List of degree 2 tableaux which cannot be splitted directly is

$$t_0 = \begin{array}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}\hline 1&1&1&1&1&1&2&2&2&3&3&3&3&3\\\hline 2&2&2&4&4&4&4&4&4&5&5&5&5&6\\\hline 3&5&5&6&6&6&6&6&7&7&7&7&7&7\\\hline\end{array}, \quad t_1 = \begin{array}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}\hline 1&1&1&1&1&1&2&2&2&3&3&3&3&3\\\hline 2&2&2&4&4&4&4&4&4&5&5&5&5&5\\\hline 3&5&6&6&6&6&6&6&7&7&7&7&7&7\\\hline\end{array},$$

$$t_2 = \begin{array}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}\hline 1&1&1&1&1&1&2&2&2&3&3&3&3&3\\\hline 2&2&2&4&4&4&4&4&4&5&6&6&6&6\\\hline 3&5&5&5&5&5&6&6&7&7&7&7&7&7\\\hline\end{array}, \quad t_3 = \begin{array}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}\hline 1&1&1&1&1&1&2&2&2&3&3&3&3&3\\\hline 2&2&2&4&4&4&4&4&4&5&5&6&6&6\\\hline 3&5&5&5&5&6&6&6&7&7&7&7&7&7\\\hline\end{array},$$

$$t_4 = \begin{array}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}\hline 1&1&1&1&1&1&2&2&2&3&3&3&3&3\\\hline 2&2&2&4&4&4&4&4&4&5&5&5&6&6\\\hline 3&5&5&5&6&6&6&6&7&7&7&7&7&7\\\hline\end{array}, \quad t_5 = \begin{array}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}\hline 1&1&1&1&1&1&2&2&2&3&3&3&3&3\\\hline 2&2&2&4&4&4&4&4&4&6&6&6&6&6\\\hline 3&5&5&5&5&5&5&6&7&7&7&7&7&7\\\hline\end{array},$$

$$t_6 = \begin{array}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}\hline 1&1&1&1&1&1&2&2&2&3&3&3&3&3\\\hline 2&2&2&4&4&4&4&5&5&6&6&6&6&6\\\hline 3&4&4&5&5&5&5&6&7&7&7&7&7&7\\\hline\end{array}, \quad t_7 = \begin{array}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}\hline 1&1&1&1&1&1&2&2&2&3&3&3&3&3\\\hline 2&2&2&3&4&4&4&5&5&6&6&6&6&6\\\hline 4&4&4&5&5&5&5&6&7&7&7&7&7&7\\\hline\end{array}.$$

0.1 Factoring t_0, t_3, t_4

We will use following plucker relations:

$$R_1: \quad 0 = \begin{array}{|c|c|}\hline 2&3\\\hline 5&4\\\hline 7&7\\\hline\end{array} - \begin{array}{|c|c|}\hline 2&3\\\hline 4&5\\\hline 7&7\\\hline\end{array} + \begin{array}{|c|c|}\hline 2&4\\\hline 3&5\\\hline 7&7\\\hline\end{array}$$

On $[3, 6, 7]$, last monomial in R_1 is 0.

Applying R_1 on t_0, t_3, t_4 we get

$$t_0 = \begin{array}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}\hline 1&1&1&1&1&1&2&2&2&3&3&3&3&3\\\hline 2&2&2&4&4&4&4&4&5&4&5&5&5&6\\\hline 3&5&5&6&6&6&6&6&7&7&7&7&7&7\\\hline\end{array}$$

$$t_3 = \begin{array}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}\hline 1&1&1&1&1&1&2&2&2&3&3&3&3&3\\\hline 2&2&2&4&4&4&4&4&5&4&5&6&6&6\\\hline 3&5&5&5&5&6&6&6&7&7&7&7&7&7\\\hline\end{array}$$

$$t_4 = \begin{array}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}\hline 1&1&1&1&1&1&2&2&2&3&3&3&3&3\\\hline 2&2&2&4&4&4&4&4&5&4&5&5&6&6\\\hline 3&5&5&5&6&6&6&6&7&7&7&7&7&7\\\hline\end{array}$$

Note following tableau is factor of all of above tableaux

$$f_{034} = \begin{array}{|c|c|c|c|c|c|c|}\hline 1&1&1&2&3&3&3\\\hline 2&2&4&4&4&5&6\\\hline 5&5&6&6&7&7&7\\\hline\end{array}$$

0.2 Factoring t_2

We will use following plucker relations:

$$R_2: \quad 0 = \begin{array}{|c|c|}\hline 2&3\\\hline 6&4\\\hline 7&7\\\hline\end{array} - \begin{array}{|c|c|}\hline 2&3\\\hline 4&6\\\hline 7&7\\\hline\end{array} + \begin{array}{|c|c|}\hline 2&4\\\hline 3&6\\\hline 7&7\\\hline\end{array}$$

On $[3, 6, 7]$, last monomial in R_2 is 0.

Applying R_2 on t_2 we get

$$t_2 = \begin{array}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}\hline 1&1&1&1&1&1&2&2&2&3&3&3&3&3\\\hline 2&2&2&4&4&4&4&4&6&5&4&6&6&6\\\hline 3&5&5&5&5&5&6&6&7&7&7&7&7&7\\\hline\end{array}$$

Note following tableau is factor of above tableau

$$f_{034} = \begin{array}{|c|c|c|c|c|c|c|}\hline 1&1&1&2&3&3&3\\\hline 2&2&4&4&4&6&6\\\hline 5&5&5&6&7&7&7\\\hline\end{array}$$

0.3 Factoring t_5

We define one more pluckre relation

$$R_3: \quad 0 = \begin{array}{|c|c|}\hline 2&3\\\hline 5&4\\\hline 6&7\\\hline\end{array} - \begin{array}{|c|c|}\hline 2&3\\\hline 4&5\\\hline 6&7\\\hline\end{array} + \begin{array}{|c|c|}\hline 2&4\\\hline 3&5\\\hline 6&7\\\hline\end{array} - \begin{array}{|c|c|}\hline 2&4\\\hline 3&6\\\hline 5&7\\\hline\end{array} + \begin{array}{|c|c|}\hline 2&3\\\hline 4&6\\\hline 5&7\\\hline\end{array} + \begin{array}{|c|c|}\hline 2&5\\\hline 3&6\\\hline 4&7\\\hline\end{array}$$

Observe that $3^{rd}, 4^{th}$ and 6^{th} monomials are 0 on [3,6,7] Hence after multiplying following tableau

$$\begin{array}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}\hline 1&1&1&1&1&1&&2&2&&3&3&3&3\\\hline 2&2&2&4&4&4&&4&4&&6&6&6&6\\\hline 3&5&5&5&5&5&&6&7&&7&7&7&7\\\hline\end{array}$$

to above relation in empty columns, we get

$$\begin{array}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}\hline 1&1&1&1&1&1&2&2&2&3&3&3&3&3\\\hline 2&2&2&4&4&4&5&4&4&4&6&6&6&6\\\hline 3&5&5&5&5&5&6&6&7&7&7&7&7&7\\\hline\end{array}$$

$$= \begin{array}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}\hline 1&1&1&1&1&1&2&2&2&3&3&3&3&3\\\hline 2&2&2&4&4&4&4&4&5&6&6&6&6&\\\hline 3&5&5&5&5&5&6&6&7&7&7&7&7&7\\\hline\end{array} - \begin{array}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}\hline 1&1&1&1&1&1&2&2&2&3&3&3&3&3\\\hline 2&2&2&4&4&4&4&4&4&6&6&6&6&6\\\hline 3&5&5&5&5&5&5&6&7&7&7&7&7&7\\\hline\end{array}$$

$$= t_2 - t_5$$

Observe that following is factor of left hand side tableau

$$f_5 = \begin{array}{|c|c|c|c|c|c|c|}\hline 1&1&1&2&3&3&3\\\hline 2&2&4&4&4&6&6\\\hline 5&5&5&6&7&7&7\\\hline\end{array}$$

Hence t_5 factored.

0.4 Factoring t_7

Next we factor t_7, we will use following plucker relation:

$$R_4: \quad 0 = \begin{array}{|c|c|}\hline 1&3\\\hline 3&5\\\hline 7&6\\\hline\end{array} - \begin{array}{|c|c|}\hline 1&3\\\hline 3&5\\\hline 6&7\\\hline\end{array} + \begin{array}{|c|c|}\hline 1&3\\\hline 3&6\\\hline 5&7\\\hline\end{array}$$

We multiply following tableau to above relation (in empty columns)

1	1	1		1	1	2	2	2		3	3	3	3
2	2	2		4	4	4	5	5		6	6	6	6
4	4	4		5	5	5	6	7		7	7	7	7

then we get following

1	1	1	1	1	1	2	2	2	3	3	3	3	3
2	2	2	3	4	4	4	5	5	6	6	6	6	6
4	4	4	5	5	5	5	6	7	7	7	7	7	7

$$= - \begin{array}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}\hline 1&1&1&1&1&1&2&2&2&3&3&3&3&3\\\hline 2&2&2&3&4&4&4&5&5&5&6&6&6&6\\\hline 4&4&4&7&5&5&5&6&7&6&7&7&7&7\\\hline\end{array} + \begin{array}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}\hline 1&1&1&1&1&1&2&2&2&3&3&3&3&3\\\hline 2&2&2&3&4&4&4&5&5&5&6&6&6&6\\\hline 4&4&4&6&5&5&5&6&7&7&7&7&7&7\\\hline\end{array}$$

Observe that tableau on left hand side is t_7, also observe that following two tableaux are factors of two tableaux on right side in above relation

$$f_{71} = \begin{array}{|c|c|c|c|c|c|c|}\hline 1&1&1&2&2&3&3\\\hline 2&3&4&4&5&6&6\\\hline 4&7&5&5&6&7&7\\\hline\end{array} \qquad f_{72} = \begin{array}{|c|c|c|c|c|c|c|}\hline 1&1&1&2&2&3&3\\\hline 2&3&4&4&5&6&6\\\hline 4&6&5&5&7&7&7\\\hline\end{array}$$

0.5 Factoring t_6

Next we will use following plucker relation to factor t_6

$$R_5: \quad 0 = \begin{array}{|c|c|}\hline 1&1\\\hline 2&3\\\hline 5&4\\\hline\end{array} - \begin{array}{|c|c|}\hline 1&1\\\hline 2&3\\\hline 4&5\\\hline\end{array} + \begin{array}{|c|c|}\hline 1&1\\\hline 2&4\\\hline 3&5\\\hline\end{array}$$

We multiply following tableau to above relation (in empty columns)

	1	1		1	1	2	2	2	3	3	3	3	3
	2	2		4	4	4	5	5	6	6	6	6	6
	4	4		5	5	5	6	7	7	7	7	7	7

We get

1	1	1	1	1	1	2	2	2	3	3	3	3	3
2	2	2	3	4	4	4	5	5	6	6	6	6	6
5	4	4	4	5	5	5	6	7	7	7	7	7	7

$$= \begin{array}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}\hline 1&1&1&1&1&1&2&2&2&3&3&3&3&3\\\hline 2&2&2&3&4&4&4&5&5&6&6&6&6&6\\\hline 4&4&4&5&5&5&5&6&7&7&7&7&7&7\\\hline\end{array} - \begin{array}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}\hline 1&1&1&1&1&1&2&2&2&3&3&3&3&3\\\hline 2&2&2&4&4&4&4&5&5&6&6&6&6&6\\\hline 3&4&4&5&5&5&5&6&7&7&7&7&7&7\\\hline\end{array}$$

$$= t_7 - t_6$$

Observe that following tableau ia factor of left hand side tableau in above relation

$$f_6 = \begin{array}{|c|c|c|c|c|c|c|}\hline 1&1&1&2&3&3&3\\\hline 2&2&4&4&6&6&6\\\hline 4&5&5&5&7&7&7\\\hline\end{array}$$