



$$\begin{array}{cccc} \text{---} & \text{---} & \text{---} & \text{---} \end{array} \left\{ \begin{array}{l} A \\ T \\ C \\ G \end{array} \right.$$

$$\begin{array}{cccc} \text{---} & \text{---} & \text{---} & \text{---} \\ 2^3 & 2^2 & 2^1 & 2^0 \end{array} \left\{ \begin{array}{l} \emptyset \\ 1 \end{array} \right.$$

$$\begin{array}{cccc} \boxed{} & \boxed{} & \boxed{} & \boxed{} \end{array} \left\{ \begin{array}{l} A \\ T \\ C \\ G \end{array} \right.$$

$$\emptyset = \frac{\boxed{\emptyset}}{2^3} \frac{\boxed{\emptyset}}{2^2} \frac{\boxed{\emptyset}}{2^1} \frac{\boxed{\emptyset}}{2^0} \left\{ \begin{array}{l} \emptyset \\ 1 \end{array} \right.$$

$$\begin{array}{cccc} \boxed{} & \boxed{} & \boxed{} & \boxed{} \end{array} \left\{ \begin{array}{l} A \\ T \\ C \\ G \end{array} \right.$$

$$15 = \frac{\boxed{1}}{2^3} \frac{\boxed{1}}{2^2} \frac{\boxed{1}}{2^1} \frac{\boxed{1}}{2^0} \left\{ \begin{array}{l} \emptyset \\ 1 \end{array} \right.$$

$$\emptyset = \underbrace{A}_{4^3} \underbrace{A}_{4^2} \underbrace{A}_{4^1} \underbrace{A}_{4^0} \left\{ \begin{array}{l} A = \emptyset \\ T = 1 \\ C = 2 \\ G = 3 \end{array} \right.$$

$$15 = \underbrace{1}_{2^3} \underbrace{1}_{2^2} \underbrace{1}_{2^1} \underbrace{1}_{2^0} \left\{ \begin{array}{l} \emptyset \\ 1 \end{array} \right.$$

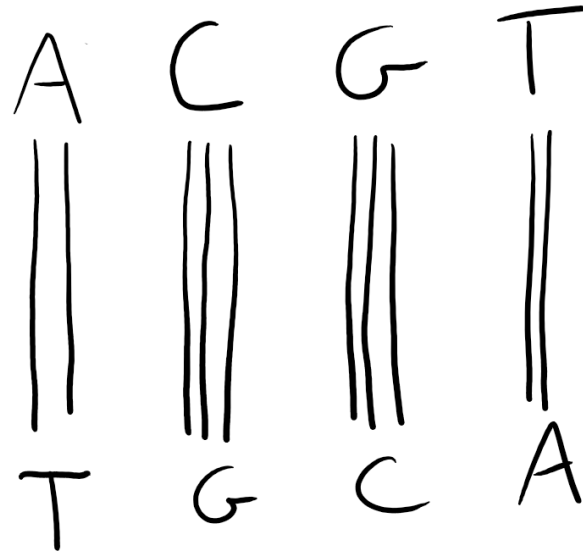
$$85 = \underbrace{T}_{4^3} \underbrace{T}_{4^2} \underbrace{T}_{4^1} \underbrace{T}_{4^0} \left\{ \begin{array}{l} A = \emptyset \\ T = 1 \\ C = 2 \\ G = 3 \end{array} \right.$$

$$15 = \underbrace{1}_{2^3} \underbrace{1}_{2^2} \underbrace{1}_{2^1} \underbrace{1}_{2^0} \left\{ \begin{array}{l} \emptyset \\ 1 \end{array} \right.$$

$$255 = \underbrace{6}_{4^3} \underbrace{6}_{4^2} \underbrace{6}_{4^1} \underbrace{6}_{4^0} \left\{ \begin{array}{l} A = \emptyset \\ T = 1 \\ C = 2 \\ G = 3 \end{array} \right.$$

$$15 = \underbrace{1}_{2^3} \underbrace{1}_{2^2} \underbrace{1}_{2^1} \underbrace{1}_{2^0} \left\{ \begin{array}{l} \emptyset \\ 1 \end{array} \right.$$

KOPIOWANIE DNA



KOPIOWANIE DNA

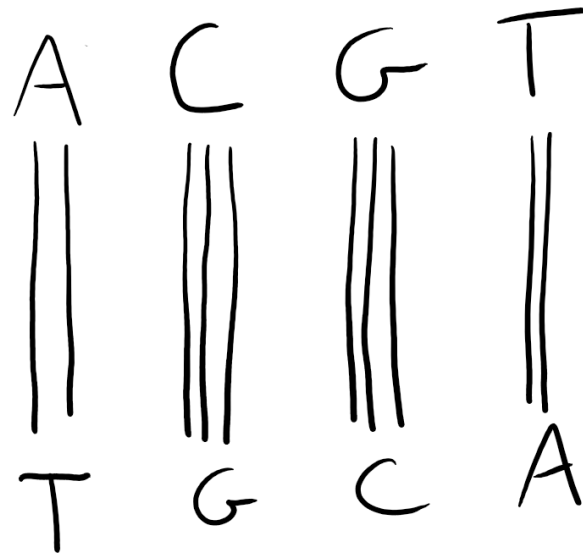
A C G T
|| ||| ||| ||

|| ||| ||| ||
T G C A

KOPIOWANIE DNA

A	C	G	T
T	G	C	A
A	C	G	T
T	G	C	A

ODCZYT DNA



ODCZYT DNA

A C G T
|| ||| ||| ||

|| ||| ||| ||
T G C A

ODCZYT DNA

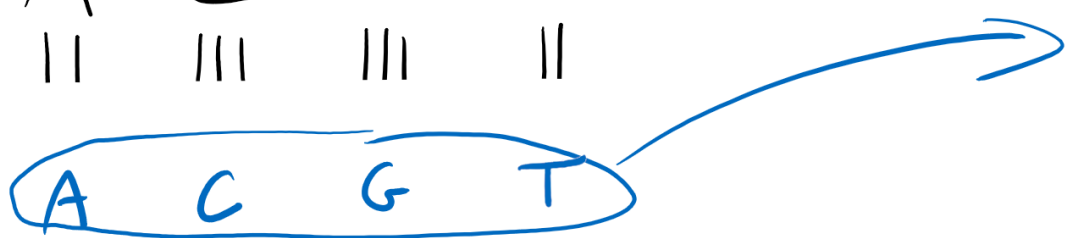
A	C	G	T

A	C	G	T
T	G	C	A

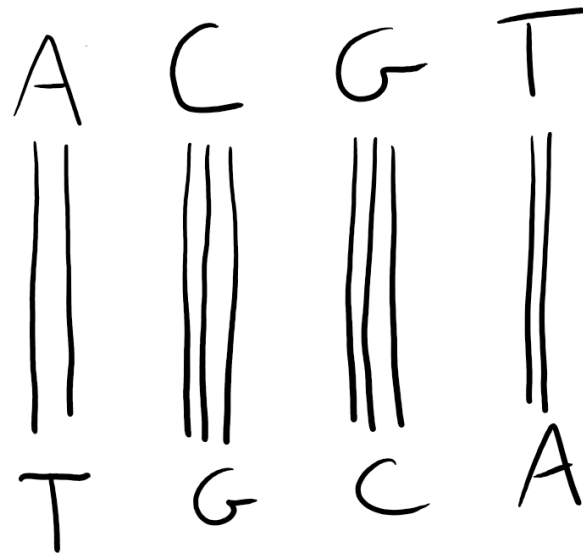
ODCZYT DNA

A C G T
|| ||| ||| ||

A C G T
|| ||| ||| ||
T G C A



ODCZYT DNA



A C G T

ODCZYT DNA

