɛl, stə:l, st ele, stɛa, sa:lem, sɛl, sal, sale, saw, se, sa:l, sare, tene:bra:s, tinjeblas, tənebrəs, fumase, sjel, səw, sɛl, si:ɣ, ɛsədjə, isendɣiar, isədjər, ənsendrə, ustula:re, ustola re, ustura, si:k |

Appendix 3 - Segments used in the word list

| | | |
|----|----|---|
| 18 | d | usted, k ^w id, k ^w ando:, kwando, kwēdu, kwand, kind, k ^w o:modo, todo, todū, dut, duo:s, dø, dos, dojs, dojs, dō:, doj, duaj, due, dowə, duas, duəs, duəf, grandem, grande, grande, grēdi, komedere, manduka:re, mandukar, mordre:re, moɔdɔ, mordre:re, moɔdɔ, spuda:, kɔide, kwidar, kujda, kɔēdɔ, dormi:re, dɔɔmiɔ, do rmiɔ, dɔɔmiɔ, durmiɔ, durmi, dɔwɔmi, durmi:, dormi, nadar, nadaɔ, nəda, na da:, andar, andare, ēdaɔ, ēdar, ekstendere, etāda, ekstender, estendere, istēde ɔ, ištēder, əstendrə, ekstinde, sede:re, sedere, feda, sedenta:re, tɔdɔ, kadere, kade:re, fjadə, kədə, epēda, etēda, limpida:re, kudɔ, di:kere, diɔ, deθiɔ, di: re, dizer, di, di:ɔ, di:, ludere, ludir, pjodɔa, arde:re, aɔdɔ, arder, ardere, aɔdɔ, ɔder, arde, inkendere, ēsāde, enθender, inθendjare, īsēdjar, ənsendrə, inθin dze, wiridem, berde, verde, verdi, verde |
| 19 | v | vose, vɔse, voste, vu, vɔ:i, vɔjs, vɔf, vos, vɔ:, voj, vi, avi, avi, bevi, savwɔ, sa vɔ:ɔ, save:, vɔvɔ, vi:vere, viveɔ, viver, vivi, via, naviga:re, navigare, naviɔɔ, naviɔɔ, naviga:, naviga, vole, volare, voaɔ, vɔar, vɔle, zvola:re, zvola:, vɔniɔ, veni:re, viɔ, viɔ, vini, vɔni:, veni, leva:re, ləve, levaɔ, livar, leva:, viɔe, vira:re, virar, lave, lava:re, lavar, lava:, fuvə, nəvwə, tɔvəf, vā, vento, vētu, vē, vint, vint, vɔ, verde, verdi, vēt, vɔ, vēt, verde |
| 20 | n | no:s, nu, nos, no:i, nɔjs, nɔf, no, no:, noj, kjen, ffine, k ^w ando:, kwando, kwan, kwand, kwant, kind, no:n, nɔ, no, non, nēw, nu, nek, ni, ne, nēj, nēj, nē, omn e:s, tantus, tanto, tant, tanc, alguno, alkuno, u:num, uno, un, unu, k ^w i:ink ^w e, θ inko, ffinf, magnum, grandem, grande, grande, gran, grant, longum, longo, l ungo, lunk, lung, anθo, pittinus, pitfino, pekenu, pikenu, putsin, angustus, a ngosto, angusto, na:sus, ne, naso, na:so, nas, na:s, nas, nariθ, nariθe, naris, nər iθ, na:ris, manduka:re, mandukar, mandɔare, minka, konspuere, kogno:skere, kɔnɔtɔ, konoθer, konoffere, kunɔfə, kinɔh, kunɔafte, pensare, pensar, pensa re, pənsa, nata:re, nadar, nwotare, nadaɔ, nɔdar, nəda, nada:, naviga:re, naze, nabegar, navigare, naviɔɔ, naviɔɔ, nəbəga, nɔdɔi, naviga:, naviga, fəmine, kaminar, kammina:re, kəmina, ffinimine, ffinamina, andar, andare, weni:re, vən iɔ, benir, veni:re, bəni, vini, veni, ekstendere, ekstender, estendere, əstendrə, ekstinde, sedenta:re, sentar, senta:, torna:re, tɔɔne, tornar, tornare, tɔɔnaɔ, t urnar, turna, turne, torna:, turna, tenere, tənɔ, tener, tenere, tənɔ, tini, tinji, tsine, stringere, strindɔere, stringe, strəngi:, strindɔe, enxugar, impingere, imp indɔere, impindɔe, lankea:re, lanθar, lanθa:re, lənsa, lanci:, lanθa:, e:runka:re, arankar, arronθa:re, kɔnsuere, kontar, konta:re, konta:, e:numera:re, enume ɔe, enumerar, enumera:re, enumera, numara, ekspɔ:nere, spune, kanta:re, ka ntar, kənta, canta:, kinta, inglakia:re, ingetsa, lu:na, lyn, luna, lənə, lən, lune, lunə, ka:li:ginem, kalina, kalidɔine, nebula, njɔly, njebla, nebbja, nəvwə, newl ə, negurə, tene:braj, tɔnebre, tene:bra:s, teneɔ, tinjeblas, tɔnebre, tənebrəs, wentum, bjento, vento, ben, vint, vint, inkendere, enθender, inθendjare, īse ndɔjar, ənsendrə, inθindze, annum, anno, ənu, an, no:men, nɔ, no:me, nomi, n omi, nɔm, nɔ, nɔ, nume, no:minem, nombre, ling ^w a, lingwa, ləngə |
| 21 | f | nɔf, vɔf, dojs, duəf, tɔf, ēfu, ištɔjtu, pejsə, pejsi, pejsi, pejs, pejsə, nɔris, kus p iɔ, fti, konoffere, kunɔfə, kunɔafte, fəmine, mɔfə, ištēder, feda, iftar, altfa:, fwaɔ, ištɔmɔ, ištɔmer, əftrizir, əftrizir, ištɔrigar, ištɔriɔar, fterdɔ, affugar e, ēfugar, ēfuyar, əfuga, pufar, fāte, ištɔkɔɔ, ištɔkurer, ištɔrelə, fuvə, tɔvəf, fi |
| 22 | oj | noj, voj, dojs, dojs, doj, froj |

Appendix 3 - Segments used in the word list

| | | |
|----|---|---|
| 23 | b | bos, bus, ibi:, abe, bibere, bwax, beber, bere, bebeɐ, biβer, bəwrə, bə:ɐ, bevi, bəa, saber, sabex, səber, bibir, biwrə, nabegar, nəbəga, bolar, bula, zburā, ambita:re, benir, bəni, jebar, ʌəba, birar, bira, tōbe, tumbar, tōbax, tōbar, tumba, jubja, n ebula, njebla, nebbja, tene:braj, tɛ:nebre, tene:bra:s, tenɛbɐ, tinjeblas, tɛ:nebre, tənebrəs, bjento, ben, bɔyle, brutʃa:re, bɔu:le, bruza:, flābe, berde, nombre, li mbə |
| 24 | k | ekkumhi:k, aki, kwi, ɐki, illa:k, ki, ki:, kwi, kjen, kēj, kēj, kwa, ke, ki, kɛ, kwɛ:, kǎ, kwando, kwēdu, kwan, kwand, kwant, kind, kɔm, komo, kome, komu, k ɔmē, kum, nek, okœ, alkuno, paʊkus, poko, pɔko, powku, pɔk, pɔ:k, sɛk, θinko, ʃiŋkwe, siku, siŋk, ʃiŋk, lunk, ʌark, lark, pekeɾo, pekenu, pikenu, pikkolo, s triktus, piskem, awikellum, komedere, komer, kome, kumer, manduka:re, m andukar, minka, morsika:re, moskar, morsikare, murseka, konspuere, kɔspyɛ, kuspiɐ, kuspiɾ, eskupiɾ, əskupi, skuɟpa, ski:re, kogno:skere, kɔnɛtɐ, konothɛr, konoffere, kɔnesɛɐ, kupiser, kunɛʃə, kinɔh, kɔposi, kunqafte, ko:gita:re, kuɟid e, kwidar, koɟitare, kuzitaɐ, kuzitar, kujda, kuɟeta, kɔēdɐ, kaminar, kamm ina:re, kəmiɾaɐ, kəmiɾaɾ, kəmina, ekstendere, ekstender, ekstinde, jake:re, k adere, kaer, kade:re, kɛir, kawrə, kəɟə, eksprimere, ekspremiɾ, skreme, appe ktora:re, frika:re, freka, frikta:re, ekstergere, eksu:ka:re, uska, jakta:re, lank ea:re, ɛ:runka:re, arankar, aruŋka, ko:nsuere, kudɐ, koser, kuʃi:re, kuzer, kuzi, kɔ:z, kuzi, komputa:re, kōte, kontar, konta:re, kōtar, kumta, kōte, kontar, di:k ere, ekspɔ:nere, kanta:re, kantar, kētar, kənta, kinta, joka:re, ɟoka:re, zuka, f lu:ktua:re, flyktɥe, fluktua, ko:la:re, kule, kolar, kola:re, koax, kuar, kuʌa, kɔl e, ekskurrere, eskuriɾ, skorrere, iʃkoɐɐ, iʃkurer, əskorə, skorɪ:, skuɾɟe, kurr ere, kuɐiɐ, korer, korre:re, koɐɐ, kuɐer, korə, kori, kuɾɟe, glakia:re, inglakia: re, akkwa, lakum, lak, ʌak, ka:li:ginem, kalina, kaliɟine, kalizēj, kəlizēj, kajk ia, kajlum, fokum, fwɔko, fɔk, fu:k, fok, kremare, kɔame, kemar, kremare, kɛjmare, kɛjmaɐe, krəma, inkendere, si:k |
| 25 | m | ekkumhi:k, k ^w em, k ^w o:modo, kɔm, komo, kome, komu, kɔmē, ʃfemu:t, kum, o mne:s, multus, mu, muʃo, molto, mūjtu, mol, molc, mult, unum, magnum, m aɾo, maɾno, grandem, majjorem, mare, longum, largum, la:tum, amplum, am pjo, amplə, strimt, piskem, awem, awikellum, passerem, flo:rem, komedere, komer, kome, kumer, manduka:re, mǎze, mandukar, mandɟare, mēzax, mēzar, məɾza, maɾi:, maŋʃa:, minka, morde:re, moɐdɐ, moɾɟer, mɔrdere, moɐdɐɐ, m uɾɟer, morsika:re, moskar, morsikare, musəga, musəgar, musəɥa, murseka, t ime:re, temer, teme:re, temɐ, timer, temə, temi, teme, tremere, tremɛr, trema re, tremɐɐ, trimer, trima:, dormi:re, dɔɐmiɐ, dormiɾ, dɔɐmiɐ, durmiɾ, durmi, dwaxmi, durmi:, dormi, moɾi:, muɐiɐ, moɾiɾ, moɾi:re, moɐɐ, muɐer, muri, m ɔri, muri, muri, ʃəmine, kaminar, kammina:re, kəmiɾaɐ, kəmiɾaɾ, kəmina, ʃ imine, ʃjamina, maʃfe, ma:ɾʃi:, mergere, mɛɾɟere, mɛɾɟe, ambita:re, tumbar, tumba, tume, eksprimere, ekspremiɾ, sprəmere, iʃprəmeɐ, iʃprəmer, əspremə, esprimi, skreme, limpida:re, limpjar, impingere, impinɟere, əmpɛɾə, impinɟ e, komputa:re, kumta, ɛ:numera:re, enumeɐe, enumeɾaɾ, enumeɾa:re, enumeɾa, numara, so:lem, lakum, mare, meɐ, maɾ, maɐ, maɾ, meɐ, ma:ɾ, sa:lem, ka:li:gi nem, fu:ma:ta, fyne, fumata, fuma:ta, fumasə, fumate, kajlum, wentum, fo kum, kremare, kɔame, kemar, kremare, kɛjmare, kɛjmaɐe, krəma, flammare, flamear, fjammare, flama, wiridem, annum, no:men, no:me, nomi, nomi, nɔ m, nume, no:minem, nombre, limbə |

Appendix 3 - Segments used in the word list

| | | |
|----|----|--|
| 26 | h | ekkumhi:k, pəhō, u:hə:, kinōh, hō:si:, trahere |
| 27 | i: | ekkumhi:k, ibi:, ki:, k ^w i:nk ^w e, maɲi:, sysi:, ski:re, dormi:re, durmi:, wi:were, vi: vere, mori:, mori:re, muri:, nəɖɖi:, ma:ɾɿi:, weni:re, veni:re, viɲi:, hō:si:, strəngi:, pu:si:, lanci:, lɔji:, kuɸi:re, di:kere, di:re, di:ɤ, di:, skori:, ka:li:ginem, si:ɤ, ɸi:l, s i:k |
| 28 | a | aki, la, aja, əɬa, ai, kwa, k ^w ando:, kwando, kwan, kwand, kwant, tantus, tant o, tant, tanc, alguno, alkuno, awgũ, aɬgũ, alter, altro, altrə, altri, alt, alius, aw, aɬ, duas, magnum, maɲo, maɲno, grandem, grande, grande, gran, grant, mare, largum, laɤz, laɤo, largo, laɤgu, largu, ɬark, lark, larg, lato, latu, lat, amplu m, anɸo, ampjo, amplə, angustus, angosto, angusto, etɤwa, pwasō, awem, abe, avi, avi, aw, awikellum, wazo, passerem, paxaro, passero, pasəru, pasəre, nas o, nas, nas, nariθ, nariɸe, naris, manduka:re, mandukaɾ, mandɖare, mēzəɤ, m ēzəɾ, məɲza, maɲi:, maɲja:, minka, moskaɾ, morsikare, musəga, musəgaɾ, mu səɣa, murseka, sugaɤ, sugaɾ, skuɟpa, esputaɾ, sputare, sapere, savwaɤ, saber, sape:re, sabəɤ, savə:ɾ, save:, kwidaɾ, koɖɖitare, kuɖitaɤ, kuɖitaɾ, kujda, kuɖet a, pensaɾ, pensare, pēsəɤ, pēsəɾ, pənsa, pəsa, tremare, dwaɤmi, via, nata:re, n adaɾ, nwotare, nadaɤ, nəɖaɾ, nəda, nada:, naviga:re, nəze, nabegaɾ, navigare, naviɣəɤ, nəviɣaɾ, nəbəga, naviga:, naviga, bolar, volare, voaɤ, vwaɾ, bula, zb ura, kaminaɾ, kammina:re, kəmiɲəɤ, kəmiɲaɾ, kəmina, ɸjamina, maɤɸe, ambi ta:re, andaɾ, andare, ēdaɤ, ēdaɾ, jake:re, jaθeɾ, ɖaɸɸe:re, ɶawɾə, swəɤ, sentaɾ, s ētaɾ, estar, iɸtaɾ, əsta, sta, jebaɾ, lewaɤ, liwaɾ, ɬəba, lua, altia:re, alθaɾ, altsare, aɬsa, aɬsaɾ, əlsa, alɸa:, tornaɾ, tornare, toɤnaɤ, turnaɾ, turna, turna, xiraɾ, ɶiɾ aɾ, ɶira, birar, virar, bira, kadere, ɸwaɤ, kaeɾ, kade:re, kawɾə, ɸɶjade, tumbaɾ, t ōbaɤ, tōbaɾ, tumba, seguraɾ, siɶuraɤ, siɶuraɾ, seraɾ, səɤa, səraɾ, səra, serare, θ eraɾ, serrare, siɤaɾ, appekto:re, aɸretaɾ, əɸiɾtaɾ, fregaɾ, frəga, frea, freka, i ɸfrigaɾ, iɸfriɣaɾ, frotar, frettare, frisaɾ, frəsa, lawa:re, lave, laɸaɾ, lava:re, lə vaɾ, lavaɾ, la, estarsir, enxugaɾ, affuga:re, ēfugaɾ, ēɸuɣaɾ, əɸuga, uska, limpjaɾ, liɸaɾ, tiraɾ, ɸiɾa, tira, puxaɾ, puɸaɾ, pulsa, trahere, trarre, traze, tradɖe, jakta:re, eɸɸaɾ, ɖɖettare, ɶejtaɾ, xita, lankeare, lanθaɾ, lanɸa:re, lēsə, lēsəɾ, ɬənsa, lan ci:, lanɸa:, arankaɾ, arronɸa:re, aɾuɲka, legaɾ, ɬiya, lega, apta:re, ataɾ, ɸtaɾ, k ontaɾ, kōtaɾ, kumta, enumeraɾ, enumera, numara, kanta:re, kantaɾ, kētaɾ, kə nta, canta:, kinta, xugaɾ, ɶogaɤ, ɶuɣaɾ, ɶuga, ɶuka, flugtwəɾ, fluttuare, flutu aɤ, flutuwaɾ, fluktua, fluctua, fluitare, kolaɾ, koaɤ, kuaɾ, kuɬa, elar, ɖɖelare, ɶi lar, ɶəla, ɖɖale, glakia:re, glase, gɶatɸɶjare, gləsa, glaɸa:, inglakia:re, ingetsa, lu: na, luna, ste:lla, etwal, estreja, stella, ak ^w a, aɣwa, akkwa, agwə, age, apə, pl uwia, jubja, pjodɖa, lakum, lak, lago, lago, lagu, layu, ɬak, mare, maɾ, maɤ, maɾ, sal, sale, saw, sare, terra, tjera, terra, tsarə, kalina, kalidɖine, kalizēɸ, ne bula, njebła, nebbja, tinjeblas, fu:ma:ta, fumata, fuma:ta, fumase, fumate, k ajkia, kəame, kemaɾ, kremare, kəjmaɾ, kəjmaɤ, kɾəma, flamma:re, flameaɾ, ɸjammare, ɸɬama, arde:re, aɤɖə, ardeɾ, ardere, aɤɖəɤ, arde, flagra:re, flagəɤ, f lagraɾ, flagrare, flagəɤ, flagraɾ, inɸendjare, isendɖjaɾ, isēɖjaɾ, ustolare, ustu ra, annum, aɲo, anno, aɲ, aɲ, an, ling ^w a, leɲgwa, lingwa |
| 29 | ɐ | eki, ei, duəs, duɸ, pasəru, nəɾiɸ, səbeɾ, nəɖaɾ, nəviɣaɾ, kəmiɲəɤ, kəmiɲaɾ, ɶe zəɤ, ɶezəɾ, kəiɾ, əɸiɾtaɾ, ləvaɾ, trəzeɾ, ɸtaɾ, luə, istrelə, iɸtrelə, agwə, ɸuve, teɤ ɐ, teɤə, kəlizēɸ, nəvwə, trəvwə, fumase, ɐɾdeɾ, ɐnu, ligwə |

Appendix 3 - Segments used in the word list

| | | |
|----|----------------|---|
| 30 | l | illa:k, la, multus, molto, mol, molc, mult, alguno, alkuno, əlgu, alter, altro, al trə, altri, alt, alius, longum, lō, longo, lungo, lōgu, lō, lunk, lung, largum, ləʒ, laryo, largo, ləʒgu, largu, lark, larg, lə:tum, le, lato, latu, lat, amplum, āpl, a mplə, pitulus, pikkolo, pitful, awikellum, utfello, utfjel, flo:rem, fləʒ, flor, fl oʒ, flə, flə:ʒ, flə:r, fləʒare, wola:re, vole, bolar, volare, bula, vōle, zvola:re, zvo la:, leva:re, ləve, levaʒ, livar, leva:, lua, altia:re, alθar, altsare, əlsa, altfa:, law a:re, lave, laβar, lava:re, levar, lava:, la, limpida:re, limpjar, līpar, pulsa:re, pu lsa:, pulsa, lankea:re, lāse, lanθar, lanfja:re, lēsa, lēsar, lanci:, lanfja:, liga:re, li e, legar, lega:re, lōji:, lea:, lega, ludere, ludir, flu:ktua:re, flyktqe, flugtwar, fl uttuare, flutuəʒ, flutuar, fluktua, fluctua, fluita:re, fluitare, fluere, flye, flu ir, fluire, flwiʒ, flwir, flui, ko:lare, kule, kolar, kola:re, kole, gela:re, zəle, ela r, dʒelare, zilar, zəla, dʒale, glakia:re, glase, gləsa, glaʒfa:, inglakia:re, so:lem, so l, sole, səl, səl, solculus, səlɛj, soreli, lu:na, lyn, luna, lue, lən, lune, lunə, ste: lla, etwal, stella, istrelə, iftrelə, əstel, stəl, stēle, pluwia, plqi, pluʒə, plu:ʒ, plo je, pləʒje, lakum, lak, lago, lago, lagu, layu, lə:t, sa:lem, səl, sal, sale, sa:l, ka:li: ginem, kalina, kaliɖʒine, kalizēj, kəlizēj, nebula, njoly, njebula, newlə, tinjeblas, kajlum, sjel, θjelo, ʒelo, səl, ʒi:l, bəyle, bəu:le, flamma:re, flābe, flamear, flag rare, flagʒe, flagrar, flagrare, flagʒəʒ, flagrar, ustula:re, ustolare, ling ^w a, lōg, lengwa, lingwa, ligwə, lēu, lenge, limbə |
| 31 | a: | illa:k, lə:tum, na:sus, na:so, na:s, na:rɪs, manduka:re, maŋʒa:, morsika:re, cuca:, spuda:, ko:gita:re, pensare, penʒa:, trima:, nata:re, nada:, navigare, naviga:, wola:re, zvola:re, zvola:, kammina:re, ma:rʒi:, ambita:re, sedenta:re, senta:, st a:re, sta:, leva:re, leva:, altia:re, altfa:, torna:re, torna:, gyra:re, dʒira:re, dʒira:, v ira:re, appekto:re, frika:re, frega:re, frikta:re, lawa:re, lava:re, lava:, eksu:k a:re, affuga:re, suja:, limpida:re, tira:re, tira:, pulsa:re, pulsa:, jaktare, lankea: re, lanfja:re, lanfja:, e:runka:re, arronfja:re, liga:re, lega:re, lea:, apta:re, kompu ta:re, konta:re, konta:, e:numera:re, enumera:re, kanta:re, canta:, joka:re, dʒok a:re, dʒuja:, flu:ktua:re, fluita:re, ko:lare, kola:re, gela:re, glakia:re, glaʒfa:, ing lakia:re, lə:t, ma:r, sa:lem, sa:l, ka:li:ginem, tene:bra:s, fu:ma:ta, fuma:ta, brutf a:re, bruza:, krema:re, flamma:re, flagra:re, ustula:re |
| 32 | ʌ | əla, ʌoŋ, ʌark, useʌ, ʌəba, ʌənsa, ʌiya, ʌunə, ʌak |
| 33 | k ^w | k ^w is, k ^w em, k ^w id, k ^w ando:, k ^w o:modo, k ^w i:nk ^w e, tork ^w e:re, ak ^w a |
| 34 | ēj | kēj, nēj, kalizēj |
| 35 | ēj | kēj, nēj, kəlizēj |
| 36 | ʈj | ʈjine, ʈjemu:t |
| 37 | i | ki, kind, grēdi, pikenu, iŋgust, iftrəjtu, strimt, pəjfi, avi, biβer, minka, kupise r, timer, trimer, naviyəʒ, nəviyar, iftar, livar, siguraʒ, siyurəʒ, siʒar, epirtar, strindʒe, iffrigar, iffriyar, impindʒe, kinta, zilar, ingetsa, iftrele, vint, intfind ze, verdi, nomi |
| 38 | ε | ke, tres, əstret, stret, pes, pəhō, utfello, utfjel, bəwra, səβe, kənetʒ, kunɛʒə, nɛ dʒi:, mɛrɖʒere, estendere, etʒ, es, sprɛmere, sɛre, əstreɲə, strɛngi:, tɛrɖʒere, tʒekʒ, trɛwra, əmpɛrə, dʒete, əstel, stēle, mɛkʒ, səl, tɛrra, tɛkʒ, tɛrə, tʒere, nəvwə, tɛnɛ bʒ, trɛvɛʒ, sjel, ʒelo, sɛw, səl, vɛnto, intʃɛndjare, vɛrt, vɛkʒ, vɛrt, ε, lenge |
| 39 | ε: | kwe:, u:hɛ:, ʒɛ:r, ε:w, tɛ:ʒ, tɛ:nebre, tɛ:nebre |

Appendix 3 - Segments used in the word list

| | | |
|----|----|---|
| 40 | ʃ | ʃe, muʃo, ʃiŋkwe, ʃiŋk, ʃintʃ, antʃo, pitʃino, piʃul, estreʃo, utʃello, utʃjel, na riʃe, ʃimine, ʃjamina, ma:ʃi:, ɖatʃe:re, zəʃɛa, tɔʃfere, tɔartʃe, ʃɛ:ʀ, ʃjade, ʃi ra, eʃar, lanʃa:re, lanʃa:, arronʃa:re, kuʃi:re, ziʃe, ʃāte, gʃattʃjare, glaʃa:, ʃ ɛatʃə, ʃɛlo, ʃi:l, ʃer, brutʃa:re, inʃendjare, inʃindʒe |
| 41 | ã | kã, gɤã, gɤã, ʃāte, ā |
| 42 | ẽ | kwẽdu, nẽw, tẽtu, tẽtu, grẽɖʒi, grẽdi, ẽʃu, mẽʒaɤ, mẽʒar, ẽdaɤ, ẽdar, lẽsa, lẽsar, kẽtar |
| 43 | ẽ | kɔmẽ, pẽse, epɤẽdɤ, etɤẽdɤ, ẽsādʒe |
| 44 | õ | nõ, lõ, kõspye, nõ |
| 45 | ũ | nẽw |
| 46 | ẽ | nẽ, sẽk, pẽsaɤ, pẽsar, kɤẽdɤ, istẽdeɤ, iftẽder, sẽtar, ẽʃugar, ẽʃuɤar, vẽtu, vẽ, ɪs ẽdʒar |
| 47 | e: | omne:s, tre:s, tre:, morde:re, sape:re, save:, pe:nsa:re, time:re, teme:re, jake:re, ɖatʃe:re, sede:re, torkʷe:re, kade:re, tene:re, tene:re, e:runka:re, e:numera:re, s te:lla, tene:braj, tene:bra:s, arde:re |
| 48 | ɲ | oɲi, maɲo, maɲo, pekeɲo, mɔɲʒa, maɲi:, koɲeseɤ, kuɲiser, koɲosi, kɔmɪɲaɤ, kɔmɪɲar, viɲi:, estreɲi:, əstreɲə, əmpɛɲə, aɲo, aɲ |
| 49 | ð | toðu, moðer, muðer, nəðar |
| 50 | ũ | mũjtu, awgũ, ałgũ, ũ |
| 51 | j | mũjtu |
| 52 | c | molc, tanc, cuca:, lanci:, ɕɔase, canta:, fluctua, soliculus |
| 53 | œ | okœ, œ |
| 54 | g | alguno, magnum, grandem, gran, gɤã, grant, longo, lung, largum, larg, ingus t, naviga:re, naviga:, mergere, gyra:re, stringere, stringe, strɛngi:, frega:re, i mpingere, lega, xugar, glaʃa:, inɣetsa, age, lago, flagɤaɤ, lɛngɛ |
| 55 | ł | ałgũ, ał, ałsa, ałsar, kuła, sɔł, fłama |
| 56 | p | paɯkus, pø, poko, pɔko, powku, pɔk, pō, po:k, amplum, āpl, ampjo, amplə, pitt itus, pəti, pətit, piti, pittinus, pekeɲo, pitʃino, pekenu, pikenu, putsin, pitulus, pikkolo, piʃul, piskem, peθ, peʃʃe, pejʃi, pejʃi, pɛʃ, pɛs, peʃte, pwasō, pehō, pa sserem, paxaro, passero, pasɛru, pasəre, konspuere, kõspye, kuspiɤ, kuʃpiɛ, e skupiɛ, əskupi, skuɟpa, sputere, esputar, sputare, spuda:, sapere, sape:re, pe:n sa:re, pāse, pensar, pensare, pẽsaɤ, pẽsar, pənsa, pẽse, peɲsa:, pəsa, eksprimere, epɤẽdɤ, ekspremiɛ, spremere, ifprəmeɤ, ifprəmer, əspremə, esprimi, appekto ra:re, apretar, epirtar, limpida:re, limpjar, lɪpar, pulsa:re, puse, puxar, puʃar, pu:si:, pulsa:, pulsa, impingere, impindʒere, əmpɛɲə, impindʒe, apta:re, kompu ta:re, ekspo:nere, sporre, spune, apə, pluwia, plɥi, pjodɖa, pluʒə, plu:ɤ, ploje, plɔaje |
| 57 | aɯ | paɯkus |
| 58 | ø | pø, dø, løn, fø |
| 59 | õ | põ, õt, õ, lõgu, lõ, pwasō, pehō, tõbe, tõbaɤ, tõbar, kōte, kōtar, kōte, nõ |

Appendix 3 - Segments used in the word list

| | | |
|----|---|---|
| 60 | r | alter, altro, altri, tre:s, tre, tres, trø:, tre:, trej, grandem, grande, gran, grant, majorem, largum, largo, lark, larg, striktus, stretto, stræt, strimt, passerem, passero, flo:rem, flo:r, nariſe, na:rıs, bibere, komedere, manduka:re, morde:re, mordre, morsika:re, morsikare, musəgar, murseka, su:gere, konspuere, spute re, ski:re, sapere, sape:re, kogno:skere, konoffere, ko:gita:re, kođitare, pe:nsa:re, time:re, teme:re, tremere, tremare, trima:, dormi:re, durmi, durmi:, dormi, wi:were, vi:vere, mori:, mori:re, muri:, muri, nata:re, naviga:re, navigare, wol a:re, mergere, mærdgere, merdže, ambita:re, andare, weni:re, ekstendere, estæn dere, jake:re, dgere, sede:re, sedere, sedenta:re, sta:re, leva:re, altia:re, altsare, t orna:re, tornare, turna, tu:rne, torna:, turna, gya:re, đira:re, đira:, vira:re, to rk ^w :ere, tərſere, turser, tørsə, tgarſe, kadere, kawrə, tene:re, eksprimere, spr emere, iſprəmek, iſprəmer, esprimi, skreme, serrere, serar, səra, serare, 0erar, serrare, appekto:re, stringere, strindgere, əſtrīzir, əſtrīzir, stringe, strēngi:, strindže, frika:re, frega:re, froj, frea, freka, frikta:re, frettare, frisar, lawa:re, lava:re, tergere, tərđgere, ekstergere, əstərzi, ſterđže, eksu:ka:re, affuga:re, lim pida:re, tira:re, tire, tira:, pulsa:re, trahere, trarre, traj, trađže, impingere, imp indgere, jakta:re, đettare, lankea:re, lanſa:re, e:runka:re, arankar, arronſa:re, liga:re, lega:re, apta:re, ko:nsuere, kuſfi:re, komputa:re, konta:re, e:numera:re, enumera:re, numara, di:kere, dire, ekspo:nere, sporre, kanta:re, lu:dere, joka:re, đoka:re, flu:ktua:re, fluttuare, fluita:re, fluitare, fluere, fluire, ko:la:re, k ola:re, ekskurrere, eskurir, skorrere, əskorə, skori:, kurrere, korer, korrere, k orə, kori, gela:re, đelare, glakia:re, gjattſjare, inglakia:re, soreli, mare, mar, ma:r, sare, terra, tjera, terra, tərə, tjere, tsarə, negurə, tene:braj, tē:nebre, tene: bra:s, tē:nebre, bruſa:re, bruza:, krema:re, kremare, krəma, flamma:re, fjam m are, arde:re, ardere, flagra:re, flagrare, inkendere, intſendjare, ustula:re, usto lare, ustura, wiridem, verde, vət |
| 61 | в | отв, тѣва, гвѣ, гвѣ, лаѣ, лаѣгу, етѣва, стѣѣ, fləv, flov, flə:v, bvav, bebev, b ø:v, mēzav, movdv, movdv, sugav, kuspi:v, savwv, sabev, kənetv, kopesev, k uzitav, pēsav, temev, kvēdv, tremev, dəvmi:v, dovmi:v, dvavmi, vivv, vivev, muvi:v, movev, muver, nadav, navi:vav, voav, kəmi:vav, mavſe, ēdav, vəni:v, v i:v, etādv, istēdev, zeziv, zəzev, svav, sev, etv, levav, tuvne, tokvav, zivē, vīvē, tōdv, ſvav, tōbv, təni:v, tev, sigurav, epēdv, iſprəmek, seva, seve, si:vav, etv ēdv, fveje, fvote, tivē, tvēv, kudv, enumeve, di:v, di:v, zogav, flutuvav, flwiv, k oav, iſkovev, kuviv, kovev, kuver, plu:v, mev, mav, mev, tev, tevv, tevv, tē:v, t enēv, si:v, bvyle, bvule, kvame, kejmave, avdv, avdev, flagve, flagvav, vev, v ev |

Appendix 3 - Segments used in the word list

| | | |
|----|----|---|
| 62 | r | otro, owtru, altrə, tres, tref, grande, grēdʒi, grēdi, mare, larɣo, largu, ʎark, est refʃo, istrejtu, ɪstrejtu, əstret, paxaro, pasəru, pasəre, flor, fjo:re, flɔare, nariθ, naris, nərif, beber, bere, biβer, bəwɾə, komer, kumer, mandukar, manɟare, m ēzar, morðer, murðer, moskar, morsikare, sugar, kuspir, eskupir, esputar, spu tare, saber, səber, konoθer, kupiser, kwidar, kuzitar, pensar, pensare, pēsar, t emer, timer, tremar, tremək, trimer, dormir, durmir, bibir, viver, biwɾə, morir, muker, muri, nadar, nwotare, nəðar, nabegar, nəviyar, bolar, volare, vwar, z vola:re, zbura, kaminar, kammina:re, kəminar, andar, ēdar, benir, veni:re, vir, ekstender, ɪstēder, əstendrə, jaθer, ɟaʃe:re, zəzer, zawɾə, ser, sentar, sētar, es tar, ɪstar, jebar, livar, alθar, aʎsar, tornar, turnar, xirar, ɟira:re, zirar, zira, bi rar, vira:re, virar, bira, torθer, kaer, kade:re, kəir, tumber, tōbar, tener, tene:re, ter, segurar, siguraɁ, siɣurar, ekspremir, əspremə, serar, sərar, θerar, siɁar, a pretar, ɐirtar, estrepir, əstreɲə, fregar, frəga, ɪffrigar, ɪffriyar, frotar, frisar, frəsa, laβar, ləvar, estarsir, enxugar, ɛfugar, ɛfuyar, limpjar, lipar, tirar, ʃira, tira, puxar, puɟar, traze, trəzer, trəwɾə, eʃar, zejtat, lanθar, lēsar, arankar, ar uŋka, legar, atar, ɐtar, koser, kuzer, kontar, kōtar, enumerar, enumera, deθir, dizer, kantar, kētar, ludir, xugar, zuɣar, flugtwar, flutuar, fluir, flwir, kolar, kuar, eskurir, ɪfkurer, skurɟe, korer, kuɁer, kurɟe, elar, zilar, sɔare, estreja, istrelə, ɪstrele, mar, trəvɛʃ, tənebrəs, ʃer, kemar, kəjmare, flamear, arder, ɐrd er, arde, flagrar, flagrar, enθender, ɪsendɟiar, ɪsədjar, ənsendrə, berde, verdi, vert, verde, nombre |
| 63 | ŋ | uŋ, ʃiŋkwe, siŋk, ʃiŋk, ʎoŋ, iŋgust, maŋɟa: peŋsa:, aruŋka, aŋ, nɔŋ, leŋgwa |
| 64 | ø: | dø:, trø:, stɁø:, flø:Ɂ, bø:Ɂ, savø:r, kø:z, stø:l, fø: |
| 65 | aj | duaj, majjorem, traj, ajɣwə, tene:braj, kajkia, kajlum |
| 66 | a | tɁwa, bwəɁ |
| 67 | ej | trej, istrejtu, pejʃi, zejtat, kejməre |
| 68 | θ | θinko, peθ, nariθ, konoθer, jaθer, alθar, torθer, θerar, lanθar, deθir, θjelo, enθ ender |
| 69 | ɪ | siku, əʃtriɟir, əʃtriɟir, lipar, ɪsendɟiar, ɪsədjar, liɣwə |
| 70 | ɣ | larɣo, musəɣa, naviɣəɁ, nəviyar, siɣurar, ɪffriyar, ɛfuyar, ʎiya, zuɣar, aɣwa, ajɣwə, layu, foyu |
| 71 | ã | ãpl, mãze, pãse, etãɁ, lãse, ʃãte, vã, flãbe, ɛsãdje, ã, lãg |
| 72 | ts | putsin, altsare, tsine, iŋgetsə, tsarə |
| 73 | ɐj | ɪstrejtu, pejʃi, kəjmare |
| 74 | z | wazo, zvola:re, zvola:, zbura, zeziv, zəzeɁ, zəzer, zəʃɛa, traze, trəzer, kuzer, k uzi, kø:z, kuzi, dizer, ziʃe, bruza: |
| 75 | x | paxaro, xirar, enxugar, puxar, xita, xugar |
| 76 | f | flo:rem, fləɁ, flor, fjo:re, floɁ, flɔ, flø:Ɂ, flor, flɔare, frika:re, fɁeje, fregar, f rega:re, frəga, froj, frea, freka, ɪffrigar, ɪffriyar, frikta:re, fɁote, frotar, frett are, frisar, frəsa, flu:ktua:re, flyktɟe, flugtwar, fluttuare, flutuəɁ, flutuar, f luktua, fluctua, fluita:re, fluitare, fluere, flye, fluir, fluire, flwiɁ, flwir, flui, fu:ma:ta, fyne, fumata, fuma:ta, fumasə, fumate, fokum, fə, fwego, fwoko, fogu, foyu, fɔk, fə:, fu:k, fok, flamma:re, flãbe, flamear, fɟammare, flama, fl agra:re, flagɁe, flagrar, flagrare, flagɁəɁ, flagrar |
| 77 | œ | flœɁ |

Appendix 3 - Segments used in the word list

| | | |
|----|----------------|--|
| 78 | qa | floare, kunoafte, toartfe, cqase, sqare, ploaje |
| 79 | β | biβer, səβe, laβar |
| 80 | ɣa | bɣa, zəʃɣa, fedɣa, kədɣa, stea, ʃɣaʃə |
| 81 | ɟ | maɲja: |
| 82 | ʀ | savø:ʀ, mɔʀi, ma:ʀʃi:, ʃʃɛ:ʀ, səʀaʀ, sɛʀe, iʃkʉʀeʀ |
| 83 | ɥ | kɥide, esɥije, flyktɥe, plɥi |
| 84 | ɔ: | hɔ:si: |
| 85 | ɛj | fʁɛje, sɔlɛj |
| 86 | g ^w | ling ^w a |
| 87 | ẽɥ | lẽɥ |

Appendix 4 - Word Lists by Language

Latin

| Ancestral Class | IPA | Sounds |
|-----------------|--------------------------------------|------------------------------|
| I | -ego: | ay-g-O |
| YouSingular | tu: | t-U |
| We | no:s | n-O-s |
| YouPlural | wo:s | w-O-s |
| Here | -ekkumhi:k | ay-k-k-u-m-h-E-k |
| There | illa:k | e-l-l-A-k |
| There-Ibi | ibi: | e-b-E |
| Who-Qui | k ^w -is | kw-e-s |
| Who-Quem | k ^w -em- | kw-ay-m |
| What | 'k ^w -id | kw-e-d |
| When-Quando | k ^w -ando: | kw-ah-n-d-O |
| How-Quomodo | 'k ^w o:modo | kw-O-m-oh-d-oh |
| Not | no:n | n-O-n |
| Not-Nec | nek | n-ay-k |
| All | omne:s | oh-m-n-ai-s |
| All-Totus | to:tus | t-O-t-u-s |
| Many | multus | m-u-l-t-u-s |
| Many-Tantus | tantus | t-ah-n-t-u-s |
| Few | paukus | p-au _diphthong-k-u-s |
| Other | alter- | ah-l-t-ay-r |
| Other-Alius | alius | ah-l-e-u-s |
| One | 'u:num | U-n-u-m |
| Two-Duos | duo:s | d-u-O-s |
| Two-Duae | du-aj | d-u-aj _diphthong |
| Two-Duas | duas | d-u-ah-s |
| Three | tr-e:s | t-r-ai-s |
| Five | 'k ^w i:nk ^w -e | kw-E-n-kw-ay |
| Big | magnum | m-ah-j-n-u-m |
| Big-Grandem | grandem | j-r-ah-n-d-ay-m |
| Big-Majjorem | majjorem | m-aj _diphthong-jg-oh-r-ay-m |
| Long-Longum | 'lo-ngum | l-oh-n-g-u-m |
| Long-Largum | largum | l-ah-r-j-u-m |
| Wide | 'la:tum | l-A-t-u-m |
| Wide-Amplum | amplum | ah-m-p-l-u-m |
| Small | pittitus | p-e-t-t-e-t-u-s |
| Small-Pittinus | 'pittinus | p-e-t-t-e-n-u-s |
| Small-Pitulus | pi-tulus | p-e-t-u-l-u-s |
| Narrow | angustus | ah-n-g-u-s-t-u-s |

Appendix 4 - Word Lists by Language

| | | |
|-----------------------------|------------------------|-------------------------|
| Narrow-Strictus | -str-i-ktus | s-t-r-e-k-t-u-s |
| Fish-Piskem | piskem | p-e-s-k-ay-m |
| Bird-Avem | awem | ah-w-ay-m |
| Bird-Avicellum | -awi-k-ellum | ah-w-e-k-ay-l-l-u-m |
| Bird-Passerem | passerem | p-ah-s-s-ay-r-ay-m |
| Flower | flo:rem | f-l-O-r-ay-m |
| Nose | na:sus | n-A-s-u-s |
| ToDrink | 'bib-ere | b-e-b-ay-r-ay |
| ToEat | komedere | k-oh-m-ay-d-ay-r-ay |
| ToEat-Manducare | manduka:re | m-ah-n-d-u-k-A-r-ay |
| ToBite | morde:re | m-oh-r-d-ai-r-ay |
| ToBite-Morsicare | morsika:re | m-oh-r-s-e-k-A-r-ay |
| ToSuck | su:gere | s-U-g-ay-r-ay |
| ToSpit | konspuere | k-oh-n-s-p-u-ay-r-ay |
| ToSpit-Sputare | -sputere | s-p-u-t-ay-r-ay |
| ToKnow | ski:re | s-k-E-r-ay |
| ToKnow-Sapere | sap-ere | s-ah-p-ay-r-ay |
| ToKnow-Cognoscere | kogno:skere | k-oh-g-n-O-s-k-ay-r-ay |
| ToThink | k-o:gita:re | k-O-g-e-t-A-r-ay |
| ToThink-Pensare | pe:nsa:re | p-ai-n-s-A-r-ay |
| ToFear | time:re | t-e-m-ai-r-ay |
| ToFear-Tremere | trem-ere | t-r-ay-m-ay-r-ay |
| ToSleep | d-ormi:re | d-oh-r-m-E-r-ay |
| ToLive | wi:were | w-E-w-ay-r-ay |
| ToDie | mori:-- | m-oh-r-E |
| ToSwim | n-ata:re | n-ah-t-A-r-ay |
| ToSwim-Navigare | naviga:re | n-ah-v-e-j-A-r-ay |
| ToFly | wola:re | w-oh-l-A-r-ay |
| ToWalk-Mergere | mergere | m-ay-r-j-ay-r-ay |
| ToWalk-Ambitare | ambita:re | ah-m-b-e-t-A-r-ay |
| ToCome | weni:re | w-ay-n-E-r-ay |
| ToLieAsInABed | ekstendere | ay-k-s-t-ay-n-d-ay-r-ay |
| ToLieAsInABed-lacere | ja-ke:re | jg-ah-k-ai-r-ay |
| ToSit | s-edere | s-ay-d-ai-r-ay |
| ToSit-Sedentare | sedenta:re | s-ay-d-ay-n-t-A-r-ay |
| ToStand | -sta:re | s-t-A-r-ay |
| ToStand-Levare | leva:re | l-ay-v-A-r-ay |
| ToStand-Altiare | -altia:re | ah-l-t-e-A-r-ay |
| ToTurnIntransitive | torna:re | t-oh-r-n-A-r-ay |
| ToTurnIntransitive-Gyrare | gyra:re | j-eeh-r-A-r-ay |
| ToTurnIntransitive-Torquere | tork ^w e:re | t-oh-r-kw-ai-r-ay |

Appendix 4 - Word Lists by Language

| | | |
|-----------------------|--------------|---------------------------|
| ToFall | k:adere | k-ah-d-ay-r-ay |
| ToHold | ten:e:re | t-ay-n-ai-r-ay |
| ToSqueeze | eksprim:ere | ay-k-s-p-r-e-m-ay-r-ay |
| ToSqueeze-Serrere | serrere | s-ay-r-r-ay-r-ay |
| ToSqueeze-Serare | se-rare | s-ay-r-ah-r-ay |
| ToSqueeze-Appetorare | appektora:re | ah-p-p-ay-k-t-oh-r-A-r-ay |
| ToSqueeze-Stringere | -stringere | s-t-r-e-n-j-ay-r-ay |
| ToRub | frika:re | f-r-e-k-A-r-ay |
| ToRub-Frictare | frikta:re | f-r-e-k-t-A-r-ay |
| ToWash | lawa:re | l-ah-w-A-r-ay |
| ToWipe | tergere | t-ay-r-g-ay-r-ay |
| ToWipe-Extergere | ekstergere | ay-k-s-t-ay-r-g-ay-r-ay |
| ToWipe-Exsucare | eks-u:k:a:re | ay-k-s-U-k-A-r-ay |
| ToWipe-Limpidare | limpida:re | l-e-m-p-e-d-A-r-ay |
| ToPull | tira:re | t-e-r-A-r-ay |
| ToPull-Pulsare | pulsa:re | p-u-l-s-A-r-ay |
| ToPull-Trahere | tra:here | t-r-ah-h-ay-r-ay |
| ToPush | impingere | e-m-p-e-n-j-ay-r-ay |
| ToThrow | ja-kt:a:re | jg-ah-k-t-A-r-ay |
| ToThrow-Lanceare | lankea:re | l-ah-n-k-ay-A-r-ay |
| ToThrow-Eruncare | ex-runka:re | ai-r-u-n-k-A-r-ay |
| ToTie | liga:re | l-e-g-A-r-ay |
| ToTie-Aptare | apta:re | ah-p-t-A-r-ay |
| ToSew | ko:n:suere | k-O-n-s-u-ay-r-ay |
| ToCount | komputa:re | k-oh-m-p-u-t-A-r-ay |
| ToCount-Enumerare | e:numera:re | ai-n-u-m-ay-r-A-r-ay |
| ToSay | di:kere | d-E-k-ay-r-ay |
| ToSay-Exponere | ekspo:nere | ay-k-s-p-O-n-ay-r-ay |
| ToSing-AncestralClass | kanta:re | k-ah-n-t-A-r-ay |
| ToPlay-Ludere | lu:dere | l-U-d-ay-r-ay |
| ToPlay-Jiocare | jo-ka:re | jg-oh-k-A-r-ay |
| ToFloat | flu:ktua:re | f-l-U-k-t-u-A-r-ay |
| ToFloat-Fluitare | fluita:re | f-l-u-e-t-A-r-ay |
| ToFlow | fluere | f-l-u-ay-r-ay |
| ToFlow-Colare | ko:la:re | k-O-l-A-r-ay |
| ToFlow-Excurrere | ekskurrere | ay-k-s-k-u-r-r-ay-r-ay |
| ToFlow-Currere | kurrere | k-u-r-r-ay-r-ay |
| ToFreeze | gela:re | g-ay-l-A-r-ay |
| ToFreeze-Glaciare | gla-kia:re | g-l-ah-k-e-A-r-ay |
| ToFreeze-Inglaciare | inglakia:re | e-n-g-l-ah-k-e-A-r-ay |
| Sun | so:lem | s-O-l-ay-m |

Appendix 4 - Word Lists by Language

| | | |
|------------------------|----------------------|----------------------------|
| Sun-Soliculus | soliculus | s-oh-l-e-tya-u-l-u-s |
| Moon | lu:na | l-U-n-ah |
| Star | -st-e:lla | s-t-ai-l-l-ah |
| Water | a-k ^w -a | ah-kw-ah |
| Rain | plu-wia | p-l-u-w-e-ah |
| Lake | lakum | l-ah-k-u-m |
| Sea | mare | m-ah-r-ay |
| Salt | 'sa:lem | s-A-l-ay-m |
| Earth | t-erra | t-ay-r-r-ah |
| Fog | ka:li:ginem | k-A-l-E-g-e-n-ay-m |
| Fog-Nebula | n-e-bula | n-ay-b-u-l-ah |
| Fog-Tenebrae | ten-e:braj | t-ay-n-ai-b-r-aj_diphthong |
| Fog-Tenebras | t-en-e:bra:s | t-ay-n-ai-b-r-A-s |
| Fog-Fumata | fu:ma:ta | f-U-m-A-t-ah |
| Fog-Caecia | kajkia | k-aj_diphthong-k-e-ah |
| Sky | 'k-ajlum | k-aj_diphthong-l-u-m |
| Wind | w-entum | w-ay-n-t-u-m |
| Fire-Focus | f-okum | f-oh-k-u-m |
| ToBurn-Cremare | krema:re | k-r-ay-m-A-r-ay |
| ToBurn-Flammare | flamma:re | f-l-ah-m-m-A-r-ay |
| ToBurn-Ardere | arde:re | ah-r-d-ai-r-ay |
| ToBurn-Flagrare | flagra:re | f-l-ah-g-r-A-r-ay |
| ToBurn-Incendere | inkend-ere | e-n-k-ay-n-d-ay-r-ay |
| ToBurn-AncestralClass8 | ustula:re | u-s-t-u-l-A-r-ay |
| Green | 'wiridem | w-e-r-e-d-ay-m |
| Year | annum | ah-n-n-u-m |
| And-Et | et | ay-t |
| And-Si | si:k | s-E-k |
| Name-Nomen | no:men | n-O-m-ay-n |
| Name-Nominem | no:min-em | n-O-m-e-n-ay-m |
| Tongue | ling ^w -a | l-e-n-gw-ah |

French

| Ancestral Class | IPA | Sounds |
|-----------------|-----------|----------|
| I | -ʒ-ə | gzah-aah |
| YouSingular | ty | t-eeh |
| We | nu-- | n-u |
| YouPlural | vu-- | v-u |
| Here | i--s---i- | e-s-e |
| There | --la- | l-ah |

Appendix 4 - Word Lists by Language

| | | |
|-------------------|--------------|--------------------------------|
| Who-Qui | k-i- | k-e |
| What | kwa- | k-w-ah |
| When-Quando | k-ã--- | k-an |
| How-Quomodo | kɔm--- | k-euh-m |
| Not | nɔ- | n-oon |
| Not-Nec | ni- | n-e |
| All-Totus | tu---- | t-u |
| Many | mu--- | m-u |
| Some | o-kœ--- | oh-k-uuh |
| Few | pø--- | p-uu |
| Other | o-t-ʁ- | oh-t-rr |
| One | œ--- | uuh |
| Two-Duos | d-ø- | d-uu |
| Three | tɁwa- | t-rr-w-a |
| Five | sẽ-k-- | s-ehn-k |
| Big-Grandem | gɁã--- | g-rr-an |
| Long-Longum | lɔ----- | l-oon |
| Long-Largum | laɁɜ-- | l-ah-rr-gzah |
| Wide | le--- | l-ay |
| Wide-Amplum | ã-pl-- | NasalA-p-l |
| Small | pə-ti--- | p-aah-t-e |
| Narrow-Strictus | e-tɁwa----- | ay-t-rr-w-ah |
| Fish-Pescion | pwasō | p-w-ah-s-on |
| Bird-Avicellum | wa---z-o---- | w-ah-zz-oh |
| Flower | flœɁ-- | f-l-OpenMidNearFrontRounded-rr |
| Nose | ne--- | n-ay |
| ToDrink | b--waɁ- | b-w-a-rr |
| ToEat-Manducare | mã-ɜ--e-- | m-NasalA-gzah-ay |
| ToBite | moɁd-Ɂ- | m-oh-rr-d-rr |
| ToSuck | syse-- | s-eeh-s-ay |
| ToSpit | kɔ-spye-- | k-oon-s-p-eeh-ay |
| ToKnow-Sapere | savwaɁ- | s-ah-v-w-ah-rr |
| ToKnow-Cognoscere | kɔ-nɛ-tɁ- | k-euh-n-eh-t-rr |
| ToThink | kɥ--ide-- | k-eu-e-d-ay |
| ToThink-Pensare | pã-se-- | p-NasalA-s-ay |
| ToFear-Tremere | kɁẽ-d-Ɂ- | k-rr-ehn-d-rr |
| ToSleep | d-ɔɁmiɁ- | d-euh-rr-m-e-rr |
| ToLive | viv-Ɂ- | v-e-v-rr |
| ToDie | muɁiɁ- | m-u-rr-e-rr |
| ToSwim-Navigare | na--ɜe-- | n-ah-gzah-ay |
| ToFly | vole-- | v-oh-l-ay |

Appendix 4 - Word Lists by Language

| | | |
|-----------------------------|--------------|----------------------|
| ToWalk | ʃəmine-- | shh-aah-m-e-n-ay |
| ToWalk-Marcher | maʃje | m-ah-rr-shh-ay |
| ToCome | vəniʁ- | v-aah-n-e-rr |
| ToLieAsInABed | e-tā-d-ʁ- | ay-t-NasalA-d-rr |
| ToLieAsInABed-lacere | ʒe-zix- | gzah-ay-zz-e-rr |
| ToSit | swa--ʁ- | s-w-ah-rr |
| ToStand | ε-t-ʁ- | eh-t-rr |
| ToStand-Levare | ləve-- | l-aah-v-ay |
| ToStand-Altiare | -o-s-e-- | oh-s-ay |
| ToTurnIntransitive | tuxne-- | t-u-rr-n-ay |
| ToTurnIntransitive-Gyrare | ʒixe-- | gzah-e-rr-ay |
| ToTurnIntransitive | vixe-- | v-e-rr-ay |
| -AncestralClass3 | | |
| ToTurnIntransitive-Torquere | tɔʁd-ʁ- | t-euh-rr-d-rr |
| ToFall | ʃwa--ʁ- | shh-w-ah-rr |
| ToFall-Tumbare | tõ-be- | t-on-b-ay |
| ToHold | tən-iʁ- | t-aah-n-e-rr |
| ToSqueeze | e--pʁɛ̃-d-ʁ- | ay-p-rr-ehnn-d-rr |
| ToSqueeze-Serare | se-ʁe-- | s-ay-rr-ay |
| ToSqueeze-Stringere | e-tʁɛ̃-d-ʁ- | ay-t-rr-ehnn-d-rr |
| ToRub | fʁɛʃe-- | f-rr-eh_diphthong-ay |
| ToRub-Frictare | fʁote-- | f-rr-oh-t-ay |
| ToWash | lave-- | l-ah-v-ay |
| ToWipe-Exsucare | e-sqi-je-- | ay-s-eu-e-jg-ay |
| ToPull | tixe-- | t-e-rr-ay |
| ToPull-Pulsare | pu-se-- | p-u-s-ay |
| ToPull-Trahere | tʁ---εʁ- | t-rr-eh-rr |
| ToThrow | ʒə--te-- | gzah-aah-t-ay |
| ToThrow-Lanceare | lā-s-e- | l-NasalA-s-ay |
| ToTie | li-e-- | l-e-ay |
| ToSew | ku-d---ʁ- | k-u-d-rr |
| ToCount | kõ---te-- | k-on-t-ay |
| ToCount-Enumerare | enumeʁe-- | ay-n-u-m-ay-rr-ay |
| ToSay | di--ʁ- | d-e-rr |
| ToSing-AncestralClass | ʃā-te-- | shh-NasalA-t-ay |
| ToPlay-Jiocare | ʒ-w-e-- | gzah-w-ay |
| ToFloat | flyktɥe-- | f-l-eeh-k-t-eu-ay |
| ToFlow | flye-- | f-l-eeh-ay |
| ToFlow-Colare | kule-- | k-u-l-ay |
| ToFlow-Currere | ku-ʁix- | k-u-rr-e-rr |
| ToFreeze | ʒəle-- | gzah-aah-l-ay |

Appendix 4 - Word Lists by Language

| | | |
|-------------------|------------|-----------------------|
| ToFreeze-Glaciare | gla-s-e-- | g-l-ah-s-ay |
| Sun-Soliculus | sɔləj---- | s-euh-l-eh_diphthong |
| Moon | lyn- | l-eeh-n |
| Star | e-twa-l- | ay-t-w-ah-l |
| Water | o---- | oh |
| Rain | plɥ--i- | p-l-eu-e |
| Lake | lak-- | l-ah-k |
| Sea | mɛʁ- | m-eh-rr |
| Salt | sɛl-- | s-eh-l |
| Earth | t-e-ʁ- | t-ay-rr |
| Fog-Nebula | nʝo---ly | n-jg-euh-l-eeh |
| Fog-Tenebras | t-en-ɛbʁ- | t-ay-n-eh-b-rr |
| Fog-Fumata | fyme-- | f-eeh-m-ay |
| Sky | sjɛl-- | s-jg-eh-l |
| Wind | v-ã---- | v-NasalA |
| Fire-Focus | f-ø--- | f-uu |
| ToBurn-Brojan | bʁyle-- | b-rr-eeh-l-ay |
| ToBurn-Cremare | kʁame-- | k-rr-ah-m-ay |
| ToBurn-Flammare | flã-be-- | f-l-NasalA-b-ay |
| ToBurn-Ardere | aʁd-ʁ- | ah-rr-d-rr |
| ToBurn-Flagrare | flagʁe-- | f-l-ah-g-rr-ay |
| ToBurn-Incendere | ẽ-sã-dje-- | ehnn-s-NasalA-d-jg-ay |
| Green | veʁ---- | v-ay-rr |
| Year | ã---- | NasalA |
| And-Et | e- | ay |
| Name-Nomen | nõ--- | n-oon |
| Tongue | lã-g-- | l-NasalA-g |

Spanish

| Ancestral Class | IPA | Sounds |
|-----------------------------|-----------|-------------------------|
| I | -j-o | VdPalatalFricativeoh |
| YouSingular | tu | t-u |
| YouSingular-VostramMercedem | -usted | u-s-t-ay-d |
| We | no-s | n-oh-s |
| YouPlural | bo-s | b-oh-s |
| Here | -a-k---i- | ah-k-e |
| There | a-ja- | ah-VdPalatalFricativeah |
| There-Adlbi | ai | ah-e |
| Who-Quem | kjen- | k-jg-ay-n |
| What | k-e- | k-ay |

Appendix 4 - Word Lists by Language

| | | |
|--------------------|--------------|-----------------------------|
| When-Quando | kwando | k-w-ah-n-d-oh |
| How-Quomodo | komo-- | k-oh-m-oh |
| Not | no- | n-oh |
| Not-Nec | ni- | n-e |
| All-Totus | to-do- | t-oh-d-oh |
| Many | mu-tʃo- | m-u-ts-oh |
| Many-Tantus | tanto- | t-ah-n-t-oh |
| Some | alguno | ah-l-j-u-n-oh |
| Few | poko- | p-oh-k-oh |
| Other | o-t-ro | oh-t-er-oh |
| One | 'uno- | u-n-oh |
| Two-Duos | d-os | d-oh-s |
| Three | tr-es | t-er-ay-s |
| Five | 'θink-o | th-e-n-k-oh |
| Big | ma-po- | m-ah-VdPalatalNasal-oh |
| Big-Grandem | grande- | g-er-ah-n-d-ay |
| Long-Longum | lo-ngo- | l-oh-n-j-oh |
| Long-Largum | laryo- | l-ah-er-juh-oh |
| Wide | lato- | l-ah-t-oh |
| Wide-Amplum | antʃ-o- | ah-n-ts-oh |
| Small-Pittinus | pe-kepo- | p-ay-k-ay-VdPalatalNasal-oh |
| Narrow | angosto- | ah-n-g-oh-s-t-oh |
| Narrow-Strictus | estr-e--tʃo- | ay-s-t-er-ay-ts-oh |
| Fish-Piskem | peθ--- | p-ay-th |
| Bird-Avem | abe- | ah-b-ay |
| Bird-Passerem | pa-xaro- | p-ah-xha-ah-er-oh |
| Flower | flor-- | f-l-oh-er |
| Nose | naso- | n-ah-s-oh |
| Nose-Nares | nariθ- | n-ah-er-e-th |
| ToDrink | beb-er- | b-ay-b-ay-er |
| ToEat | kome--r- | k-oh-m-ay-er |
| ToEat-Manducare | mandukar- | m-ah-n-d-u-k-ah-er |
| ToBite | mord̃er- | m-oh-er-dd-ay-er |
| ToBite-Morsicare | mo-s-kar- | m-oh-s-k-ah-er |
| ToSpit-Exconspuere | esku-pir | ay-s-k-u-p-e-er |
| ToSpit-Sputare | esputar- | ay-s-p-u-t-ah-er |
| ToKnow-Sapere | sab-er- | s-ah-b-ay-er |
| ToKnow-Cognoscere | ko-noθer- | k-oh-n-oh-th-ay-er |
| ToThink | kw--idar- | k-w-e-d-ah-er |
| ToThink-Pensare | pensar- | p-ay-n-s-ah-er |
| ToFear | temer- | t-ay-m-ay-er |

Appendix 4 - Word Lists by Language

| | | |
|-----------------------------|-------------|----------------------------------|
| ToFear-Tremere | trem-er- | t-er-ay-m-ay-er |
| ToSleep | d-ormir- | d-oh-er-m-e-er |
| ToLive | bibir- | b-e-b-e-er |
| ToDie | morir- | m-oh-er-e-er |
| ToSwim | n-adar- | n-ah-d-ah-er |
| ToSwim-Navigare | nabegar- | n-ah-b-ay-g-ah-er |
| ToFly | bolar- | b-oh-l-ah-er |
| ToWalk | kaminar- | k-ah-m-e-n-ah-er |
| ToWalk-Ambitare | and--ar- | ah-n-d-ah-er |
| ToCome | benir- | b-ay-n-e-er |
| ToLieAsInABed | ekstender- | ay-k-s-t-ay-n-d-ay-er |
| ToLieAsInABed-lacere | ja-θer- | VdPalatalFricativeah-th-ay-er |
| ToSit | s-e--r- | s-ay-er |
| ToSit-Sedentare | se--ntar- | s-ay-n-t-ah-er |
| ToStand | estar- | ay-s-t-ah-er |
| ToStand-Levare | jēbar- | VdPalatalFricativeay-b-ah-er |
| ToStand-Altiare | -alθ-ar- | ah-l-th-ah-er |
| ToTurnIntransitive | tornar- | t-oh-er-n-ah-er |
| ToTurnIntransitive-Gyrare | xirar- | xha-e-er-ah-er |
| ToTurnIntransitive | birar- | b-e-er-ah-er |
| -AncestralClass3 | | |
| ToTurnIntransitive-Torquere | torθer- | t-oh-er-th-ay-er |
| ToFall | k-a-er- | k-ah-ay-er |
| ToFall-Tumbare | tumbar | t-u-m-b-ah-er |
| ToHold | ten-er- | t-ay-n-ay-er |
| ToHold-Segurar | segurar | s-ay-g-u-er-ah-er |
| ToSqueeze | eksprem-ir- | ay-k-s-p-er-ay-m-e-er |
| ToSqueeze-Serrere | se-rar | s-ay-r-ah-er |
| ToSqueeze-Serare | θe-rar- | th-ay-r-ah-er |
| ToSqueeze-Appetere | a-p--retar- | ah-p-er-ay-t-ah-er |
| ToSqueeze-Stringere | estrep-ir- | ay-s-t-er-ay-VdPalatalNasal-e-er |
| ToRub | fregar- | f-er-ay-g-ah-er |
| ToRub-Frictare | frotar- | f-er-oh-t-ah-er |
| ToRub-Frictiare | frisar | f-r-e-s-ah-er |
| ToWash | laβar- | l-ah-bb-ah-er |
| ToWipe-Extergere | e-starsir- | ay-s-t-ah-er-s-e-er |
| ToWipe-Exsucare | enx-ug-ar- | ay-n-xha-u-g-ah-er |
| ToWipe-Limpidare | limp-j-ar- | l-e-m-p-jg-ah-er |
| ToPull | tirar- | t-e-er-ah-er |
| ToPull-Pulsare | pu-xar- | p-u-xha-ah-er |
| ToThrow | -e--tʃar- | ay-ts-ah-er |

Appendix 4 - Word Lists by Language

| | | |
|-----------------------|-------------|------------------------------------|
| ToThrow-Lanceare | lan-θ-ar- | l-ah-n-th-ah-er |
| ToThrow-Eruncare | a-rankar- | ah-r-ah-n-k-ah-er |
| ToTie | legar- | l-ay-g-ah-er |
| ToTie-Aptare | a-tar- | ah-t-ah-er |
| ToSew | ko--s-er- | k-oh-s-ay-er |
| ToCount | kon--tar- | k-oh-n-t-ah-er |
| ToCount-Enumerare | enumerar- | ay-n-u-m-ay-er-ah-er |
| ToSay | deθir- | d-ay-th-e-er |
| ToSing-AncestralClass | kantar- | k-ah-n-t-ah-er |
| ToPlay-Ludere | ludir- | l-u-d-e-er |
| ToPlay-Jiocare | xu-gar- | xha-u-j-ah-er |
| ToFloat | flugtwar- | f-l-u-g-t-w-ah-er |
| ToFlow | fluir- | f-l-u-e-er |
| ToFlow-Colare | kolar- | k-oh-l-ah-er |
| ToFlow-Excurrere | e-skurir- | ay-s-k-u-r-e-er |
| ToFlow-Currere | ko-rer- | k-oh-r-ay-er |
| ToFreeze | -elar-- | ay-l-ah-er |
| Sun | sol-- | s-oh-l |
| Moon | luna | l-u-n-ah |
| Star | estre-ja | ay-s-t-er-ay-VdPalatalFricative-ah |
| Water | 'a-ɣwa | ah-juh-w-ah |
| Rain | j-u-bja | VdPalatalFricative-u-b-jg-ah |
| Lake | lago- | l-ah-j-oh |
| Sea | mar- | m-ah-er |
| Salt | sal-- | s-ah-l |
| Earth | 'tje-ra | t-jg-ay-r-ah |
| Fog | kali--na- | k-ah-l-e-n-ah |
| Fog-Nebula | nje-b-la | n-jg-ay-b-l-ah |
| Fog-Tenebras | t-injebblas | t-e-n-jg-ay-b-l-ah-s |
| Fog-Fumata | fumata | f-u-m-ah-t-ah |
| Sky | 'θjelo | th-jg-ay-l-oh |
| Wind | 'bjento- | b-jg-ay-n-t-oh |
| Fire-Focus | fwego- | f-w-ay-g-oh |
| ToBurn-Cremare | k-emar- | k-ay-m-ah-er |
| ToBurn-Flammare | fla-mear- | f-l-ah-m-ay-ah-er |
| ToBurn-Ardere | arder- | ah-er-d-ay-er |
| ToBurn-Flagrare | flagrar | f-l-ah-g-er-ah-er |
| ToBurn-Incendere | enθend-er- | ay-n-th-ay-n-d-ay-er |
| Green | ber-de- | b-ay-er-d-ay |
| Year | a-po- | ah-VdPalatalNasal-oh |
| And-Et | i- | e |

Appendix 4 - Word Lists by Language

| | | |
|--------------|----------|-----------------|
| Name-Nominem | nom-bre- | n-oh-m-b-er-ay |
| Tongue | 'lengwa | l-ay-nya-g-w-ah |

Italian

| Ancestral Class | IPA | Sounds |
|-----------------|-------------|---------------------------------------|
| I | -i-o | e-oh |
| YouSingular | tu | t-u |
| We | no:i- | n-O-e |
| YouPlural | 'vo:i- | v-O-e |
| Here | ---kw--i- | k-w-e |
| There | --la- | l-ah |
| There-Ibi | -vi | v-e |
| Who-Qui | k-i- | k-e |
| What | k-e- | k-ay |
| When-Quando | kwando | k-w-ah-n-d-oh |
| How-Quomodo | kome-- | k-oh-m-ay |
| Not | non | n-oh-n |
| Not-Nec | ne- | n-ay |
| All | oppi | oh-VdPalatalNasal-VdPalatalNasal-e |
| All-Totus | tutto- | t-u-t-t-oh |
| Many | molto- | m-oh-l-t-oh |
| Many-Tantus | tanto- | t-ah-n-t-oh |
| Some | alkuno | ah-l-k-u-n-oh |
| Few | poko- | p-euh-k-oh |
| Other | alt-ro | ah-l-t-r-oh |
| One | 'uno- | u-n-oh |
| Two-Duae | du-e | d-u-ay |
| Three | 'tr-e- | t-r-ay |
| Five | 'tʃɪŋkwe | ts-e-nya-k-w-ay |
| Big | mappo- | m-ah-VdPalatalNasal-VdPalatalNasal-oh |
| Big-Grandem | grande- | g-r-ah-n-d-ay |
| Long-Longum | lu-ngo- | l-u-n-g-oh |
| Long-Largum | largo- | l-ah-r-g-oh |
| Wide | lato- | l-ah-t-oh |
| Wide-Amplum | ampjo- | ah-m-p-jg-oh |
| Small-Pittinus | pittʃino- | p-e-t-ts-e-n-oh |
| Small-Pitulus | pikkolo- | p-e-k-k-oh-l-oh |
| Narrow | angusto- | ah-n-g-u-s-t-oh |
| Narrow-Strictus | -str-e-tto- | s-t-r-ay-t-t-oh |
| Fish-Piskem | peffe- | p-ay-shh-shh-ay |

Appendix 4 - Word Lists by Language

| | | |
|-----------------------------|--------------|---|
| Bird-Avicellum | --u-tʃ-ello- | u-t-ts-eh-l-l-oh |
| Bird-Passerem | passero- | p-ah-s-s-ay-r-oh |
| Flower | 'fjo:re- | f-jg-O-er-ay |
| Nose | na:so- | n-A-s-oh |
| Nose-Nares | naritʃe | n-ah-r-e-ts-ay |
| ToDrink | be---re | b-ay-er-ay |
| ToEat-Manducare | mandʒ--are | m-ah-n-VdPalatoAlveolarSibilant-ah-er-ay |
| ToBite | mordere | m-euh-r-d-ay-r-ay |
| ToBite-Morsicare | morsikare | m-oh-r-s-e-k-ah-er-ay |
| ToSpit-Sputare | -sputare | s-p-u-t-ah-er-ay |
| ToKnow-Sapere | sap-e:re | s-ah-p-ai-r-ay |
| ToKnow-Cognoscere | ko-noʃfere | k-oh-n-oh-shh-shh-ay-r-ay |
| ToThink | k-odgitare | k-oh-VdPalatoAlveolarSibilant-e-t-ah-r-ay |
| ToThink-Pensare | pensare | p-ay-n-s-ah-er-ay |
| ToFear | teme:re | t-ay-m-ai-r-ay |
| ToFear-Tremere | trem-are | t-r-ay-m-ah-r-ay |
| ToSleep | d-ormi:re | d-oh-r-m-E-r-ay |
| ToLive | vi:vere | v-E-v-ay-r-ay |
| ToDie | mori:re | m-oh-r-E-r-ay |
| ToSwim | nwotare | n-w-oh-t-ah-er-ay |
| ToSwim-Navigare | navigare | n-ah-v-e-g-ah-r-ay |
| ToFly | volare | v-oh-l-ah-er-ay |
| ToFly-Exvolare | zvola:re | zz-v-oh-l-A-er-ay |
| ToWalk | kammina:re | k-ah-m-m-e-n-A-er-ay |
| ToWalk-Mergere | mærdʒere | m-eh-r-VdPalatoAlveolarSibilant-ay-r-ay |
| ToWalk-Ambitare | and--are | ah-n-d-ah-r-ay |
| ToCome | veni:re | v-ay-n-E-er-ay |
| ToLieAsInABed | e-stendere | ay-s-t-eh-n-d-ay-r-ay |
| ToLieAsInABed-lacere | dʒa-tʃe:re | VdPalatoAlveolarSibilant-ah-ts-ai-er-ay |
| ToSit | s-edere | s-ay-d-ay-r-ay |
| ToStand | -sta:re | s-t-A-r-ay |
| ToStand-Levare | leva:re | l-ay-v-A-r-ay |
| ToStand-Altiare | -altsare | ah-l-VlAlveolarSibilantAffricate-ah-r-ay |
| ToTurnIntransitive | tornare | t-oh-r-n-ah-r-ay |
| ToTurnIntransitive-Gyrare | dʒira:re | VdPalatoAlveolarSibilant-e-r-A-er-ay |
| ToTurnIntransitive | virare | v-e-r-A-er-ay |
| -AncestralClass3 | | |
| ToTurnIntransitive-Torquere | tortʃere | t-euh-r-ts-ay-r-ay |
| ToFall | k-ade:re | k-ah-d-ai-er-ay |
| ToHold | ten-e:re | t-ay-n-ai-er-ay |
| ToSqueeze | --sprēm-ere | s-p-r-eh-m-ay-r-ay |

Appendix 4 - Word Lists by Language

| | | |
|-----------------------|-------------|--|
| ToSqueeze-Serare | serrare | s-ay-r-r-ah-r-ay |
| ToSqueeze-Stringere | -strindgere | s-t-r-e-n-VdPalatoAlveolarSibilant-ay-r-ay |
| ToRub | frega:re | f-r-ay-j-A-r-ay |
| ToRub-Frictare | frettare | f-r-ay-t-t-ah-r-ay |
| ToWash | lava:re | l-ah-v-A-r-ay |
| ToWipe | tɛrdgere | t-eh-r-VdPalatoAlveolarSibilant-ay-r-ay |
| ToWipe-Exsucare | aff-ug-a:re | ah-shh-shh-u-g-A-r-ay |
| ToPull | tira:re | t-e-r-A-r-ay |
| ToPull-Pulsare | pulsa:re | p-u-l-s-A-r-ay |
| ToPull-Trahere | tra-r-re | t-r-ah-r-r-ay |
| ToPush | impindgere | e-m-p-e-n-VdPalatoAlveolarSibilant-ay-r-ay |
| ToThrow | dʒe-ttare | VdPalatoAlveolarSibilant-ay-t-t-ah-r-ay |
| ToThrow-Lanceare | lantʃa:re | l-ah-n-ts-A-r-ay |
| ToThrow-Eruncare | arrontʃa:re | ah-r-r-oh-n-ts-A-r-ay |
| ToTie | lega:re | l-ay-g-A-r-ay |
| ToSew | ku--tʃ-i:re | k-u-ts-E-r-ay |
| ToCount | kon--ta:re | k-oh-n-t-A-r-ay |
| ToCount-Enumerare | enumera:re | ay-n-u-m-ay-r-A-r-ay |
| ToSay | di:--re | d-E-r-ay |
| ToSay-Exponere | --spor-re | s-p-oh-r-r-ay |
| ToSing-AncestralClass | kanta:re | k-ah-n-t-A-r-ay |
| ToPlay-Jiocare | dʒo-ka:re | VdPalatoAlveolarSibilant-oh-k-A-r-ay |
| ToFloat | fluttuare | f-l-u-t-t-u-ah-r-ay |
| ToFloat-Fluitare | fluitare | f-l-u-e-t-ah-r-ay |
| ToFlow | fluire | f-l-u-e-r-ay |
| ToFlow-Colare | kola:re | k-oh-l-A-r-ay |
| ToFlow-Excurrere | --skorrere | s-k-oh-r-r-ay-r-ay |
| ToFlow-Currere | korrere | k-oh-r-r-ay-r-ay |
| ToFreeze | dʒelare | VdPalatoAlveolarSibilant-ay-l-ah-r-ay |
| ToFreeze-Glaciare | gʒattʃare | g-jg-ah-t-ts-jg-ah-r-ay |
| Sun | sole- | s-oh-l-ay |
| Moon | luna | l-u-n-ah |
| Star | -st-ella | s-t-ay-l-l-ah |
| Water | akkwa | ah-k-k-w-ah |
| Rain | pjodɔ̃-a | p-jg-oh-d-VdPalatoAlveolarSibilant-ah |
| Lake | lago- | l-ah-g-oh |
| Sea | mare | m-ah-r-ay |
| Salt | sale- | s-ah-l-ay |
| Earth | 't-erra | t-eh-r-r-ah |
| Fog | kalidʒine- | k-ah-l-e-VdPalatoAlveolarSibilant-e-n-ay |

Appendix 4 - Word Lists by Language

| | | |
|------------------------|-------------|--------------------------|
| Fog-Nebula | n-ebb-ja | n-ay-b-b-jg-ah |
| Fog-Tenebrae | tɛ:n-ebre | t-Eh-n-ay-b-r-ay |
| Fog-Tenebras | t-ɛ:n-ebre- | t-Eh-n-ay-b-r-ay |
| Fog-Fumata | fuma:ta | f-u-m-A-t-ah |
| Sky | 'tʃ-ɛlo- | ts-eh-l-oh |
| Wind | 'v-ɛnto- | v-eh-n-t-oh |
| Fire-Focus | fwɔko- | f-w-euh-k-oh |
| ToBurn-Brojan | brutʃa:re | b-r-u-ts-A-r-ay |
| ToBurn-Cremare | kremare | k-r-ay-m-ah-r-ay |
| ToBurn-Flammare | fjammare | f-jg-ah-m-m-ah-r-ay |
| ToBurn-Ardere | ardere | ah-r-d-ay-r-ay |
| ToBurn-Flagrare | flagrare | f-l-ah-g-r-ah-r-ay |
| ToBurn-Incendere | intʃɛndjare | e-n-ts-eh-n-d-jg-ah-r-ay |
| ToBurn-AncestralClass8 | ustolare | u-s-t-oh-l-ah-r-ay |
| Green | ver-de- | v-ay-r-d-ay |
| Year | anno- | ah-n-n-oh |
| And-Et | e- | ay |
| Name-Nomen | no:me- | n-O-m-ay |
| Tongue | 'lingwa | l-e-n-g-w-ah |

Brazilian Portuguese

| Ancestral Class | IPA | Sounds |
|-----------------------------|-----------|-------------------------------|
| I | -e-w | ay-w |
| YouSingular | tu | t-u |
| YouSingular-VostramMercedem | vos-e- | v-oh-s-ay |
| We | nɔj-s | n-euh-jg-s |
| YouPlural | vɔjs | v-euh-jg-s |
| Here | -a-k---i- | ah-k-e |
| There | --la- | l-ah |
| There-Adlbi | ai | ah-e |
| Who-Quem | k-ẽj-- | k-nasal_diphthong_portuguese1 |
| What | k-i- | k-e |
| When-Quando | kwẽ-du | k-w-ahn-d-u |
| How-Quomodo | komu-- | k-oh-m-u |
| Not | nẽw- | n-ahn-wh |
| Not-Nec | nẽj- | n-nasal_diphthong_portuguese1 |
| All-Totus | to-du- | t-oh-d-u |
| Many | mũj-tu- | m-ooo-jn-t-u |
| Many-Tantus | tẽ-tu | t-ahn-t-u |
| Some | awgũ-- | ah-w-g-ooo |

Appendix 4 - Word Lists by Language

| | | |
|-------------------|--------------|-------------------------------------|
| Few | powku- | p-oh-w-k-u |
| Other | owt-ru | oh-w-t-er-u |
| Other-Alius | aw--- | ah-w |
| One | ũ--- | ooo |
| Two-Duos | d-ojs | d-oj_diphthong-s |
| Two-Duas | duəs | d-u-ahh-s |
| Three | tr-es | t-er-ay-s |
| Five | 'sĩ-k-u | s-een-k-u |
| Big-Grandem | grẽ-ɖʒi- | g-er-ahn-VdPalatoAlveolarSibilant-e |
| Long-Longum | lõ-gu- | l-on-g-u |
| Long-Largum | laɣgu- | l-ah-rr-g-u |
| Wide | latu- | l-ah-t-u |
| Wide-Amplum | ẽ-f-u- | ahn-shh-u |
| Small-Pittinus | pekenu- | p-ay-k-ay-n-u |
| Narrow-Strictus | istr-ej--tu- | e-s-t-er-ej_diphthong-t-u |
| Fish-Piskem | pejf-i- | p-ej_diphthong-shh-e |
| Bird-Avem | avi- | ah-v-e |
| Bird-Passerem | pa-sɛru- | p-ah-s-ahh-er-u |
| Flower | flox-- | f-l-oh-rr |
| Nose-Nares | naris- | n-ah-er-e-s |
| ToDrink | beb-ɛɤ- | b-ay-b-ay-rr |
| ToEat | kome--- | k-oh-m-ay |
| ToEat-Manducare | mẽ-ʒ--aɤ- | m-ahn-gzah-ah-rr |
| ToBite | moɤdeɤ- | m-oh-rr-d-ay-rr |
| ToBite-Morsicare | mu-səga-- | m-u-s-aah-g-ah |
| ToSuck | sugaɤ- | s-u-g-ah-rr |
| ToSpit | ku-spiɤ- | k-u-s-p-e-rr |
| ToKnow-Sapere | sab-ɛɤ- | s-ah-b-ay-rr |
| ToKnow-Cognoscere | ko-ɲes-ɛɤ- | k-oh-VdPalatalNasal-ay-s-ay-rr |
| ToThink | k-uʒitaɤ- | k-u-gzah-e-t-ah-rr |
| ToThink-Pensare | pẽ-saɤ- | p-ehn-s-ah-rr |
| ToFear | temeɤ- | t-ay-m-ay-rr |
| ToFear-Tremere | trem-ɛɤ- | t-er-ay-m-ay-rr |
| ToSleep | d-oɤmiɤ- | d-oh-rr-m-e-rr |
| ToLive | viveɤ- | v-e-v-ay-rr |
| ToDie | moɤeɤ- | m-oh-rr-ay-rr |
| ToSwim | n-adaɤ- | n-ah-d-ah-rr |
| ToSwim-Navigare | naviɣaɤ- | n-ah-v-eee-juh-ah-rr |
| ToFly | vo-aɤ- | v-oh-ah-rr |
| ToWalk | kemiɲaɤ- | k-ahh-m-e-VdPalatalNasal-ah-rr |
| ToWalk-Ambitare | ẽ-d--aɤ- | ahn-d-ah-rr |

Appendix 4 - Word Lists by Language

| | | |
|-----------------------------|-------------|---------------------------|
| ToCome | v--iʁ- | v-e-rr |
| ToLieAsInABed | istē-deʁ- | e-s-t-ehn-d-ay-rr |
| ToLieAsInABed-lacere | ʒe-zex- | gzah-ahh-zz-ay-rr |
| ToSit | s-e--ʁ- | s-ay-rr |
| ToSit-Sedentare | sē---tar- | s-ehn-t-ah-er |
| ToStand | iftar- | eee-shh-t-ah-er |
| ToStand-Levare | levaʁ- | l-ay-v-ah-rr |
| ToStand-Altiare | -aʁs-a-- | ah-ssha-s-ah |
| ToTurnIntransitive | toʁnaʁ- | t-oh-rr-n-ah-rr |
| ToTurnIntransitive-Gyrare | ʒirar- | gzah-e-er-ah-er |
| ToTurnIntransitive | virar- | v-e-er-ah-er |
| -AncestralClass3 | | |
| ToTurnIntransitive-Torquere | turser- | t-u-r-s-ay-r |
| ToFall | k-e-ir- | k-ahh-e-er |
| ToFall-Tumbare | tõ-baʁ | t-on-b-ah-rr |
| ToHold | te---ʁ- | t-ay-rr |
| ToHold-Segurar | siɣuraʁ | s-eee-g-u-er-ah-rr |
| ToSqueeze | i-ʃprəm-eʁ- | e-shh-p-r-aah-m-ay-rr |
| ToSqueeze-Serrere | se-ʁa-- | s-ay-rr-ah |
| ToSqueeze-Serare | si-ʁar- | s-eee-rr-ah-er |
| ToSqueeze-Appetere | e-pi-r-tar- | ahh-p-eee-er-t-ah-er |
| ToSqueeze-Stringere | əʃtri-ʒir- | aah-shh-t-r-een-gzah-e-r |
| ToRub-Exfricare | iffrigar | eee-shh-f-er-eee-g-ah-er |
| ToWash | levar- | l-ahh-v-ah-er |
| ToWipe-Exsucare | ẽ-f-ug-ar- | ehn-shh-u-g-ah-er |
| ToWipe-Limpidare | li-p--ar- | l-een-p-ah-er |
| ToPull | tʃira-- | ts-e-er-ah |
| ToPull-Pulsare | pu-far- | p-u-shh-ah-er |
| ToPull-Trahere | tra-ze-- | t-er-ah-zz-ay |
| ToThrow | ʒej-tar- | gzah-ej_diphthong-t-ah-er |
| ToThrow-Lanceare | lẽ-s-a-- | l-ahn-s-ah |
| ToTie-Aptare | e-tar- | ahh-t-ah-er |
| ToSew | ku--z-er- | k-u-zz-ay-er |
| ToCount | kõ---tar- | k-on-t-ah-er |
| ToCount-Enumerare | enumerar- | ay-n-u-m-ay-er-ah-er |
| ToSay | diz-er- | d-e-zz-ay-er |
| ToSing-AncestralClass | kẽ-tar- | k-ahn-t-ah-er |
| ToPlay-Jiocare | ʒo-gaʁ- | gzah-oh-g-ah-rr |
| ToFloat | flu-tuaʁ- | f-l-u-t-u-ah-rr |
| ToFlow | flwiʁ- | f-l-w-e-rr |
| ToFlow-Colare | ko-aʁ- | k-oh-ah-rr |

Appendix 4 - Word Lists by Language

| | | |
|------------------|-------------|---|
| ToFlow-Excurrere | i-ʃko-ʁeʁ- | e-shh-k-oh-rr-ay-rr |
| ToFlow-Currere | ko-ʁeʁ- | k-oh-rr-ay-rr |
| ToFreeze | ʒilar- | gzah-eee-l-ah-er |
| Sun | sɔw-- | s-euh-w |
| Moon | lu-e | l-u-ahh |
| Star | istre-lə | e-s-t-er-ay-l-ahh |
| Water | 'a-gwə | ah-g-w-ahh |
| Rain | ʃ-u-v-e | shh-u-v-ahh |
| Lake | lagu- | l-ah-g-u |
| Sea | maʁ- | m-ah-rr |
| Salt | saw-- | s-ah-w |
| Earth | 't-e-ʁə | t-ay-rr-ahh |
| Fog | kalizẽj--- | k-ah-l-e-gzah -nasal_diphthong_portuguese1 |
| Fog-Nebula | n-ɛ-vw-e | n-eh-v-w-ahh |
| Fog-Fumata | fumase | f-u-m-ah-s-ahh |
| Sky | s-ɛw-- | s-eh-w |
| Wind | 'v-ẽ-tu- | v-ehn-t-u |
| Fire-Focus | f-ogu- | f-oh-g-u |
| ToBurn-Cremare | k-ejmare | k-diphthong_portuguese-m-ah-er-ay |
| ToBurn-Ardere | aʁdeʁ- | ah-rr-d-ay-rr |
| ToBurn-Flagrare | flagʁaʁ- | f-l-ah-j-rr-ah-rr |
| ToBurn-Incendere | ĩ-sendʒiar- | een-s-ay-n-VdPalatoAlveolarSibilant -NearCloseFrontUnrounded-ah-er |
| Green | ver-di- | v-ay-er-d-eee |
| Year | e-nu- | ahh-n-u |
| And-Et | i- | e |
| Name-Nomen | nomi- | n-oh-m-e |
| Tongue | 'lĩ-gwə | l-een-g-w-ahh |

Portuguese

| Ancestral Class | IPA | Sounds |
|-----------------------------|-----------|------------|
| I | -e-w | ay-w |
| YouSingular | tu | t-u |
| YouSingular-VostramMercedem | vɔs-e- | v-euh-s-ay |
| We | nɔ-ʃ | n-euh-shh |
| YouPlural | vo-ʃ | v-oh-shh |
| Here | -e-k---i- | ahh-k-e |
| There | --la- | l-ah |
| There-Adlbi | ei | ahh-e |

Appendix 4 - Word Lists by Language

| | | |
|-------------------|--------------|---------------------------------------|
| Who-Quem | k-ẽj-- | k-nasal_diphthong_portuguese2 |
| What | k-i- | k-eee |
| When-Quando | kwẽ-du | k-w-ahn-d-u |
| How-Quomodo | komu-- | k-oh-m-u |
| Not | nẽw- | n-ahn-wh |
| Not-Nec | nẽj- | n-nasal_diphthong_portuguese2 |
| All-Totus | to-đu- | t-oh-dd-u |
| Many | mũj-tu- | m-ooo-jn-t-u |
| Many-Tantus | tẽ-tu- | t-ahn-t-u |
| Some | ałgũ-- | ah-ssha-g-ooo |
| Few | powku- | p-oh-w-k-u |
| Other | owt-ru | oh-w-t-er-u |
| Other-Alius | ał--- | ah-ssha |
| One | ũ--- | ooo |
| Two-Duos | d-ojɸ | d-oj_diphthong-shh |
| Two-Duas | duɛɸ | d-u-ahh-shh |
| Three | tr-eɸ | t-er-ay-shh |
| Five | 'sĩ-k-u | s-een-k-u |
| Big-Grandem | grẽ-di- | g-er-ahn-d-eee |
| Long-Longum | lõ-gu- | l-on-g-u |
| Long-Largum | largu- | l-ah-er-g-u |
| Wide | latu- | l-ah-t-u |
| Wide-Amplum | ẽ-f-u- | ahn-shh-u |
| Small-Pittinus | pikenu- | p-eee-k-ay-n-u |
| Narrow-Strictus | iftr-ɛj--tu- | eee-shh-t-er-diphthong_portuguese-t-u |
| Fish-Piskem | pɛjɸ-i- | p-diphthong_portuguese-shh-eee |
| Bird-Avem | avi- | ah-v-eee |
| Bird-Passerem | pa-sɛru- | p-ah-s-ahh-er-u |
| Flower | flor-- | f-l-oh-er |
| Nose-Nares | nɛrɪɸ- | n-ahh-er-e-shh |
| ToDrink | bɪɸ-er- | b-eee-bb-ay-er |
| ToEat | kum--er- | k-u-m-ay-er |
| ToEat-Manducare | mẽ-ɜ--ar- | m-ahn-gzah-ah-er |
| ToBite | murðer- | m-u-er-dd-ay-er |
| ToBite-Morsicare | mu-səgar- | m-u-s-aah-g-ah-r |
| ToSuck | sugar- | s-u-g-ah-er |
| ToSpit | ku-ɸpir- | k-u-shh-p-e-er |
| ToKnow-Sapere | sɛb-er- | s-ahh-b-ay-er |
| ToKnow-Cognoscere | ku-nɪs-er- | k-u-VdPalatalNasal-eee-s-ay-er |
| ToThink | k-uzitar- | k-u-gzah-e-t-ah-er |
| ToThink-Pensare | pẽ-sar- | p-ehn-s-ah-er |

Appendix 4 - Word Lists by Language

| | | |
|-----------------------------|-------------|--------------------------------|
| ToFear | timer- | t-eee-m-ay-er |
| ToFear-Tremere | trim-er- | t-er-eee-m-ay-er |
| ToSleep | d-urmīr- | d-u-er-m-e-er |
| ToLive | viver- | v-e-v-ay-er |
| ToDie | muker- | m-u-rr-ay-er |
| ToSwim | n-eðar- | n-ahh-dd-ah-er |
| ToSwim-Navigare | neviyar- | n-ahh-v-eee-juh-ah-er |
| ToFly | vw-ar- | v-w-ah-er |
| ToWalk | kemīnar- | k-ahh-m-e-VdPalatalNasal-ah-er |
| ToWalk-Ambitare | ẽ-d--ar- | ahn-d-ah-er |
| ToCome | v--ir- | v-e-er |
| ToLieAsInABed | iftē-der- | e-shh-t-ehn-d-ay-er |
| ToLieAsInABed-lacere | zẽ-zer- | gzah-ahh-zz-ay-er |
| ToSit | s-e--r- | s-ay-er |
| ToSit-Sedentare | sẽ---tar- | s-ehn-t-ah-er |
| ToStand | iftar- | eee-shh-t-ah-er |
| ToStand-Levare | livar- | l-eee-v-ah-er |
| ToStand-Altiare | -aʎs-ar- | ah-ssha-s-ah-er |
| ToTurnIntransitive | turnar- | t-u-er-n-ah-er |
| ToTurnIntransitive-Gyrare | zirar- | gzah-e-er-ah-er |
| ToTurnIntransitive | zirar- | gzah-e-er-ah-er |
| -AncestralClass3 | | |
| ToTurnIntransitive-Torquere | turser- | t-u-r-s-ay-r |
| ToFall | k-e-ir- | k-ahh-e-er |
| ToFall-Tumbare | tõ-bar | t-on-b-ah-er |
| ToHold | te---r- | t-ay-er |
| ToHold-Segurar | siyurar | s-eee-juh-u-er-ah-er |
| ToSqueeze | i-ʃprəm-er- | e-shh-p-r-aah-m-ay-r |
| ToSqueeze-Serrere | sə-rar- | s-aah-VlUvularTrill-ah-er |
| ToSqueeze-Serare | si-ʁar- | s-eee-rr-ah-er |
| ToSqueeze-Appetectorare | e-pi-r-tar- | ahh-p-eee-er-t-ah-er |
| ToSqueeze-Stringere | əstrĩzir- | aah-shh-t-r-eeen-gzah-e-r |
| ToRub-Exfricare | iffrīyar | eee-shh-f-er-eee-juh-ah-er |
| ToWash | levar- | l-ahh-v-ah-er |
| ToWipe-Exsucare | ẽ-f-uʏ-ar- | ehn-shh-u-juh-ah-er |
| ToWipe-Limpidare | lĩ-p--ar- | l-eeen-p-ah-er |
| ToPull | tīrar- | t-e-er-ah-er |
| ToPull-Pulsare | pu-far- | p-u-shh-ah-er |
| ToPull-Trahere | trẽ-zer- | t-er-ahh-zz-ay-er |
| ToThrow | zej-tar- | gzah-ej_diphthong-t-ah-er |
| ToThrow-Lanceare | lẽ-s-ar- | l-ahn-s-ah-er |

Appendix 4 - Word Lists by Language

| | | |
|-----------------------|------------|--|
| ToTie-Aptare | ɐ-tar- | ahh-t-ah-er |
| ToSew | ku--z-er- | k-u-zz-ay-er |
| ToCount | kõ---tar- | k-on-t-ah-er |
| ToCount-Enumerare | enumerar- | ay-n-u-m-ay-er-ah-er |
| ToSay | diz-er- | d-e-zz-ay-er |
| ToSing-AncestralClass | kẽ-tar- | k-ahn-t-ah-er |
| ToPlay-Jiocare | ʒu-ɣar- | gzah-u-juh-ah-er |
| ToFloat | flu-tuar- | f-l-u-t-u-ah-er |
| ToFlow | flwir- | f-l-w-e-er |
| ToFlow-Colare | ku-ar- | k-u-ah-er |
| ToFlow-Excurrere | i-ʃku-rer- | e-shh-k-u-VIUvularTrill-ay-er |
| ToFlow-Currere | ku-ɐer- | k-u-rr-ay-er |
| ToFreeze | ʒilar- | gzah-eee-l-ah-er |
| Sun | sɔɫ-- | s-euh-ssha |
| Moon | lu-ɐ | l-u-ahh |
| Star | ɨftre-lɐ | eee-shh-t-er-ay-l-ahh |
| Water | 'a-gwɐ | ah-g-w-ahh |
| Rain | ʃ-u-v-ɐ | shh-u-v-ahh |
| Lake | layu- | l-ah-juh-u |
| Sea | mar- | m-ah-er |
| Salt | sal-- | s-ah-l |
| Earth | 't-ɛ-ɐɐ | t-eh-rr-ahh |
| Fog | kelizẽj--- | k-ahh-l-e-gzah -nasal_diphthong_portuguese2 |
| Fog-Nebula | n-ɛ-vw-ɐ | n-eh-v-w-ahh |
| Fog-Tenebras | tr---ɛv-ɐʃ | t-er-eh-v-ahh-shh |
| Fog-Fumata | fumaseɐ | f-u-m-ah-s-ahh |
| Sky | s-ɛw-- | s-eh-w |
| Wind | 'v-ẽ-tu- | v-ehn-t-u |
| Fire-Focus | f-oɣu- | f-oh-juh-u |
| ToBurn-Cremare | k-ejmaɐɐ | k-ej_diphthong-m-ah-rr-ay |
| ToBurn-Ardere | ɐrder- | ahh-er-d-ay-er |
| ToBurn-Flagrare | flagrar- | f-l-ah-g-er-ah-er |
| ToBurn-Incendere | ĩ-sẽ-djar- | een-s-ehn-d-jg-ah-er |
| Green | ver-di- | v-ay-er-d-eee |
| Year | ɐ-nu- | ahh-n-u |
| And-Et | i- | e |
| Name-Nomen | nomi- | n-oh-m-eee |
| Tongue | 'lĩ-gwɐ | l-een-g-w-ahh |

Appendix 4 - Word Lists by Language

Catalan

| Ancestral Class | IPA | Sounds |
|-----------------------------|--------------|---------------------------------|
| I | -ʒ-ɔ | gzah-euh |
| YouSingular | tu | t-u |
| YouSingular-VostramMercedem | voste- | v-oh-s-t-ay |
| YouPlural | bu-s | b-u-s |
| Here | -a-k---i- | ah-k-e |
| There | ə-ʎa- | aah-yuh-ah |
| Who-Qui | k-i- | k-e |
| What | k-ε- | k-eh |
| When-Quando | kwan | k-w-ah-n |
| How-Quomodo | kɔm--- | k-euh-m |
| Not | no- | n-oh |
| Not-Nec | ni- | n-e |
| All-Totus | to-t-- | t-oh-t |
| Many | mol--- | m-oh-l |
| Many-Tantus | tant-- | t-ah-n-t |
| Some | əlgɔ-- | aah-l-g-u |
| Few | pɔk-- | p-euh-k |
| Other | alt-rə | ah-l-t-er-aah |
| One | 'un-- | u-n |
| Two-Duos | d-os | d-oh-s |
| Three | 'tr-ɛs | t-r-eh-s |
| Five | 'siŋk-- | s-e-nya-k |
| Big-Grandem | gran--- | j-r-ah-n |
| Long-Longum | ʎo-ŋ--- | yuh-oh-nya |
| Long-Largum | ʎark-- | yuh-ah-er-k |
| Wide-Amplum | amplə- | ah-m-p-l-aah |
| Small | pətit-- | p-aah-t-e-t |
| Narrow-Strictus | əstr-ɛ--t-- | aah-s-t-er-eh-t |
| Fish-Piskem | pɛf--- | p-ay-shh |
| Bird-Avem | aw-- | ah-w |
| Bird-Avicellum | --u--s-e-ʎ-- | u-s-ay-yuh |
| Flower | flɔ--- | f-l-euh |
| Nose | nas | n-ah-s |
| Nose-Nares | naːris- | n-A-r-NearCloseFrontUnrounded-s |
| ToDrink | bɛw--rə | b-eh-w-er-aah |
| ToEat-Manducare | məɲʒ--a-- | m-aah-VdPalatalNasal-gzah-ah |
| ToBite-Morsicare | mu-səɣa-- | m-u-s-aah-juh-ah |
| ToSpit-Exconspuere | əsku-pi-- | aah-s-k-u-p-e |

Appendix 4 - Word Lists by Language

| | | |
|-----------------------------|-------------|----------------------------------|
| ToKnow-Sapere | səβ-ε-- | s-aah-bb-eh |
| ToKnow-Cognoscere | ku-nεf-ə-- | k-u-n-eh-shh-aah |
| ToThink | k-u-jda-- | k-u-jg-d-ah |
| ToThink-Pensare | pənsa-- | p-aah-n-s-ah |
| ToFear | temə-- | t-ay-m-aah |
| ToSleep | d-urmi-- | d-u-r-m-e |
| ToLive | biw-rə | b-e-w-er-aah |
| ToDie | muri-- | m-u-er-e |
| ToSwim | n-əda-- | n-aah-d-ah |
| ToSwim-Navigare | nəbəga-- | n-aah-b-aah-g-ah |
| ToFly | bula-- | b-u-l-ah |
| ToWalk | kəmina-- | k-aah-m-e-n-ah |
| ToCome | bəni-- | b-aah-n-e |
| ToLieAsInABed | ə-stend-rə | aah-s-t-ay-n-d-er-aah |
| ToLieAsInABed-lacere | zaw--rə | gzah-ah-w-er-aah |
| ToStand | əsta-- | aah-s-t-ah |
| ToStand-Levare | ʎəba-- | yuh-aah-b-ah |
| ToStand-Altiare | -əls-a-- | aah-l-s-ah |
| ToTurnIntransitive | turna- | t-u-r-n-ah |
| ToTurnIntransitive-Gyrare | zira-- | gzah-e-er-ah |
| ToTurnIntransitive | bira-- | b-e-er-ah |
| -AncestralClass3 | | |
| ToTurnIntransitive-Torquere | tərsə-- | t-euh-r-s-aah |
| ToFall | k-aw-rə | k-ah-w-r-aah |
| ToFall-Tumbare | tumba- | t-u-m-b-ah |
| ToHold | tən-i-- | t-aah-n-e |
| ToSqueeze | ə-sprem-ə-- | aah-s-p-er-ay-m-aah |
| ToSqueeze-Serrere | sə-ra-- | s-aah-r-ah |
| ToSqueeze-Stringere | əstreɲə | aah-s-t-er-eh-VdPalatalNasal-aah |
| ToRub | frəga-- | f-er-aah-g-ah |
| ToRub-Frictiare | frəsa- | f-er-aah-s-ah |
| ToWash | ʎəba-- | yuh-aah-b-ah |
| ToWipe-Extergere | ə-stərzi-- | aah-s-t-aah-r-gzah-e |
| ToWipe-Exsucare | ə-f-uga-- | aah-shh-u-g-ah |
| ToPull | tira-- | t-e-er-ah |
| ToPull-Trahere | trε-w-rə | t-er-eh-w-er-aah |
| ToPush | əmpɛɲ-ə-- | aah-m-p-eh-VdPalatalNasal-aah |
| ToThrow | xi-ta-- | xha-e-t-ah |
| ToThrow-Lanceare | ʎəns-a-- | yuh-aah-n-s-ah |
| ToTie | ʎiya-- | yuh-e-juh-ah |
| ToSew | ku--z-i-- | k-u-zz-e |

Appendix 4 - Word Lists by Language

| | | |
|-----------------------|------------|------------------------|
| ToCount | kum--ta-- | k-u-m-t-ah |
| ToCount-Enumerare | enumera-- | ay-n-u-m-ay-er-ah |
| ToSay | di---- | d-e |
| ToSing-AncestralClass | kənta-- | k-aah-n-t-ah |
| ToPlay-Jiocare | ʒu-ga-- | gzah-u-g-ah |
| ToFloat | fluktua-- | f-l-u-k-t-u-ah |
| ToFlow | flui-- | f-l-u-e |
| ToFlow-Colare | kuʎa-- | k-u-ssha-ah |
| ToFlow-Excurrere | ə-sko-rə-- | aah-s-k-oh-r-aah |
| ToFlow-Currere | ko-rə-- | k-oh-r-aah |
| ToFreeze | ʒəla-- | gzah-aah-l-ah |
| ToFreeze-Glaciare | glə-s-a-- | g-l-aah-s-ah |
| Sun | sɔl-- | s-euh-l |
| Moon | ʎunə | yuh-u-n-aah |
| Star | əst-ɛ-l- | aah-s-t-eh-l |
| Water | 'aj-ɣwə | aj_diphthong-juh-w-aah |
| Rain | plu-ʒ-ə | p-l-u-gzah-aah |
| Lake | ʎak-- | yuh-ah-k |
| Sea | mar- | m-ah-r |
| Salt | sal-- | s-ah-l |
| Earth | 't-ɛ-rə | t-eh-r-aah |
| Fog-Nebula | n-e--wʎə | n-ay-w-l-aah |
| Fog-Tenebras | t-ən-ebɾəs | t-aah-n-ay-b-er-aah-s |
| Sky | s-ɛl-- | s-eh-l |
| Wind | b-en--- | b-ay-n |
| Fire-Focus | f-ɔk-- | f-euh-k |
| ToBurn-Cremare | krəma-- | k-r-aah-m-ah |
| ToBurn-Flammare | ʎama-- | f-ssha-ah-m-ah |
| ToBurn-Incendere | ənsend--rə | aah-n-s-ay-n-d-er-aah |
| Green | vɛɾ-t-- | v-eh-er-t |
| Year | a-ɲ-- | ah-VdPalatalNasal |
| And-Et | i- | e |
| Name-Nomen | nɔm-- | n-euh-m |

Walloon

| Ancestral Class | IPA | Sounds |
|-----------------|-------|--|
| I | -dʒ-ɪ | VdPalatoAlveolarSibilant -NearCloseFrontUnrounded |
| YouSingular | ty | t-eeh |
| We | no-- | n-oh |

Appendix 4 - Word Lists by Language

| | | |
|----------------------|---------------|----------------------------------|
| YouPlural | vo-s | v-oh-s |
| There | --la- | l-ah |
| Who-Qui | k-i:- | k-E |
| What | kwɛ:- | k-w-Eh |
| When-Quando | kwand | k-w-ah-n-d |
| How-Quomodo | kɔmẽ-- | k-euh-m-ehnn |
| Not-Nec | nẽ- | n-ehn |
| All-Totus | tɔ---- | t-euh |
| Few | põ--- | p-on |
| Other | õ-t--- | on-t |
| One | õ--- | on |
| Two-Duos | d-ø:- | d-o |
| Three | tr-ø:- | t-r-o |
| Five | sẽ-k-- | s-ehn-k |
| Big-Grandem | gã--- | j-rr-an |
| Long-Longum | lõ---- | l-on |
| Small | pi-ti--- | p-e-t-e |
| Narrow-Strictus | -stɔ-ø:----- | s-t-rr-o |
| Fish-Pescion | p-ɛhõ | p-eh-h-on |
| Bird-Avicellum | --u:-h-ɛ:---- | U-h-Eh |
| Flower | flø:ɔ-- | f-l-o-rr |
| Nose | ne--- | n-ay |
| ToDrink | b---ø:ɔ- | b-o-rr |
| ToEat-Manducare | maɲ---i:- | m-ah-VdPalatalNasal-E |
| ToSuck | sysi:- | s-eeh-s-E |
| ToKnow-Sapere | sav-ø:R- | s-ah-v-o-VIUvularTrill |
| ToKnow-Cognoscere | ki-nɔh---- | k-e-n-euh-h |
| ToThink-Pensare | pẽ-se-- | p-ehnn-s-ay |
| ToSleep | dwaɔmi-- | d-w-ah-rr-m-e |
| ToDie | mɔri-- | m-euh-VIUvularTrill-e |
| ToSwim-Navigare | nɛ--ɔzi:- | n-eh-VdPalatoAlveolarSibilant-E |
| ToFly | vɔle-- | v-euh-l-ay |
| ToWalk | tʃimine-- | ts-e-m-e-n-ay |
| ToWalk-Marcher | ma:rtʃi: | m-A-VIUvularTrill-ts-E |
| ToCome | vini-- | v-e-n-e |
| ToLieAsInABed-lacere | dʒe--re | VdPalatoAlveolarSibilant-ay-r-ay |
| ToStand | ɛs---- | eh-s |
| ToStand-Levare | lɔve-- | l-aah-v-ay |
| ToStand-Altiare | hɔ:-s-i:- | h-LongOpenMidBackRounded-s-E |
| ToTurnIntransitive | tu:rne- | t-U-r-n-ay |

Appendix 4 - Word Lists by Language

| | | |
|-----------------------|------------|----------------------------------|
| ToTurnIntransitive | vɪɛ-- | v-e-rr-ay |
| -AncestralClass3 | | |
| ToFall | tʃ-ɛ:--R- | ts-Eh-VIUvularTrill |
| ToFall-Tumbare | tum-e- | t-u-m-ay |
| ToHold | tin-i-- | t-e-n-e |
| ToSqueeze-Serare | sɛ-re-- | s-eh-VIUvularTrill-ay |
| ToSqueeze-Stringere | stringe | s-t-r-e-n-j-ay |
| ToRub | froj---- | f-r-øj_diphthong |
| ToRub-Frictare | fɹote-- | f-rr-oh-t-ay |
| ToWash | lave-- | l-ah-v-ay |
| ToWipe-Exsucare | --s-u-we-- | s-u-w-ay |
| ToPull | tire-- | t-e-r-ay |
| ToPull-Pulsare | pu:si:-- | p-U-s-E |
| ToThrow | dʒɛ-te-- | VdPalatoAlveolarSibilantɛh-t-ay |
| ToThrow-Lanceare | lanc-i:-- | l-ah-n-tya-E |
| ToTie | lɔji:-- | l-euh-jg-E |
| ToSew | kø:--z---- | k-o-zz |
| ToCount | kō--te-- | k-on-t-ay |
| ToSay | di:--ɸ- | d-E-rr |
| ToSing-AncestralClass | tʃã-te-- | ts-an-t-ay |
| ToPlay-Jiocare | dʒuw-e-- | VdPalatoAlveolarSibilant-u-w-ay |
| ToFlow-Colare | kɔle-- | k-euh-l-ay |
| ToFreeze | dʒale-- | VdPalatoAlveolarSibilant-ah-l-ay |
| Sun | sɔɓ- | s-euh-l-euh |
| Moon | løn- | l-uu-n |
| Star | -st-ø:-l- | s-t-o-l |
| Water | ɛ:--w- | Eh-w |
| Rain | plu:ɸ-- | p-l-U-rr |
| Lake | lak-- | l-ah-k |
| Sea | mɛɸ- | m-ay-rr |
| Salt | se--- | s-ay |
| Earth | t-ɛ:-ɸ- | t-Eh-rr |
| Sky | s-i:ɸ-- | s-E-rr |
| Wind | v-ẽ---- | v-ehn |
| Fire-Focus | f-ø:--- | f-o |
| ToBurn-Brojan | bɹu:le-- | b-rr-U-l-ay |
| Green | vɛɸ---- | v-eh-rr |
| Year | ã---- | an |
| And-Et | ɛ- | eh |
| Name-Nomen | nõ--- | n-on |
| Tongue | lẽu---- | l-eu_nasalized_diphthong |

Appendix 4 - Word Lists by Language

Friulian

| Ancestral Class | IPA | Sounds |
|-------------------|---------------|--|
| I | -j-o | jg-oh |
| YouSingular | tu | t-u |
| We | no:-- | n-O |
| YouPlural | vo:-- | v-O |
| Here | -a-k---i- | ah-k-e |
| Who-Qui | kwi- | k-w-e |
| What | tf-e- | ts-ay |
| When-Quando | kwant | k-w-ah-n-t |
| How-Quomodo | fjemu:t- | VlAlveoloPalatalSibilantAffricate-ay-m-U -t |
| Not | no- | n-oh |
| All-Totus | du-t-- | d-u-t |
| Many | mole-- | m-oh-l-tya |
| Many-Tantus | tanc-- | t-ah-n-tya |
| Few | po:k-- | p-O-k |
| Other | alt-ri | ah-l-t-r-e |
| One | un-- | u-nya |
| Two-Duos | d-oj- | d-oj_diphthong |
| Three | 'tr-e:- | t-r-ai |
| Five | 'tfɪŋk-- | ts-e-nya-k |
| Big-Grandem | grant-- | j-r-ah-n-t |
| Long-Longum | lunk-- | l-u-n-k |
| Long-Largum | lark-- | l-ah-r-k |
| Small-Pitulus | pi-tful-- | p-e-ts-u-l |
| Narrow-Strictus | -str-ε-t-- | s-t-r-eh-t |
| Fish-Piskem | pεs--- | p-eh-s |
| Bird-Avicellum | --u--tfjε-l-- | u-ts-jg-eh-l |
| Flower | flo:r-- | f-l-O-r |
| Nose | na:s-- | n-A-s |
| ToDrink | bevi-- | b-ay-v-e |
| ToEat-Manducare | manj--a:-- | m-ah-nya-VdPalatalStop-A |
| ToSuck | cuca:-- | tya-u-tya-A |
| ToSpit-Sputare | spuda:-- | s-p-u-d-A |
| ToKnow-Sapere | sav-e:-- | s-ah-v-ai |
| ToKnow-Cognoscere | ko-nos-i-- | k-oh-VdPalatalNasal-oh-s-e |
| ToThink-Pensare | penja:-- | p-ay-nya-s-A |
| ToFear | temi-- | t-ay-m-e |
| ToFear-Tremere | trim-a:-- | t-r-e-m-A |

Appendix 4 - Word Lists by Language

| | | |
|---------------------------|-------------|---------------------------------|
| ToSleep | d-urmi:-- | d-u-r-m-E |
| ToLive | vivi-- | v-e-v-e |
| ToDie | muri:-- | m-u-r-E |
| ToSwim | n-ada:-- | n-ah-d-A |
| ToSwim-Navigare | naviga:-- | n-ah-v-e-j-A |
| ToFly-Exvolare | zvola:-- | zz-v-oh-l-A |
| ToWalk | tʃamina-- | ts-jg-ah-m-e-n-ah |
| ToCome | vipi:- | v-e-VdPalatalNasal-E |
| ToLieAsInABed-lacere | je-si-- | jg-ay-s-e |
| ToSit-Sedentare | se--nta:-- | s-ay-n-t-A |
| ToStand | -sta:-- | s-t-A |
| ToStand-Levare | leva:-- | l-ay-v-A |
| ToStand-Altiare | -altʃa:-- | ah-l-t-shh-A |
| ToTurnIntransitive | torna:-- | t-oh-r-n-A |
| ToTurnIntransitive-Gyrare | dʒira:-- | VdPalatoAlveolarSibilant-e-r-A |
| ToTurnIntransitive | dʒira:-- | VdPalatoAlveolarSibilant-e-r-A |
| -AncestralClass3 | | |
| ToFall | tʃjade-- | ts-jg-ah-d-ay |
| ToHold | tinji-- | t-e-n-jg-e |
| ToSqueeze | e-sprim-i-- | ay-s-p-r-e-m-e |
| ToSqueeze-Stringere | strengi:-- | s-t-r-eh-n-j-E |
| ToRub | fre-a-- | f-r-ay-ah |
| ToWash | lava:-- | l-ah-v-A |
| ToWipe-Exsucare | --s-u-ja:-- | s-u-jg-A |
| ToPull | tira:-- | t-e-r-A |
| ToPull-Pulsare | pulsa:-- | p-u-l-s-A |
| ToPull-Trahere | traj---- | t-r-aj_diphthong |
| ToThrow-Lanceare | lantʃa:-- | l-ah-n-ts-A |
| ToTie | le-a:-- | l-ay-A |
| ToSew | ku--zi--- | k-u-zz-e |
| ToCount | kon--ta:-- | k-oh-n-t-A |
| ToSay | di:---- | d-E |
| ToSing-AncestralClass | canta:-- | tya-ah-n-t-A |
| ToPlay-Jiocare | dʒuj-a:-- | VdPalatoAlveolarSibilant-u-jg-A |
| ToFlow-Excurrere | --sko-ri:-- | s-k-oh-r-E |
| ToFlow-Currere | ko-ri-- | k-oh-r-e |
| ToFreeze-Glaciare | gla-tʃa:-- | j-l-ah-ts-A |
| Sun-Soliculus | sore--li- | s-oh-r-ay-l-e |
| Moon | lune | l-u-n-ay |
| Star | -st-ε-le | s-t-eh-l-ay |
| Water | a-g-e | ah-j-ay |

Appendix 4 - Word Lists by Language

| | | |
|---------------|----------|---------------|
| Rain | plo--je | p-l-oh-jg-ay |
| Lake | la:t-- | l-A-t |
| Sea | ma:r- | m-A-r |
| Salt | sa:l-- | s-A-l |
| Earth | tjε-re | t-jg-eh-r-ay |
| Fog-Fumata | fumate | f-u-m-ah-t-ay |
| Sky | tʃ-i:l-- | ts-E-l |
| Wind | 'v-int-- | v-e-n-t |
| Fire-Focus | f-u:k-- | f-U-k |
| ToBurn-Brojan | bruza:-- | b-r-u-zz-A |
| Green | vεr-t-- | v-eh-r-t |
| Year | a-ŋ-- | ah-nya |
| And-Et | e- | ay |
| Name-Nomen | nɔŋ-- | n-euh-nya |
| Tongue | 'leng-ε | l-eh-n-j-eh |

Romanian

| Ancestral Class | IPA | Sounds |
|-----------------|----------|--|
| I | je-w | jg-ay-w |
| YouSingular | tu | t-u |
| We | noj- | n-oj_diphthong |
| YouPlural | voj- | v-oj_diphthong |
| There | --la- | l-ah |
| Who-Quem | tʃ-ine | VlAlveoloPalatalSibilantAffricate-e-n-ay |
| What | tʃ-e- | ts-ay |
| When-Quando | k-ɪnd | k-eee-n-d |
| How-Quomodo | kum--- | k-u-m |
| Not | nu- | n-u |
| All-Totus | to-t-- | t-oh-t |
| Many | mult-- | m-u-l-t |
| Other | alt--- | ah-l-t |
| One | unu- | u-n-u |
| Two-Duos | d-oj- | d-oj_diphthong |
| Two-Duae | dowə | d-oh-w-aah |
| Three | tr-ej- | t-r-ej_diphthong |
| Five | tʃɪntʃ-- | ts-e-n-ts |
| Big-Majjorem | ma---re- | m-ah-er-ay |
| Long-Longum | lung-- | l-u-n-j |
| Long-Largum | larg-- | l-ah-r-j |
| Wide | lat-- | l-ah-t |

Appendix 4 - Word Lists by Language

| | | |
|-----------------------------|--------------|---|
| Small-Pittinus | pu-tsin-- | p-u-VlAlveolarSibilantAffricate-e-n |
| Narrow | ɪngust-- | eee-nya-j-u-s-t |
| Narrow-Strictus | -str-im-t-- | s-t-r-eee-m-t |
| Fish-Piskem | pefte- | p-ay-shh-t-ay |
| Bird-Passerem | pa-sære- | p-ah-s-aah-er-ay |
| Flower | floare- | f-l-midback_diphthong_romanian-er-ay |
| Nose | nas-- | n-ah-s |
| ToDrink | b---ɛa-- | b-midfront_diphthong_romanian |
| ToEat-Manducare | min--ka-- | m-eee-n-k-ah |
| ToBite-Morsicare | murseka-- | m-u-r-s-ay-k-ah |
| ToSuck | sudȝe-- | s-u-VdPalatoAlveolarSibilant-ay |
| ToSpit-Exconspuere | -skujpa | s-k-u-jg-p-ah |
| ToKnow | fti-- | shh-t-e |
| ToKnow-Cognoscere | ku-noȝafte-- | k-u-n-midback_diphthong_romanian-shh-t-ay |
| ToThink | k-udȝeta-- | k-u-VdPalatoAlveolarSibilant-ay-t-ah |
| ToThink-Pensare | pə-sa-- | p-aah-s-ah |
| ToFear | teme-- | t-ay-m-ay |
| ToSleep | d-ormi-- | d-oh-r-m-e |
| ToLive | vi-a-- | v-e-ah |
| ToDie | muri-- | m-u-r-e |
| ToSwim-Navigare | naviga-- | n-ah-v-e-g-ah |
| ToFly-Exvolare | zbura-- | zz-b-u-er-ah |
| ToWalk-Mergere | merdȝe-- | m-ay-r-VdPalatoAlveolarSibilant-ay |
| ToCome | veni-- | v-ay-n-e |
| ToLieAsInABed | ekstinde-- | ay-k-s-t-e-n-d-ay |
| ToLieAsInABed-lacere | zə-tȝea-- | zz-aah-ts-midfront_diphthong_romanian |
| ToSit | ȝ-edea-- | shh-ay-d-midfront_diphthong_romanian |
| ToStand | -sta-- | s-t-ah |
| ToStand-Levare | l-ua-- | l-u-ah |
| ToTurnIntransitive | turna-- | t-u-r-n-ah |
| ToTurnIntransitive-Torquere | tȝartȝe-- | t-midback_diphthong_romanian-r-ts-ay |
| ToFall | kədeȝa-- | k-aah-d-midfront_diphthong_romanian |
| ToFall-Tumbare | tumba- | t-u-m-b-ah |
| ToHold | tsin-e-- | VlAlveolarSibilantAffricate-e-n-ay |
| ToSqueeze | -sk-reme-- | s-k-r-ay-m-ay |
| ToSqueeze-Stringere | strindȝe-- | s-t-r-eee-n-VdPalatoAlveolarSibilant-ay |
| ToRub | freka-- | f-r-ay-k-ah |
| ToWash | la---- | l-ah |
| ToWipe-Extergere | --fterdȝe-- | shh-t-ay-r-VdPalatoAlveolarSibilant-ay |
| ToWipe-Exsucare | u-s--k-a-- | u-s-k-ah |

Appendix 4 - Word Lists by Language

| | | |
|------------------------|-------------|---|
| ToPull-Pulsare | pulsa-- | p-u-l-s-ah |
| ToPull-Trahere | tra-dʒe-- | t-r-ah-VdPalatoAlveolarSibilant-ay |
| ToPush | impindʒe-- | eee-m-p-e-n-VdPalatoAlveolarSibilant-ay |
| ToThrow-Eruncare | a-runʒka-- | ah-er-u-nya-k-ah |
| ToTie | lega-- | l-ay-j-ah |
| ToSew | coa--s-e-- | tya-midback_diphthong_romanian-s-ay |
| ToCount-Enumerare | -numara-- | n-u-m-ah-r-ah |
| ToSay | zitʃe-- | zz-e-ts-ay |
| ToSay-Exponere | --spune-- | s-p-u-n-ay |
| ToSing-AncestralClass | kinta-- | k-eee-n-t-ah |
| ToPlay-Jiocare | ʒu-ka-- | gzah-u-k-ah |
| ToFloat | fluctua-- | f-l-u-tya-t-u-ah |
| ToFlow-Excurrere | --skurdʒe-- | s-k-u-er-VdPalatoAlveolarSibilant-ay |
| ToFlow-Currere | kurdʒe-- | k-u-er-VdPalatoAlveolarSibilant-ay |
| ToFreeze-Inglaciare | ing-ets-a-- | eee-n-j-ay-VlAlveolarSibilantAffricate-ah |
| Sun | soare- | s-midback_diphthong_romanian-er-ay |
| Moon | lună | l-u-n-aah |
| Star | -st-ea--- | s-t-midfront_diphthong_romanian |
| Water | a-p-ə | ah-p-aah |
| Rain | ploa--je | p-l-midback_diphthong_romanian-jg-ay |
| Lake | lak-- | l-ah-k |
| Sea | mare | m-ah-r-ay |
| Salt | sare- | s-ah-r-ay |
| Earth | ts-a-rə | VlAlveolarSibilantAffricate-ah-r-aah |
| Fog-Nebula | negură | n-ay-g-u-r-aah |
| Fog-Caecia | tʃeatʃ-ə | ts-midfront_diphthong_romanian-ts-aah |
| Sky | tʃ-er-- | ts-ay-er |
| Wind | v-int-- | v-eee-n-t |
| Fire-Focus | f-ok-- | f-oh-k |
| ToBurn-Ardere | arde-- | ah-er-d-ay |
| ToBurn-Incendere | intʃindʒe-- | eee-n-ts-e-n-d-gzah-ay |
| ToBurn-AncestralClass8 | ustura-- | u-s-t-u-r-ah |
| Green | ver-de- | v-ay-er-d-ay |
| Year | an--- | ah-n |
| And-Et | e- | ay |
| And-Si | ʃi- | shh-e |
| Name-Nomen | nume- | n-u-m-ay |
| Tongue | 'limb-ə | l-e-m-b-aah |

Appendix 5 - Segment Groups

Pulmonic Consonants

| Manner | Bilabial | Labial-Velar | Labio-Dental | Linguo-Labial | Dental | Alveolar | Post-Alveolar | Palatal | Velar | Uvular | Pharyngeal-E | Glottal |
|---------------------|----------|-------------------------------|--------------|---------------|--------|----------|---------------|---------|-------|--------|--------------|---------|
| Nasal | m | | | | | n | | ɲ | ŋ | | | |
| Stop | p b | k ^w g ^w | | | | t d | | c ɟ | k g | | | |
| Sibilant, Fricative | | | | | | s z | ʃ ʒ | | | | | |
| Fricative | β | | f v | | θ ð | | | j | x ɣ | ʁ | | h |
| Approximant | | | | | | | | j | | | | |
| Tap/Flap | | | | | | r | | | | | | |
| Trill | | | | | | r | | | | R | | |
| Lateral, Fricative | | | | | | | | | | | | |
| Lateral, Ap | | | | | | l | | ʎ | | | | |
| Lateral, Tap/Flap | | | | | | | | | | | | |

Shaded areas denote articulations judged to be impossible. Where symbols appear in pairs, the one to the right represents a modally voiced consonant.

Non-Pulmonic Consonants

| Manner | Bilabial | Labio-Dental | Velar | Uvular | Pharyngeal-Epiglottal |
|------------------------------|----------|--------------|-------|--------|-----------------------|
| Ejective, Stop | | | | | |
| Ejective, Fricative | | | | | |
| Ejective, Lateral, Fricative | | | | | |
| Tenuis, Click | | | | | |
| Nasal, Click | | | | | |
| Tenuis, Lateral, Click | | | | | |
| Implosive | | | | | |

Shaded areas denote articulations judged to be impossible. Where symbols appear in pairs, the one to the right represents a modally voiced consonant.

Appendix 5 - Segment Groups

Vowels

| | Front | Near-Front | Central | Near-Back | Back |
|------------|-------|------------|---------|-----------|------|
| Close | ɪ • y | | ɨ | | ʊ |
| Near-close | | ɪ | | | |
| Close-mid | e • ø | | ə | | o |
| Mid | | | | | |
| Open-mid | | ɛ • œ | | | ɔ |
| Near-open | | | ɐ | | |
| Open | | a | | | ɑ |

Where symbols appear in pairs, the one to the right represents a rounded vowel.

Long Vowels

| | Front | Near-Front | Central | Near-Back | Back |
|----------|-------|------------|---------|-----------|------|
| Close | ɪː | | | | ʊː |
| Mid | eː | | | | oː |
| Open-mid | | ɛː | | | ɔː |
| Open | øː | | aː | | |

Pulmonic Affricates

| Manner | Bilabial | Labio-Dental | Alveolar | Alveolo-Palat | Palato-Alveol | Velar | Uvular | Pharyngeal-E | Glottal |
|--------------|----------|--------------|----------|---------------|---------------|-------|--------|--------------|---------|
| Sibilant | | | ts | tʃ | tʃ | | | | |
| Non-Sibilant | | | | | | | | | |
| Lateral | | | | | | | | | |

Shaded areas denote articulations judged to be impossible.

Ejective Affricates

| Manner | Bilabial | Labio-Dental | Pharyngeal-E | Glottal |
|---------|----------|--------------|--------------|---------|
| Central | | | | |
| Lateral | | | | |

Appendix 5 - Segment Groups

Shaded areas denote articulations judged to be impossible.

Other Segments

| | |
|--|---|
| e Close-mid Front Vocoid Vowel Continuant | g Velar Voiced Pulmonic Stop Occlusive |
| oː Mid Back Rounded Vocoid Long Vowel Continuant | ʒ Post-Alveolar Voiced Pulmonic Sibilant Fricative Strident Obstruent Continuant |
| ə Close-mid Central Vowel | j Palatal Voiced Pulmonic Fricative Obstruent Continuant |
| o Close-mid Back Rounded Vocoid Vowel Continuant | i Close Front Vocoid Vowel Continuant |
| w Labial-Velar Vocoid Semivowel Voiced Approximant Continuant | ɔ Open-mid Back Rounded Vocoid Vowel Continuant |
| dʒ Palato-Alveolar Voiced Sibilant Affricate | ɪ Near-close Near-Front Vowel |
| j Palatal Vocoid Semivowel Voiced Pulmonic Approximant Continuant | t Alveolar Pulmonic Stop Occlusive |
| uː Close Back Rounded Long Vowel | y Close Front Rounded Vocoid Vowel Continuant |
| u Close Back Rounded Vocoid Vowel Continuant | s Alveolar Pulmonic Sibilant Fricative Strident Obstruent Continuant |
| d Alveolar Voiced Pulmonic Stop Occlusive | v Labio-Dental Voiced Pulmonic Fricative Strident Obstruent Continuant |
| n Alveolar Voiced Pulmonic Nasal Occlusive | ʃ Post-Alveolar Pulmonic Sibilant Fricative Strident Obstruent Continuant |
| oj Mid Front Vowel Diphthong | b Bilabial Voiced Pulmonic Stop Occlusive |
| k Velar Pulmonic Stop Occlusive | m Bilabial Voiced Pulmonic Nasal Occlusive |
| h Glottal Pulmonic Fricative | iː Close Front Vocoid Long Vowel Continuant |
| a Open Near-Front Vocoid Vowel Continuant | ɐ Near-open Central Rounded Vowel |
| l Alveolar Vocoid Voiced Pulmonic Lateral Approximant Rhotic Liquid | aː Open Central Vocoid Long Vowel Continuant |
| ʎ Palatal Vocoid Voiced Pulmonic Lateral Approximant Rhotic Liquid | k Labial-Velar Pulmonic Stop Occlusive |
| ẽj Mid Front Nasal Vowel Diphthong | ẽj Mid Front Nasal Vowel Diphthong |
| ʈʂ Alveolo-Palatal Pulmonic Sibilant Affricate | ɪ Close Central Vowel |

Appendix 5 - Segment Groups

| | | | |
|----|---|----|--|
| ɛ | Open-mid Near-Front Vocoid Vowel Continuant | ɛː | Open-mid Near-Front Vocoid Long Vowel Continuant |
| ɸ | Palato-Alveolar Pulmonic Sibilant Affricate | ã | Near-open Central Nasal Vowel |
| ẽ | Near-open Central Rounded Nasal Vowel | ẽ | Open-mid Near-Front Nasal Vowel |
| õ | Open-mid Back Rounded Nasal Vowel | Ẃ | Labial-Velar Voiced Nasal Approximant |
| ẽ | Close Back Nasal Vowel | eː | Mid Front Vocoid Long Vowel Continuant |
| ɲ | Palatal Voiced Pulmonic Nasal Occlusive | ð | Dental Voiced Pulmonic Fricative Obstruent Continuant |
| ũ | Open Back Nasal Vowel | ĩ | Palatal Nasal Approximant |
| c | Palatal Pulmonic Stop Occlusive | œ̃ | Open-mid Near-Front Rounded Nasal Vowel Diphthong |
| g | Velar Voiced Pulmonic Stop Occlusive | ɭ | Alveolar Voiced Velarized Pulmonic Lateral Approximant |
| p | Bilabial Pulmonic Stop Occlusive | a | Mid Front Vowel Diphthong |
| ø | Close-mid Front Rounded Vocoid Vowel Continuant | õ | Close-mid Back Rounded Nasal Vowel |
| r | Alveolar Voiced Pulmonic Trill Rhotic Vibrant Liquid | ʁ | Uvular Voiced Pulmonic Fricative Rhotic Strident Obstruent Continuant Liquid |
| ɾ | Alveolar Voiced Pulmonic Tap/Flap Rhotic Vibrant Liquid | ŋ | Velar Voiced Pulmonic Nasal Occlusive |
| øː | Open Front Rounded Vocoid Long Vowel | aj | Mid Front Vowel Diphthong |
| ɑ | Open Back Vocoid Vowel Continuant | ej | Mid Front Vowel Diphthong |
| θ | Dental Pulmonic Fricative Obstruent Continuant | ĩ | Close Front Nasal Vowel |
| ɣ | Velar Voiced Pulmonic Fricative Obstruent Continuant | ã | Near-close Back Nasal Vowel |
| ts | Alveolar Pulmonic Sibilant Affricate Occlusive Strident | ɐj | Mid Front Vowel Diphthong |
| z | Alveolar Voiced Pulmonic Sibilant Fricative Strident Obstruent Continuant | x | Velar Pulmonic Fricative Obstruent Continuant |
| f | Labio-Dental Pulmonic Fricative Strident Obstruent Continuant | œ | Open-mid Near-Front Rounded Vocoid Vowel Continuant |

Appendix 5 - Segment Groups

| | |
|--|--|
| <p>o^h Mid Front Vowel Diphthong</p> | <p>β Bilabial Voiced Pulmonic Fricative Obstruent Continuant</p> |
| <p>e^h Mid Front Vowel Diphthong</p> | <p>ɟ Palatal Voiced Pulmonic Stop Occlusive</p> |
| <p>ʀ Uvular Pulmonic Trill Rhotic Vibrant Liquid</p> | <p>ɥ Labial-Palatal Vocoid Semivowel Voiced Approximant Continuant</p> |
| <p>ɔː Open-mid Back Rounded Vocoid Long Vowel Continuant</p> | <p>ɛɟ Mid Front Vowel Diphthong</p> |
| <p>ɡ Labial-Velar Voiced Pulmonic Stop Occlusive</p> | <p>ẽ Mid Front Vowel Diphthong</p> |

Appendix 6 - International Phonetic Alphabet

IPA Segments

| | | | |
|---|--|---|---|
| ẽ | θ | β | ʈʂ |
| 1EBD Close Back Nasal Vowel | 03B8 Dental Pulmonic Fricative Obstruent Continuant | 03B2 Bilabial Voiced Pulmonic Fricative Obstruent Continuant | 02A7 Palato-Alveolar Pulmonic Sibilant Affricate |
| ts | ɖʒ | j | ʒ |
| 02A6 Alveolar Pulmonic Sibilant Affricate Occlusive Strident | 02A4 Palato-Alveolar Voiced Sibilant Affricate | 029D Palatal Voiced Pulmonic Fricative Obstruent Continuant | 0292 Post-Alveolar Voiced Pulmonic Sibilant Fricative Strident Obstruent Continuant |
| ʎ | ʃ | ʁ | ʀ |
| 028E Palatal Vocoid Voiced Pulmonic Lateral Approximant Rhotic Liquid | 0283 Post-Alveolar Pulmonic Sibilant Fricative Strident Obstruent Continuant | 0281 Uvular Voiced Pulmonic Fricative Rhotic Strident Obstruent Continuant Liquid | 0280 Uvular Pulmonic Trill Rhotic Vibrant Liquid |
| ɾ | ɳ | ɭ | ɪ |
| 027E Alveolar Voiced Pulmonic Tap/Flap Rhotic Vibrant Liquid | 0272 Palatal Voiced Pulmonic Nasal Occlusive | 026B Alveolar Voiced Velarized Pulmonic Lateral Approximant | 026A Near-close Near-Front Vowel |

Appendix 6 - International Phonetic Alphabet

| | | | |
|--|---|--|---|
| <p style="text-align: center; font-size: 2em;">ɪ</p> <p style="text-align: center;">0268</p> <p style="text-align: center;">Close Central Vowel</p> | <p style="text-align: center; font-size: 2em;">ɥ</p> <p style="text-align: center;">0265</p> <p style="text-align: center;">Labial-Palatal Vocoid Semivowel Voiced Approximant Continuant</p> | <p style="text-align: center; font-size: 2em;">ʏ</p> <p style="text-align: center;">0263</p> <p style="text-align: center;">Velar Voiced Pulmonic Fricative Obstruent Continuant</p> | <p style="text-align: center; font-size: 2em;">ɟ</p> <p style="text-align: center;">0261</p> <p style="text-align: center;">Velar Voiced Pulmonic Stop Occlusive</p> |
| <p style="text-align: center; font-size: 2em;">ʃ</p> <p style="text-align: center;">025F</p> <p style="text-align: center;">Palatal Voiced Pulmonic Stop Occlusive</p> | <p style="text-align: center; font-size: 2em;">ɛ</p> <p style="text-align: center;">025B</p> <p style="text-align: center;">Open-mid Near-Front Vocoid Vowel Continuant</p> | <p style="text-align: center; font-size: 2em;">ə</p> <p style="text-align: center;">0259</p> <p style="text-align: center;">Close-mid Central Vowel</p> | <p style="text-align: center; font-size: 2em;">ɔ</p> <p style="text-align: center;">0254</p> <p style="text-align: center;">Open-mid Back Rounded Vocoid Vowel Continuant</p> |
| <p style="text-align: center; font-size: 2em;">ɑ</p> <p style="text-align: center;">0251</p> <p style="text-align: center;">Open Back Vocoid Vowel Continuant</p> | <p style="text-align: center; font-size: 2em;">ɐ</p> <p style="text-align: center;">0250</p> <p style="text-align: center;">Near-open Central Rounded Vowel</p> | <p style="text-align: center; font-size: 2em;">ũ</p> <p style="text-align: center;">0169</p> <p style="text-align: center;">Open Back Nasal Vowel</p> | <p style="text-align: center; font-size: 2em;">œ</p> <p style="text-align: center;">0153</p> <p style="text-align: center;">Open-mid Near-Front Rounded Vocoid Vowel Continuant</p> |
| <p style="text-align: center; font-size: 2em;">ŋ</p> <p style="text-align: center;">014B</p> <p style="text-align: center;">Velar Voiced Pulmonic Nasal Occlusive</p> | <p style="text-align: center; font-size: 2em;">ĩ</p> <p style="text-align: center;">0129</p> <p style="text-align: center;">Close Front Nasal Vowel</p> | <p style="text-align: center; font-size: 2em;">ø</p> <p style="text-align: center;">00F8</p> <p style="text-align: center;">Close-mid Front Rounded Vocoid Vowel Continuant</p> | <p style="text-align: center; font-size: 2em;">õ</p> <p style="text-align: center;">00F5</p> <p style="text-align: center;">Close-mid Back Rounded Nasal Vowel</p> |

Appendix 6 - International Phonetic Alphabet

| | | | |
|---|---|--|--|
| ð | ã | z | y |
| 00F0 Dental Voiced Pulmonic Fricative Obstruent Continuant | 00E3 Near-open Central Nasal Vowel | 007A Alveolar Voiced Pulmonic Sibilant Fricative Strident Obstruent Continuant | 0079 Close Front Rounded Vocoid Vowel Continuant |
| x | w | v | u |
| 0078 Velar Pulmonic Fricative Obstruent Continuant | 0077 Labial-Velar Vocoid Semivowel Voiced Approximant Continuant | 0076 Labio-Dental Voiced Pulmonic Fricative Strident Obstruent Continuant | 0075 Close Back Rounded Vocoid Vowel Continuant |
| t | s | r | p |
| 0074 Alveolar Pulmonic Stop Occlusive | 0073 Alveolar Pulmonic Sibilant Fricative Strident Obstruent Continuant | 0072 Alveolar Voiced Pulmonic Trill Rhotic Vibrant Liquid | 0070 Bilabial Pulmonic Stop Occlusive |
| o | n | m | l |
| 006F Close-mid Back Rounded Vocoid Vowel Continuant | 006E Alveolar Voiced Pulmonic Nasal Occlusive | 006D Bilabial Voiced Pulmonic Nasal Occlusive | 006C Alveolar Vocoid Voiced Pulmonic Lateral Approximant Rhotic Liquid |

Appendix 6 - International Phonetic Alphabet

| | | | |
|--|--|--|--|
| k | j | i | h |
| 006B Velar Pulmonic Stop Occlusive | 006A Palatal Vocoid Semivowel Voiced Pulmonic Approximant Continuant | 0069 Close Front Vocoid Vowel Continuant | 0068 Glottal Pulmonic Fricative |
| g | f | e | d |
| 0067 Velar Voiced Pulmonic Stop Occlusive | 0066 Labio-Dental Pulmonic Fricative Strident Obstruent Continuant | 0065 Close-mid Front Vocoid Vowel Continuant | 0064 Alveolar Voiced Pulmonic Stop Occlusive |
| c | b | a | g ^w |
| 0063 Palatal Pulmonic Stop Occlusive | 0062 Bilabial Voiced Pulmonic Stop Occlusive | 0061 Open Near-Front Vocoid Vowel Continuant | 0261, 02B7 Labial-Velar Voiced Pulmonic Stop Occlusive |
| ẽ | ɛː | ej | õ |
| 025B, 0303 Open-mid Near-Front Nasal Vowel | 025B, 02D0 Open-mid Near-Front Vocoid Long Vowel Continuant | 025B, 006A Mid Front Vowel Diphthong | 0254, 0303 Open-mid Back Rounded Nasal Vowel |
| ɔː | ã | ẽ | aj |
| 0254, 02D0 Open-mid Back Rounded Vocoid Long Vowel Continuant | 0251, 0303 Near-close Back Nasal Vowel | 0250, 0303 Near-open Central Rounded Nasal Vowel | 0250, 006A Mid Front Vowel Diphthong |

Appendix 6 - International Phonetic Alphabet

| | | | |
|---|---|--|---|
| œ̃ | øː | Ẃ | uː |
| 0153, 0303 Open-mid Near-Front Rounded Nasal Vowel Diphthong | 00F8, 02D0 Open Front Rounded Vocoid Long Vowel | 0077, 0303 Labial-Velar Voiced Nasal Approximant | 0075, 02D0 Close Back Rounded Long Vowel |
| oː | oj | k ^w | ɟ̃ |
| 006F, 02D0 Mid Back Rounded Vocoid Long Vowel Continuant | 006F, 006A Mid Front Vowel Diphthong | 006B, 02B7 Labial-Velar Pulmonic Stop Occlusive | 006A, 0303 Palatal Nasal Approximant |
| iː | eː | ej | aː |
| 0069, 02D0 Close Front Vocoid Long Vowel Continuant | 0065, 02D0 Mid Front Vocoid Long Vowel Continuant | 0065, 006A Mid Front Vowel Diphthong | 0061, 02D0 Open Central Vocoid Long Vowel Continuant |
| aj | ẽụ | ẽj̃ | ɬʃ |
| 0061, 006A Mid Front Vowel Diphthong | 1EBD, 0075, 032F Mid Front Vowel Diphthong | 1EBD, 006A, 0303 Mid Front Nasal Vowel Diphthong | 0074, 0361, 0283 Alveolo-Palatal Pulmonic Sibilant Affricate |
| ọa | ẹa | ạụ | ẽj̃̃ |
| 006F, 032F, 0061 Mid Front Vowel Diphthong | 0065, 032F, 0061 Mid Front Vowel Diphthong | 0061, 0075, 032F Mid Front Vowel Diphthong | 0250, 0303, 006A, 0303 Mid Front Nasal Vowel Diphthong |

Appendix 7 - Languages

LATIN

A classical language belonging to the Italic branch of the Indo-European languages. Latin was originally spoken in the area around Rome, known as Latium. Through the power of the Roman Republic, it became the dominant language in Italy, and subsequently throughout the western Roman Empire, before eventually becoming a dead language. Latin has contributed many words to the English language. In particular, Latin (and Ancient Greek) roots are used in English descriptions of theology, the sciences, medicine, and law.

By the late Roman Republic (75 BC), Old Latin had been standardised into Classical Latin. Vulgar Latin was the colloquial form spoken at that time and attested in inscriptions and the works of comic playwrights like Plautus and Terence[3] and author Petronius. Late Latin is the written language from the 3rd century; its colloquial form Vulgar Latin developed in the 6th to 9th centuries into the Romance languages, such as Italian, Sardinian, Venetian, Neapolitan, Sicilian, Piedmontese, Lombard, French, Franco-Provençal, Occitan, Corsican, Ladin, Friulan, Romansh, Catalan/Valencian, Aragonese, Spanish, Asturian, Galician, and Portuguese. Medieval Latin was used as a literary language from the 9th century to the Renaissance which used Renaissance Latin. Later, Early Modern Latin and New Latin evolved. Latin was the language of international communication, scholarship and science until well into the 18th century, when vernaculars (including the Romance languages) supplanted it. Ecclesiastical Latin remains the official language of the Holy See and the Roman Rite of the Catholic Church. Latin is a highly inflected language, with three distinct genders, six or seven noun cases, five declensions, four verb conjugations, six tenses, three persons, three moods, two voices, two or three aspects, and two numbers. The Latin alphabet is derived from the Etruscan and Greek alphabets and ultimately from the Phoenician alphabet.



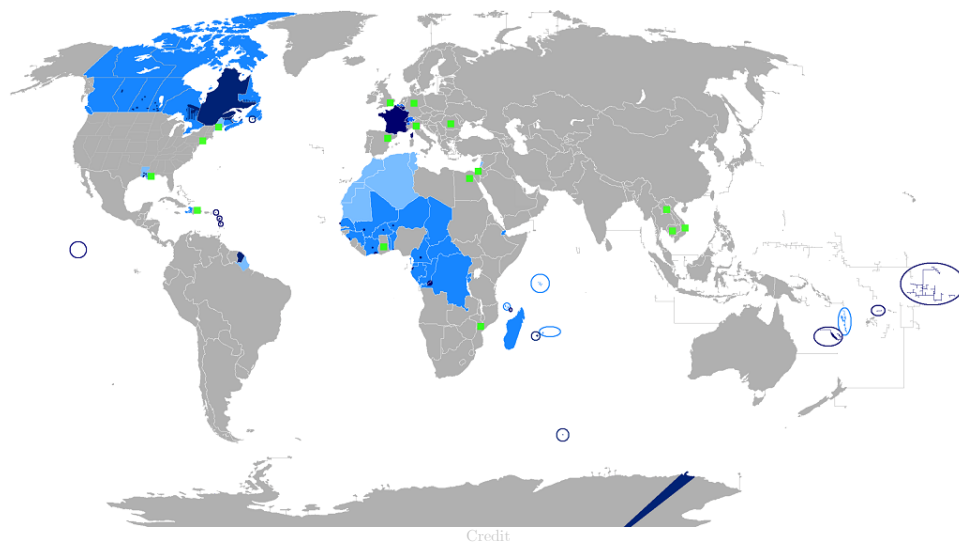
Appendix 7 - Languages

FRENCH

A Romance language of the Indo-European family. It descended from the Vulgar Latin of the Roman Empire, as did all Romance languages. French evolved from Gallo-Romance, the Latin spoken in Gaul, and more specifically in Northern Gaul. Its closest relatives are the other langues d'oïl—languages historically spoken in northern France and in southern Belgium, which French (Francien) largely supplanted.

French was also influenced by native Celtic languages of Northern Roman Gaul like Gallia Belgica and by the (Germanic) Frankish language of the post-Roman Frankish invaders. Today, owing to France's past overseas expansion, there are numerous French-based creole languages, most notably Haitian Creole. A French-speaking person or nation may be referred to as Francophone in both English and French.

French is an official language in 29 countries across multiple continents, most of which are members of the Organisation internationale de la Francophonie (OIF), the community of 84 countries which share the official use or teaching of French. French is also one of six official languages used in the United Nations. It is spoken as a first language (in descending order of the number of speakers) in France; the Democratic Republic of Congo; Algeria; Morocco; Canada (provinces of Quebec, Ontario and New Brunswick as well as other Francophone regions); Cameroon; Belgium (Wallonia and the Brussels-Capital Region); Ivory Coast; Tunisia; western Switzerland (Romandy—all or part of the cantons of Bern, Fribourg, Geneva, Jura, Neuchâtel, Vaud, Valais); Monaco; parts of Luxembourg; parts of the United States (the states of Louisiana, Maine, New Hampshire and Vermont); northwestern Italy (autonomous region of Aosta Valley); and various communities elsewhere.

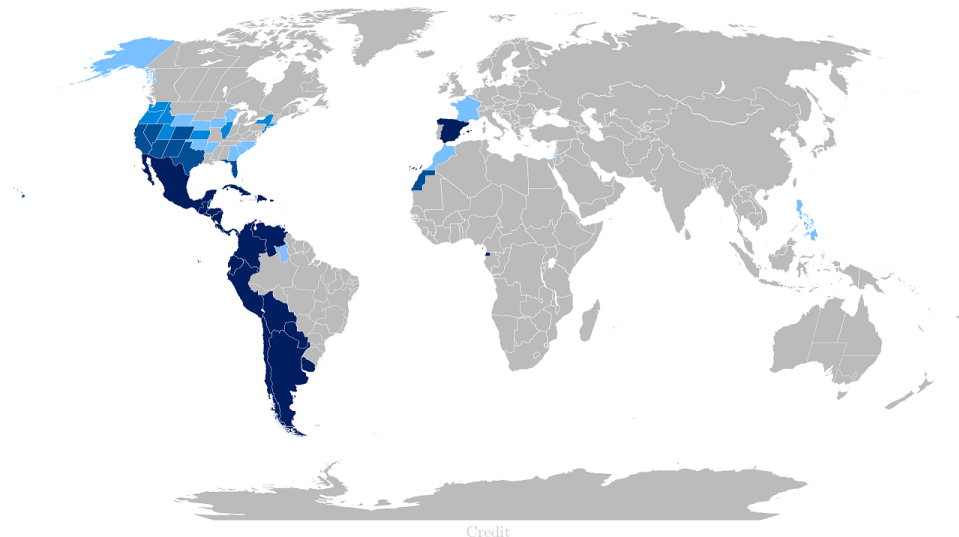


SPANISH

A Romance language that originated in the Iberian Peninsula of Europe. Today, it is a global

Appendix 7 - Languages

language with nearly 500 million native speakers, mainly in Spain and the Americas. It is the world's second-most spoken native language after Mandarin Chinese, and the world's fourth-most spoken language overall after English, Mandarin Chinese, and Hindi.



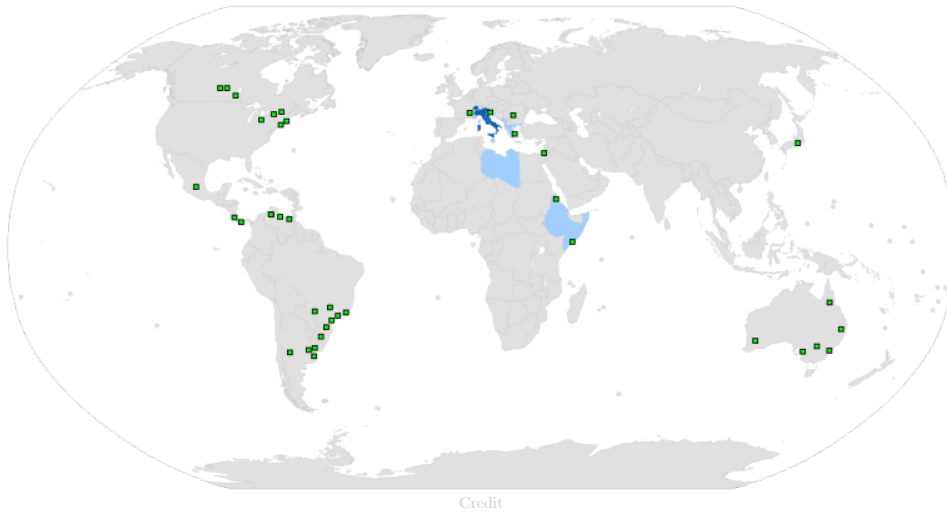
ITALIAN

A Romance language of the Indo-European language family. Italian is the closest national language to Latin, from which it descends via vulgar Latin of the Roman Empire. Taking into account both national and regional languages, it is seen that Italian and Sardinian are together the least differentiated from Latin. Italian is an official language in Italy, Switzerland (Ticino and the Grisons), San Marino, and Vatican City. It has an official minority status in western Istria (Croatia and Slovenia).

It formerly had official status in Albania, Malta, Monaco, Montenegro (Kotor), Greece (Ionian Islands and Dodecanese), and is generally understood in Corsica by Corsican speakers (many linguists classify Corsican as an Italian dialect). It used to be an official language in the former colonial areas of Italian East Africa and Italian North Africa, where it still has a significant role in various sectors.

Italian is also spoken by large immigrant and expatriate communities in the Americas and Australia. Italian is included under the languages covered by the European Charter for Regional or Minority languages in Bosnia and Herzegovina and in Romania, although Italian is neither a co-official nor a protected language in these countries. Many speakers of Italian are native bilinguals of both Italian (either in its standard form or regional varieties) and another regional language of Italy.

Appendix 7 - Languages



BRAZILIAN PORTUGUESE

The set of dialects of the Portuguese language native to Brazil and the most influential form of Portuguese worldwide. It is spoken by almost all of the 200 million inhabitants of Brazil and spoken widely across the Brazilian diaspora, today consisting of about two million Brazilians who have emigrated to other countries. With a population of over 205 million, Brazil is by far the world's largest Portuguese-speaking nation and the only one in the Americas.

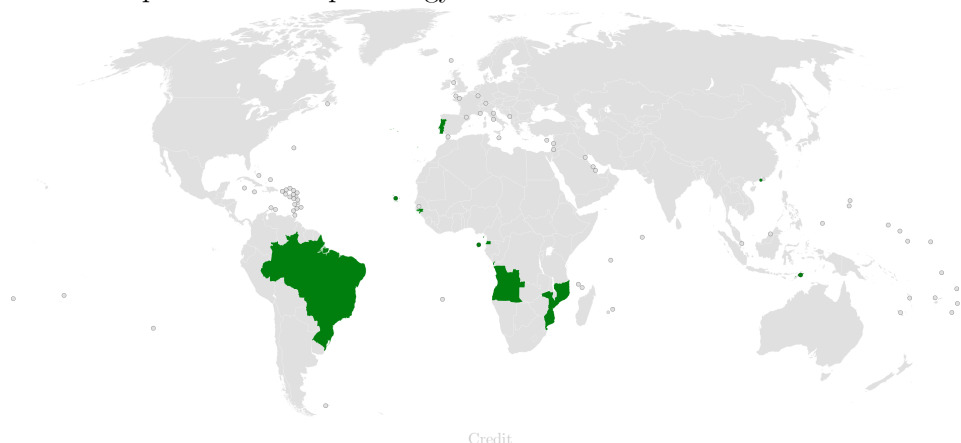


PORTUGUESE

A Romance language originating in the Iberian Peninsula of Europe. It is the sole official language of Portugal, Angola, Moçambique, Guiné-Bissau, Cabo Verde, São Tomé and Príncipe, and Brazil,

Appendix 7 - Languages

while having co-official language status in East Timor, Equatorial Guinea, and Macau. A Portuguese-speaking person or nation is referred to as "Lusophone" (lusófono). As the result of expansion during colonial times, a cultural presence of Portuguese and Portuguese creole speakers are also found around the world. Portuguese is part of the Ibero-Romance group that evolved from several dialects of Vulgar Latin in the medieval Kingdom of Galicia and the County of Portugal, and has kept some Celtic phonology and its lexicon.



CATALAN

Catalan (/ˈkætələn, -æn, ˌkætəˈlæn/; autonym: català or llengua catalana; Eastern Catalan: [kətəˈla]), known in the Valencian Community and Carche as Valencian, is a Western Romance language derived from Vulgar Latin. It is the official language of Andorra, and a co-official language of three autonomous communities in eastern Spain: Catalonia, the Valencian Community and the Balearic Islands. It also has semi-official status in the Italian comune of Alghero. It is also spoken in the Pyrénées-Orientales department of France and in two further areas in eastern Spain: the eastern strip of Aragon and the Carche area in the Region of Murcia. The Catalan-speaking territories are often called the Països Catalans or "Catalan Countries".

The language evolved from Vulgar Latin in the Middle Ages around the eastern Pyrenees. Nineteenth-century Spain saw a Catalan literary revival, culminating in the early 1900s.

Appendix 7 - Languages



WALLOON

A Romance language that is spoken in much of Wallonia and (to small extent) in Brussels, Belgium; some villages near Givet, northern France; a clutch of communities in northeastern Wisconsin, U.S.; and in some parts of Canada. It belongs to the langue d'oïl language family, the most prominent member of which is the French language. The historical background of its formation was the territorial extension since 980 of the Principality of Liège to the south and west.

Despite its rich literature, beginning anonymously in the 16th century and with well-known authors since 1756, the use of Walloon has decreased markedly since France's annexation of Wallonia in 1795. This period definitively established French as the language of social promotion, far more than it was before. After World War I, public schools provided French-speaking education to all children, inducing a denigration of Walloon, especially when accompanied by official orders in 1952 to punish its use in schools. Subsequently, since the middle of the 20th century, generational transmission of the language has decreased, resulting in Walloon almost becoming a dead language. Today it is scarcely spoken among younger people, with vast majority of its native speakers being the elderly (aged 65 and over). In 2007, the number of people with knowledge of the language was estimated at 600,000.

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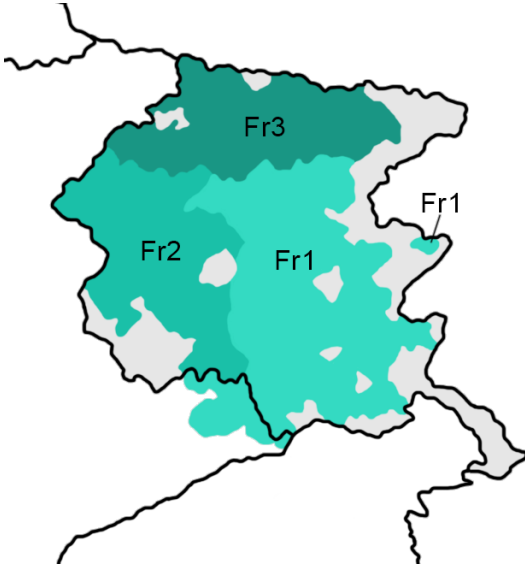


Credit

FRIULIAN

Friulian (/friˈuːliən/ free-OO-lee-ən) or Friulan (natively About this soundfurlan or marilenghe; Italian: friulano; German: Furlanisch; Slovene: furlanščina) is a Romance language belonging to the Rhaeto-Romance family, spoken in the Friuli region of northeastern Italy. Friulian has around 600,000 speakers, the vast majority of whom also speak Italian.

It is sometimes called Eastern Ladin since it shares the same roots as Ladin, but over the centuries, it has diverged under the influence of surrounding languages, including German, Italian, Venetian, and Slovene. Documents in Friulian are attested from the 11th century and poetry and literature date as far back as 1300. By the 20th century, there was a revival of interest in the language.



Credit

Appendix 7 - Languages

ROMANIAN

Romanian (obsolete spellings: Rumanian or Roumanian; autonym: limba română ['limba ro'mɨnə] (About this soundlisten), or românește, lit. 'in Romanian') is a Balkan Romance language spoken by approximately 24–26 million people as a native language, primarily in Romania and Moldova, and by another 4 million people as a second language. According to another estimate, there are about 34 million people worldwide who can speak Romanian, of whom 30 million speak it as a native language. It is an official and national language of both Romania and Moldova and is one of the official languages of the European Union.

Romanian is a part of the Eastern Romance sub-branch of Romance languages, a linguistic group that evolved from several dialects of Vulgar Latin which separated from the Western Romance languages in the course of the period from the 5th to the 8th centuries. To distinguish it within the Eastern Romance languages, in comparative linguistics it is called Daco-Romanian as opposed to its closest relatives, Aromanian, Megleno-Romanian and Istro-Romanian. Romanian is also known as Moldovan in Moldova, although the Constitutional Court of Moldova ruled in 2013 that "the official language of the republic is Romanian".



Credit

Appendix 8 - Symbols

| | |
|---------|--|
| Ψ | Phylogeny The (possibly unknown) relationship between entities resulting from an evolutionary tree |
| τ | Tree topology Information on the relationships of the languages |
| μ | Substitution rate the rate at which the language changes |
| N | Sampled languages The number of languages in a sample |
| ν | Expected events The expected number of evolutionary events that occurred between two languages |
| t | Past times Times of branch events |
| B | Possible rooted trees |
| A | Segmental alignment Constructed by combining the word segment information for the languages of interest with information on the homology of the segments |
| S | Segmental information Information on the homology of the segments |
| s | Segment Linguistic segment |
| s_i | ith segment |
| H | Homology map The map describing the alignment of the segments |
| Q | Rate Matrix |
| β | Rate matrix scaling factor Scales the rate matrix such that the average rate of segmental substitution is one |

Appendix 8 - Symbols

| | |
|--------------|---|
| P | Probability The probability the process ends in certain state |
| P | Marginal Likelihood |
| π | Equilibrium distribution |
| λ | Rate of segment insertion |
| μ | Rate of segment deletion |
| n | Word length Number of segments in a word |
| r | Rate parameter |
| ϑ | Rate parameters Parameters associated with the rate matrix |
| ϑ' | Proposal New value proposal |
| q | Proposal probability Probability of new proposal |
| u | Random number |
| R | Acceptance probability Probability of accepting a proposed value |
| M | Model Mathematical model for linguistic parameters |
| BF | Bayes Factor A numerical factor related to the quality of the model fit |
| X | Unknown |