

```
In[ ] := << KnotTheory`
```

```
Loading KnotTheory` version of September 6, 2014, 13:37:37.2841 .
```

```
Read more at http://katlas.org/wiki/KnotTheory .
```

```
In[ ] := K = GaussCode[58, 32, 53, 54, -4, -3, 14, 15, 16, -13, 17, 18, -11, -53, -12, 21, -35, 9,  
-44, 10, 40, 31, -25, -16, 13, 19, 5, 2, -7, -55, -8, -33, -9, -46, 50, 29, 38, -26,  
-47, 1, -15, 4, -52, 35, 33, -6, 36, 34, 37, -5, -24, -17, -54, 12, 20, 8, 39, -45, 30,  
-48, -34, -49, -10, -50, 51, 52, -21, -20, -22, -56, 23, 24, -19, 25, 26, 27, -29,  
-28, -31, -37, 48, -30, -42, 7, 41, 22, -57, -58, -32, 11, -18, -23, -2, 42, 45, 43,  
6, 44, 46, -51, 3, -14, -1, 47, -27, -38, 28, -40, 49, -36, -43, -39, 55, -41, 56, 57]
```

```
Out[ ] := GaussCode[58, 32, 53, 54, -4, -3, 14, 15, 16, -13, 17, 18, -11, -53, -12, 21, -35, 9, -44,  
10, 40, 31, -25, -16, 13, 19, 5, 2, -7, -55, -8, -33, -9, -46, 50, 29, 38, -26, -47,  
1, -15, 4, -52, 35, 33, -6, 36, 34, 37, -5, -24, -17, -54, 12, 20, 8, 39, -45, 30,  
-48, -34, -49, -10, -50, 51, 52, -21, -20, -22, -56, 23, 24, -19, 25, 26, 27, -29,  
-28, -31, -37, 48, -30, -42, 7, 41, 22, -57, -58, -32, 11, -18, -23, -2, 42, 45, 43,  
6, 44, 46, -51, 3, -14, -1, 47, -27, -38, 28, -40, 49, -36, -43, -39, 55, -41, 56, 57]
```

In[ \* ]:= **khovanov** = Kh[K][q, t]

**KnotTheory** : The Khovanov homology program JavaKh-v2 is an update of Jeremy Green's program JavaKh-v1, written by Scott Morrison in 2008 at Microsoft Station Q.

$$\begin{aligned}
 \text{Out[ * ]} = & \frac{1}{q^3} + \frac{2}{q} + q + \frac{1}{q^{49} t^{32}} + \frac{1}{q^{45} t^{31}} + \frac{1}{q^{45} t^{30}} + \frac{1}{q^{45} t^{29}} + \frac{1}{q^{43} t^{29}} + \frac{1}{q^{41} t^{29}} + \frac{1}{q^{43} t^{28}} + \frac{1}{q^{41} t^{28}} + \frac{1}{q^{39} t^{28}} + \\
 & \frac{1}{q^{41} t^{27}} + \frac{2}{q^{39} t^{27}} + \frac{1}{q^{41} t^{26}} + \frac{1}{q^{39} t^{26}} + \frac{1}{q^{37} t^{26}} + \frac{1}{q^{35} t^{26}} + \frac{1}{q^{39} t^{25}} + \frac{2}{q^{37} t^{25}} + \frac{1}{q^{35} t^{25}} + \frac{1}{q^{39} t^{24}} + \\
 & \frac{1}{q^{37} t^{24}} + \frac{2}{q^{35} t^{24}} + \frac{1}{q^{33} t^{24}} + \frac{1}{q^{37} t^{23}} + \frac{3}{q^{35} t^{23}} + \frac{1}{q^{33} t^{23}} + \frac{1}{q^{31} t^{23}} + \frac{1}{q^{35} t^{22}} + \frac{2}{q^{33} t^{22}} + \frac{2}{q^{31} t^{22}} + \\
 & \frac{1}{q^{35} t^{21}} + \frac{3}{q^{33} t^{21}} + \frac{2}{q^{31} t^{21}} + \frac{1}{q^{29} t^{21}} + \frac{2}{q^{33} t^{20}} + \frac{3}{q^{31} t^{20}} + \frac{4}{q^{29} t^{20}} + \frac{1}{q^{27} t^{20}} + \frac{2}{q^{31} t^{19}} + \frac{4}{q^{29} t^{19}} + \\
 & \frac{2}{q^{27} t^{19}} + \frac{1}{q^{25} t^{19}} + \frac{1}{q^{31} t^{18}} + \frac{2}{q^{29} t^{18}} + \frac{4}{q^{27} t^{18}} + \frac{2}{q^{25} t^{18}} + \frac{2}{q^{29} t^{17}} + \frac{4}{q^{27} t^{17}} + \frac{3}{q^{25} t^{17}} + \frac{2}{q^{23} t^{17}} + \\
 & \frac{2}{q^{27} t^{16}} + \frac{5}{q^{25} t^{16}} + \frac{4}{q^{23} t^{16}} + \frac{1}{q^{21} t^{16}} + \frac{1}{q^{27} t^{15}} + \frac{3}{q^{25} t^{15}} + \frac{3}{q^{23} t^{15}} + \frac{3}{q^{21} t^{15}} + \frac{1}{q^{19} t^{15}} + \frac{2}{q^{25} t^{14}} + \\
 & \frac{4}{q^{23} t^{14}} + \frac{4}{q^{21} t^{14}} + \frac{1}{q^{19} t^{14}} + \frac{4}{q^{23} t^{13}} + \frac{4}{q^{21} t^{13}} + \frac{4}{q^{19} t^{13}} + \frac{1}{q^{17} t^{13}} + \frac{1}{q^{23} t^{12}} + \frac{3}{q^{21} t^{12}} + \frac{6}{q^{19} t^{12}} + \\
 & \frac{2}{q^{17} t^{12}} + \frac{1}{q^{15} t^{12}} + \frac{2}{q^{21} t^{11}} + \frac{4}{q^{19} t^{11}} + \frac{4}{q^{17} t^{11}} + \frac{2}{q^{15} t^{11}} + \frac{3}{q^{19} t^{10}} + \frac{6}{q^{17} t^{10}} + \frac{3}{q^{15} t^{10}} + \\
 & \frac{1}{q^{13} t^{10}} + \frac{4}{q^{17} t^9} + \frac{5}{q^{15} t^9} + \frac{4}{q^{13} t^9} + \frac{1}{q^{17} t^8} + \frac{4}{q^{15} t^8} + \frac{5}{q^{13} t^8} + \frac{2}{q^{11} t^8} + \frac{2}{q^{15} t^7} + \frac{4}{q^{13} t^7} + \\
 & \frac{4}{q^{11} t^7} + \frac{1}{q^9 t^7} + \frac{3}{q^{13} t^6} + \frac{5}{q^{11} t^6} + \frac{3}{q^9 t^6} + \frac{3}{q^{11} t^5} + \frac{5}{q^9 t^5} + \frac{3}{q^7 t^5} + \frac{3}{q^9 t^4} + \frac{3}{q^7 t^4} + \frac{2}{q^5 t^4} + \\
 & \frac{1}{q^9 t^3} + \frac{3}{q^7 t^3} + \frac{3}{q^5 t^3} + \frac{2}{q^7 t^2} + \frac{3}{q^5 t^2} + \frac{3}{q^3 t^2} + \frac{1}{q^5 t} + \frac{3}{q^3 t} + \frac{2}{q t} + \frac{2 t}{q} + q t^2 + 2 q^3 t^2 + q^5 t^3
 \end{aligned}$$