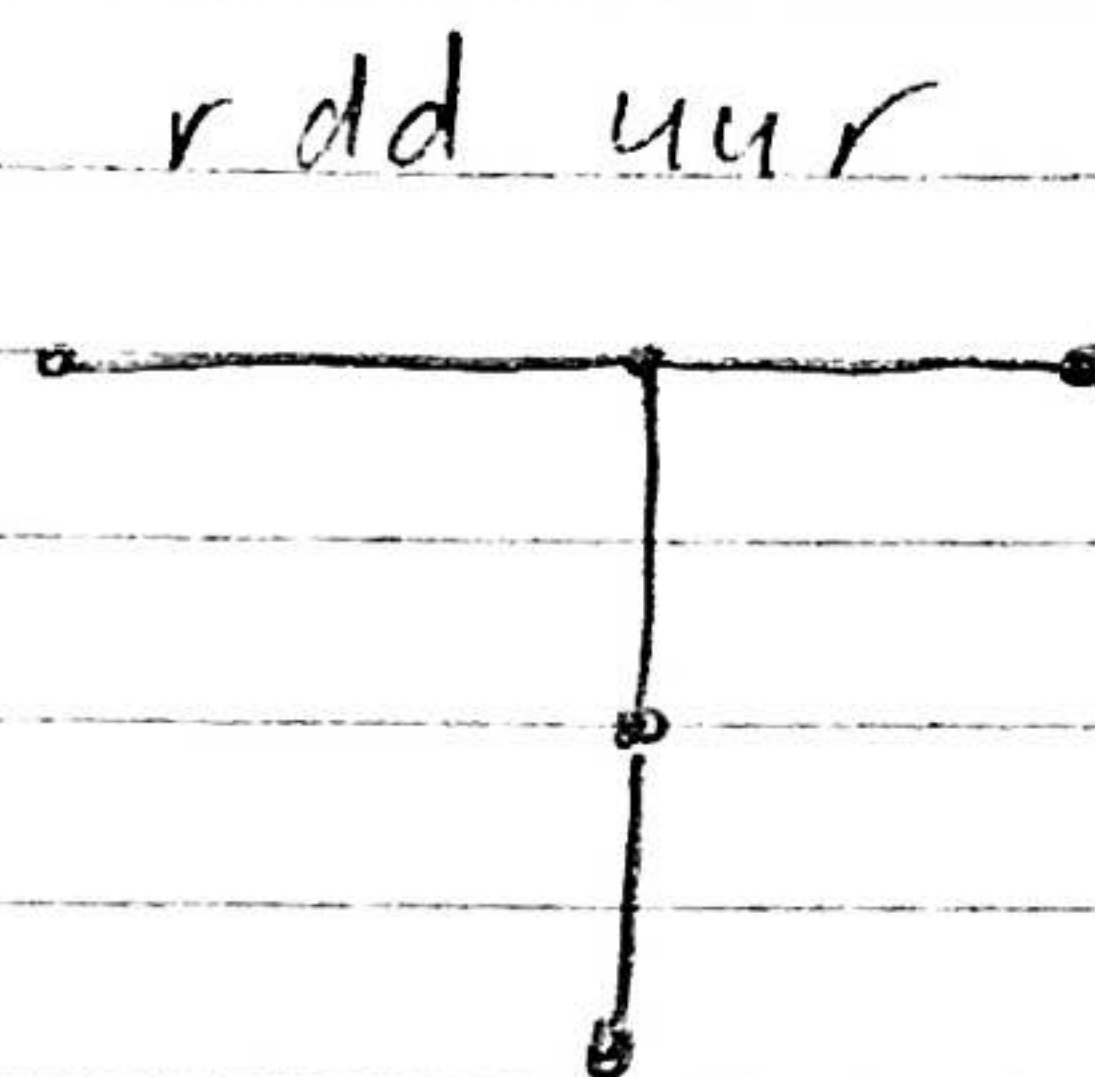
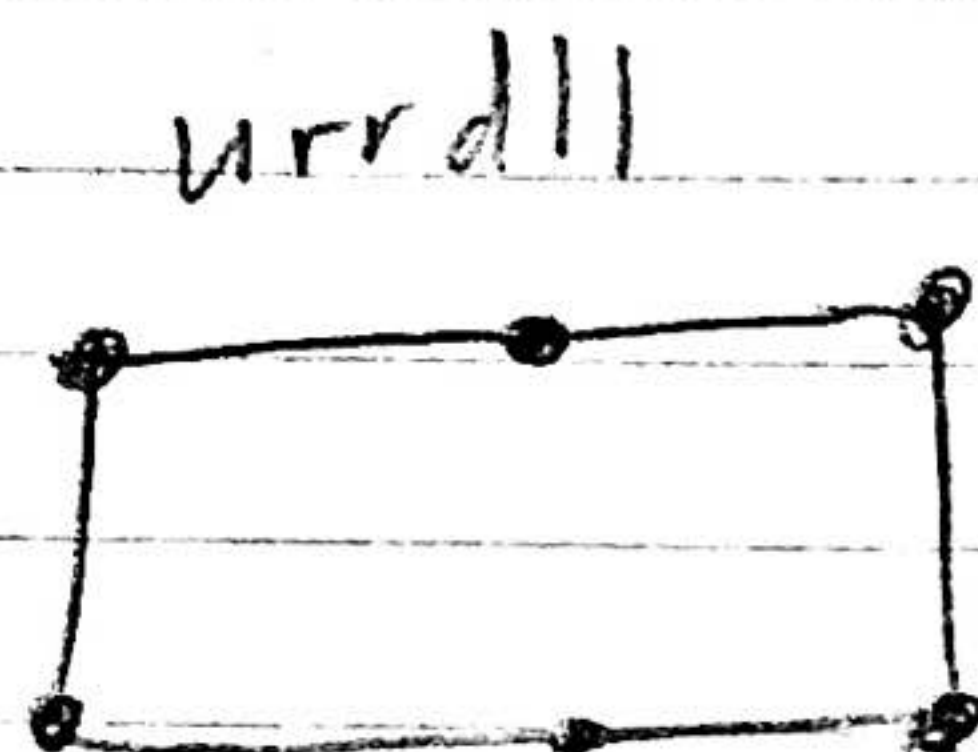


UW2

1. Stanley Yelnats. The name of the main character in the book Holes by Louis Sachar
- 2.



udduruddn



- 3 Images that have the same start and end point must have equal inverse relations either u or d and l or r which should always make a rectangle

4 $T^*H^*I^*N^*K^*S^*$

5 $(T^*H^*I^*N^*K^*S^*) | (T^*H^*I^*N^*K^*S^*) | (T^*H^*I^*N^*K^*S^*)$
 $| (T^*H^*I^*N^*K^*S^*) | (T^*H^*I^*N^*K^*S^*) | (T^*H^*I^*N^*K^*S^*)$

6 RegEx for length 0 = ϵ

$$1 = (T+U+I+N+K+S)$$

$$2 = (T+U+I+N+K+S)^2$$

$$3 = (T+U+I+N+K+S)^3$$

$$4 = (T+U+I+N+K+S)^4$$

$$5 = (T+U+I+N+K+S)^5$$

$$6 = (T+U+I+N+K+S)^6$$

\therefore required regex is:

$$\epsilon + (T+U+I+N+K+S) + (T+U+I+N+K+S)^2 + (T+U+I+N+K+S)^3 + (T+U+I+N+K+S)^4 + (T+U+I+N+K+S)^5 + (T+U+I+N+K+S)^6$$

$$7 (T+U+I+N+K+S)^n \cdot (T+U+I+N+K+S)^*$$

$$8 1, 2, 3, 4, 5, 6, 11, + \quad \epsilon < 7 \cup \epsilon > 10$$

$$\Rightarrow (T+U+I+N+K+S)^7 + (T+U+I+N+K+S)^8 + (T+U+I+N+K+S)^9 + (T+U+I+N+K+S)^{10}$$

$$9 L = \{w \in \Sigma^* \mid w \text{ is even}\}$$

$$(T+U+I+N+S)^*k \cdot (T+U+I+N+S)^*k$$

$$10 ((k T^* U^* I^* N^* S^*) + (T^* U^* I^* N^* S^* (k k)^* T^* U^* I^* N^* S^*))$$

$$\text{or } ((I T^* U^* I^* N^* K^* S^*) + ((I I)^* I T^* U^* I^* N^* K^* S^*))$$

$$\text{or } ((T U^* I^* N^* K^* S^*) + (U^* I^* N^* K^* S^* (T T)^* U^* I^* N^* K^* S^*))$$

$$\begin{aligned}
 11 \quad & (T+H+I+N+S)^* K(T+H+I+N+S)^* K(T+H+I+N+S)^* K \\
 & (T+H+I+N+S)^* K(T+H+I+N+S) \\
 & \text{or } (T+H+I+S)^* N(T+H+I+S)^* N(T+H+I+S)^* N(T+H+I+S)^* \\
 & = (T+H+I+S)^* K(T+H+I+S)^* K(T+H+I+S)^* K(T+H+I+S)^* K(T+H+I+S)^* N(T+H+I+S)^* \\
 & N(T+H+I+S)^* N(T+H+I+S)^*
 \end{aligned}$$

12

$$13 \quad K\{3\} * n\{7\} \\
 \text{RE} \quad [T^* H^* I^* S^* (K^3)^* (N^7)^*]^*$$

$$14 \quad [a-z A-Z \emptyset-9]^* @tntech.edu$$