

Pensieve header: Tabulating classical braids.

```
(Alt) In[ ]:= SetDirectory["C:\\drorbn\\AcademicPensieve\\Projects\\OU";
<< "OU-Programs.m"
```

Loading KnotTheory` version of February 2, 2020, 10:53:45.2097.  
Read more at <http://katlas.org/wiki/KnotTheory>.

```
(Alt) In[ ]:= CVD[vd_VD] := ((CVD@@vd) /. {_EOS -> Sequence[], Xs_[i_, j_] -> Sequence[s i, j]});
AllBs[n_, m_] :=
DeleteDuplicatesBy[CVD@*Γ]@Flatten@Table[b, {k, 0, m}, {b, ProudBs[n, k]}]
```

```
(Alt) In[ ]:= BR[3, {2, -1, -1, -1, -1}] // (CVD@*Γ)
```

```
(Alt) Out[ ]:= CVD[-1, 31, -2, 7, -3, 27, -12, 32, -13, 8, -14, 28, -15, 4,
-22, 33, -23, 9, -24, 29, -25, 5, 16, 26, 17, 6, 18, 30, 19, 10, 20, 34]
```

```
(Alt) In[ ]:= SaveList[n_, m_] := Module[{fname, Bs, t, c},
fname = "Data/B_" <> Tostring[n] <> "_" <> Tostring[m] <> ".m";
If[FileType[fname] === File, Bs = Get[fname]; t = "Cached",
t = First@Timing[Bs = Select[AllBs[n, m], (Length[#][2] == m) &]];
Echo@"Saving...";
Put[Bs, fname]
];
c = Length[Bs];
Echo[{n, m} -> {t, c}];
c
];
```

```
(Alt) In[ ]:= SaveList[4, 3]
```

```
» {4, 3} -> {Cached, 98}
```

```
(Alt) Out[ ]:= 98
```

```
(Alt) In[ ]:= (tab = Table[SaveList[n, m], {m, 0, 9}, {n, 2, 6}]) // MatrixForm
```

```
» {2, 0} -> {Cached, 1}
```

```
» {3, 0} -> {Cached, 1}
```

```
» {4, 0} -> {Cached, 1}
```

```
» {5, 0} -> {Cached, 1}
```

```
» {6, 0} -> {Cached, 1}
```

```
» {2, 1} -> {Cached, 2}
```

```
» {3, 1} -> {Cached, 4}
```

```
» {4, 1} -> {Cached, 6}
```

```
» {5, 1} -> {Cached, 8}
```

```
» {6, 1} -> {Cached, 10}
```

```
» {2, 2} -> {Cached, 2}
```

- » {3, 2} → {Cached, 12}
- » {4, 2} → {Cached, 26}
- » {5, 2} → {Cached, 44}
- » {6, 2} → {Cached, 66}
- » {2, 3} → {Cached, 2}
- » {3, 3} → {Cached, 30}
- » {4, 3} → {Cached, 98}
- » {5, 3} → {Cached, 206}
- » {6, 3} → {Cached, 362}
- » {2, 4} → {Cached, 2}
- » {3, 4} → {Cached, 68}
- » {4, 4} → {Cached, 338}
- » {5, 4} → {Cached, 884}
- » {6, 4} → {Cached, 1794}
- » {2, 5} → {Cached, 2}
- » {3, 5} → {Cached, 148}
- » {4, 5} → {Cached, 1110}
- » {5, 5} → {Cached, 3600}
- » {6, 5} → {Cached, 8370}
- » {2, 6} → {Cached, 2}
- » {3, 6} → {Cached, 314}
- » {4, 6} → {Cached, 3542}
- » {5, 6} → {Cached, 14198}
- » {6, 6} → {Cached, 37606}
- » {2, 7} → {Cached, 2}
- » {3, 7} → {Cached, 656}
- » {4, 7} → {Cached, 11098}
- » {5, 7} → {Cached, 54876}
- » {6, 7} → {Cached, 164910}
- » {2, 8} → {Cached, 2}
- » {3, 8} → {Cached, 1356}
- » {4, 8} → {Cached, 34362}
- » {5, 8} → {Cached, 209348}
- » {6, 8} → {Cached, 711746}
- » {2, 9} → {Cached, 2}
- » {3, 9} → {Cached, 2782}

- » {4, 9} → {Cached, 105 546}
- » {5, 9} → {Cached, 791 798}
- » Saving...
- » {6, 9} → {308 430., 3 039 546}

(Alt) Out[\*]=MatrixForm=

$$\begin{pmatrix} 1 & 1 & 1 & 1 & 1 \\ 2 & 4 & 6 & 8 & 10 \\ 2 & 12 & 26 & 44 & 66 \\ 2 & 30 & 98 & 206 & 362 \\ 2 & 68 & 338 & 884 & 1794 \\ 2 & 148 & 1110 & 3600 & 8370 \\ 2 & 314 & 3542 & 14 198 & 37 606 \\ 2 & 656 & 11 098 & 54 876 & 164 910 \\ 2 & 1356 & 34 362 & 209 348 & 711 746 \\ 2 & 2782 & 105 546 & 791 798 & 3 039 546 \end{pmatrix}$$

(Alt) In[\*]:= **Table**[ $6 \times 2^m - 2$  **Fibonacci**[ $m + 3$ ] - 2, {**m**, 12}]

(Alt) Out[\*]= {4, 12, 30, 68, 148, 314, 656, 1356, 2782, 5676, 11 532, 23 354}

(Alt) In[\*]:= **SaveList**[3, 10]

- » Saving...
- » {3, 10} → {9252.38, 5676}

(Alt) Out[\*]= 5676

(Alt) In[\*]:= **SaveList**[3, 11]

- » Saving...
- » {3, 11} → {58 004.5, 11 532}

(Alt) Out[\*]= 11 532

(Alt) In[\*]:= **SaveList**[3, 12]

- » Saving...
- » {3, 12} → {361 635., 23 354}

(Alt) Out[\*]= 23 354