$$\mathbf{r}_1: \underbrace{add(a,id_1) \quad readIds(a) \Rightarrow \{id_1\} \quad remove(a,\{(a,id_1)\})}_{add(a,id_2)} \underbrace{ \begin{array}{c} S = \{(a,id_2)\} \\ \sigma_1 \\ \sigma_2 \end{array} } \underbrace{ \begin{array}{c} S = \{(a,id_2)\} \\ \sigma_3 \\ \sigma_3 \\ \end{array} } \underbrace{ \begin{array}{c} S = \{(a,id_2)\} \\ \sigma_4 \\ \end{array} } \underbrace{ \begin{array}{c} S = \{(a,id_2)\} \\ \sigma_4 \\ \end{array} } \underbrace{ \begin{array}{c} S = \{(a,id_2)\} \\ \sigma_4 \\ \end{array} } \underbrace{ \begin{array}{c} S = \{(a,id_2)\} \\ \sigma_4 \\ \end{array} } \underbrace{ \begin{array}{c} S = \{(a,id_2)\} \\ \sigma_4 \\ \end{array} } \underbrace{ \begin{array}{c} S = \{(a,id_2)\} \\ \sigma_4 \\ \end{array} } \underbrace{ \begin{array}{c} S = \{(a,id_2)\} \\ \sigma_4 \\ \end{array} } \underbrace{ \begin{array}{c} S = \{(a,id_2)\} \\ \sigma_4 \\ \end{array} } \underbrace{ \begin{array}{c} S = \{(a,id_2)\} \\ \sigma_4 \\ \end{array} } \underbrace{ \begin{array}{c} S = \{(a,id_2)\} \\ \end{array} } \underbrace{ \begin{array}{c} S = \{(a,id_2)\} \\ \sigma_4 \\ \end{array} } \underbrace{ \begin{array}{c} S = \{(a,id_2)\} \\ \underbrace{ \begin{array}{c} S = \{(a,id_2)\} \\ \end{array} } \underbrace{ \begin{array}{c} S = \{(a,id_2)\} \\ \underbrace{ \begin{array}{c} S = \{(a,id_2)\} \\ \end{array} } \underbrace{ \begin{array}{c} S = \{(a,id_2)\} \\ \end{array} } \underbrace{ \begin{array}{c} S = \{(a,id_2)\} \\ \underbrace{ \begin{array}{c} S = \{(a,id_2)\} \\ \end{array} } \underbrace{ \begin{array}{c} S = \{(a,id_2)\} \\ \underbrace{ \begin{array}{c} S = \{(a,id_2)\} \\ \end{array} } \underbrace{ \begin{array}{c} S = \{(a,id_2)\} \\ \underbrace{ \begin{array}{c} S = \{(a,id_2)\} \\ \end{array} } \underbrace{ \begin{array}{c} S = \{(a,id_2)\} \\ \underbrace{ \begin{array}{c} S = \{(a,id_2)\} \\ \underbrace{ \begin{array}{c} S = \{(a,id_2)\} \\ \end{array} } \underbrace{ \begin{array}{c} S = \{(a,id_2)\} \\ \underbrace{ \begin{array}{c} S = \{(a,id_2)\} \\ \underbrace{ \begin{array}{c} S = \{(a,id_2)\} \\ \end{array} } \underbrace{ \begin{array}{c} S = \{(a,id_2)\} \\ \underbrace{ \begin{array}{c} S = \{(a,id_2)\} \\ \underbrace{ \begin{array}{c} S = \{(a,id_2)\} \\ \end{array} } \underbrace{ \begin{array}{c} S = \{(a,id_2)\} \\ \underbrace{ \begin{array}{c} S = \{(a,id_2)\} \\ } \underbrace{ \begin{array}{c} S = \{(a,$$