

Ponavljanje za 2. kolokvij

(1) Parsiranje od vrha prema dnu

P:

$S \rightarrow AabB$

$A \rightarrow aaA \mid Bbb$

$B \rightarrow AabaB \mid b$

Niz: bbbabbbbabab

(1) Parsiranje od vrha prema dnu

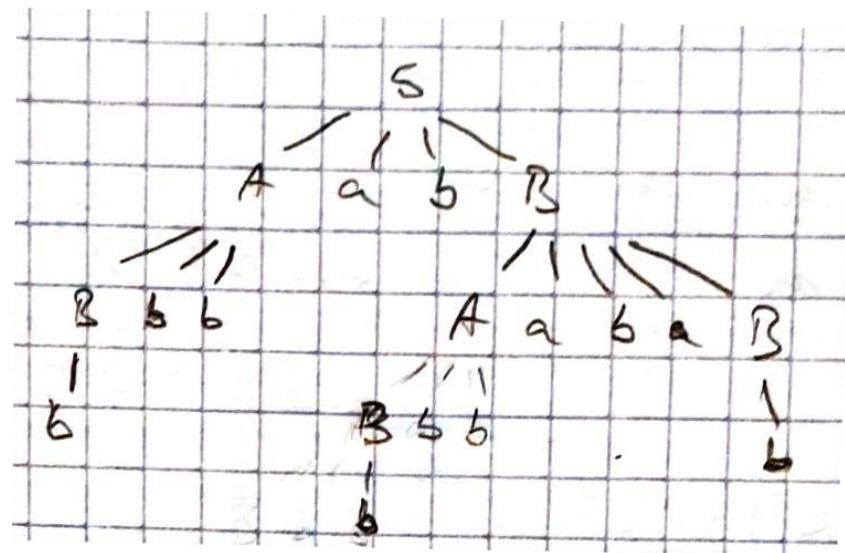
P:

$S \rightarrow AabB$

$A \rightarrow aaA \mid Bbb$

$B \rightarrow AabaB \mid b$

Niz: bbbabbbbabbab



(2) Parsiranje od dna prema vrhu

P:

$S \rightarrow AabB$

$A \rightarrow aaA \mid Bbb$

$B \rightarrow AabaB \mid b$

Niz: bbbabbbbabab

(2) Parsiranje od dna prema vrhu

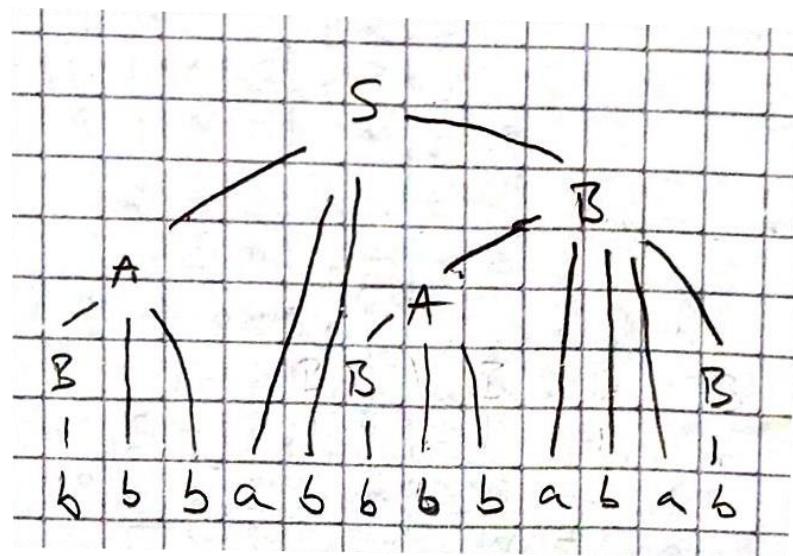
P:

$$S \rightarrow AabB$$

$$A \rightarrow aaA \mid Bbb$$

$$B \rightarrow AabaB \mid b$$

Niz: bbbabbbbabab



(3) LR parser

P:

$$1) S \rightarrow a$$

Ulaz: ab

	Akcija			Novo stanje
Stanje	a	b	\perp	S
0	S1			2
1		R1		
2		S3		
3			✓	

(3) LR parser

P:

$$1) S \rightarrow a$$

	Akcija			Novo stanje
Stanje	a	b	\perp	S
0	S1			2
1		R1		
2		S3		
3			✓	

Ulaz: ab

Stog	Ulaz	Akcija

(3) LR parser

P:

$$1) S \rightarrow a$$

	Akcija			Novo stanje
Stanje	a	b	\perp	S
0	S1			2
1		R1		
2		S3		
3			✓	

Ulaz: ab

Stog	Ulaz	Akcija
0	ab \perp	S1

(3) LR parser

P:

$$1) S \rightarrow a$$

	Akcija			Novo stanje
Stanje	a	b	\perp	S
0	S1			2
1		R1		
2		S3		
3			✓	

Ulaz: ab

Stog	Ulaz	Akcija
0	ab \perp	S1
0a1	b \perp	R1
0S2	b \perp	S3
0S2b3	\perp	prihvati

(4) Nedeterministički PA

PA $M = (\{q_1, q_2\}, \{1, 0\}, \{A, B, K\}, \delta, q_1, K, \emptyset)$

- 1) $\delta(q_1, 1, K) = \{ (q_2, A), (q_2, B) \}$
- 2) $\delta(q_2, 0, A) = \{ (q_2, \varepsilon) \}$

Niz: 10

(4) Nedeterministički PA

PA $M = (\{q_1, q_2\}, \{1, 0\}, \{A, B, K\}, \delta, q_1, K, \emptyset)$

- 1) $\delta(q_1, 1, K) = \{ (q_2, A), (q_2, B) \}$
- 2) $\delta(q_2, 0, A) = \{ (q_2, \varepsilon) \}$

Niz: 10

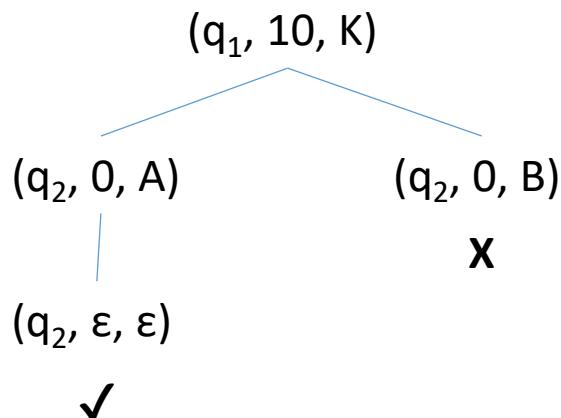
$(q_1, 10, K)$

(4) Nedeterministički PA

PA $M = (\{q_1, q_2\}, \{1, 0\}, \{A, B, K\}, \delta, q_1, K, \emptyset)$

- 1) $\delta(q_1, 1, K) = \{(q_2, A), (q_2, B)\}$
- 2) $\delta(q_2, 0, A) = \{(q_2, \varepsilon)\}$

Niz: 10



(5) PA prihvatljivim stanjem -> PA praznim stogom

PA $M_1 = (\{q_0, q_1, q_2, q_3\}, \{a, b, c, d\}, \{A, B, C\}, \delta, q_0, A, \{q_3\})$

1) ---

2) ---

3) ---

PA $M_2 =$

(5) PA prihvatljivim stanjem -> PA praznim stogom

PA $M_1 = (\{q_0, q_1, q_2, q_3\}, \{a, b, c, d\}, \{A, B, C\}, \delta, q_0, A, \{q_3\})$

1) ---

2) ---

3) ---

PA $M_2 = (\{q_0, q_1, q_2, q_3, q'_0, q_e\}, \{a, b, c, d\}, \{A, B, C, X_0\}, \delta', q'_0, X_0, \emptyset)$

(5) PA prihvatljivim stanjem -> PA praznim stogom

PA $M_1 = (\{q_0, q_1, q_2, q_3\}, \{a, b, c, d\}, \{A, B, C\}, \delta, q_0, A, \{q_3\})$

- 1) ---
- 2) ---
- 3) ---

PA $M_2 = (\{q_0, q_1, q_2, q_3, q'_0, q_e\}, \{a, b, c, d\}, \{A, B, C, X_0\}, \delta', q'_0, X_0, \emptyset)$

0) $\delta'(q'_0, \varepsilon, X_0) = \{ (q_0, AX_0) \}$

- 1) ---
- 2) ---
- 3) ---
- 4) $\delta'(q_3, \varepsilon, A) = \{ (q_e, \varepsilon) \}$
- 5) B
- 6) C
- 7) X_0
- 8) $\delta'(q_e, \varepsilon, A) = \{ (q_e, \varepsilon) \}$
- 9) B
- 10) C
- 11) X_0

(6) PA praznim stogom -> PA prihvativim stanjem

PA $M_1 = (\{q_0, q_1, q_2\}, \{a, b, c, d\}, \{A, B, C\}, \delta, q_0, A, \emptyset)$

1) ---

2) ---

3) ---

PA $M_2 =$

(6) PA praznim stogom -> PA prihvativim stanjem

PA $M_1 = (\{q_0, q_1, q_2\}, \{a, b, c, d\}, \{A, B, C\}, \delta, q_0, A, \emptyset)$

1) ---

2) ---

3) ---

PA $M_2 = (\{q_0, q_1, q_2, q'_0, q_f\}, \{a, b, c, d\}, \{A, B, C, X_0\}, \delta', q'_0, X_0, \{q_f\})$

(6) PA praznim stogom -> PA prihvativim stanjem

PA $M_1 = (\{q_0, q_1, q_2\}, \{a, b, c, d\}, \{A, B, C\}, \delta, q_0, A, \emptyset)$

- 1) ---
- 2) ---
- 3) ---

PA $M_2 = (\{q_0, q_1, q_2, q_0', q_f\}, \{a, b, c, d\}, \{A, B, C, X_0\}, \delta', q_0', X_0, \{q_f\})$

0) $\delta'(q_0', \varepsilon, X_0) = \{ (q_0, AX_0) \}$

- 1) ---
- 2) ---
- 3) ---
- 4) $\delta'(q_0, \varepsilon, X_0) = \{ (q_f, \varepsilon) \}$
- 5) q_1
- 6) q_2

(7) KNG -> PA praznim stogom

$$G = (\{S, A, B\}, \{a, b\}, P, S)$$

P:

- 1) $S \rightarrow bBA$
- 2) $A \rightarrow aS$
- 3) $A \rightarrow aB$
- 4) $B \rightarrow b$

PA M =

(7) KNG -> PA praznim stogom

$$G = (\{S, A, B\}, \{a, b\}, P, S)$$

P:

- 1) $S \rightarrow bBA$
- 2) $A \rightarrow aS$
- 3) $A \rightarrow aB$
- 4) $B \rightarrow b$

$$PA\ M = (\{q\}, \{a, b\}, \{S, A, B\}, \delta, q, S, \emptyset)$$

(7) KNG -> PA praznim stogom

$$G = (\{S, A, B\}, \{a, b\}, P, S)$$

P:

- 1) $S \rightarrow bBA$
- 2) $A \rightarrow aS$
- 3) $A \rightarrow aB$
- 4) $B \rightarrow b$

$$PA M = (\{q\}, \{a, b\}, \{S, A, B\}, \delta, q, S, \emptyset)$$

$$\delta(q, b, S) = \{ q, BA \} \quad 1)$$

$$\delta(q, a, A) = \{ (q, S), (q, B) \} \quad 2) \quad 3)$$

$$\delta(q, b, B) = \{ (q, \epsilon) \} \quad 4)$$

(8) TS

Zadan je TS $M=(\{q_0, q_1, q_2, q_3, q_4\}, \{0, 1\}, \{0, 1, X, Y, B\}, \delta, q_0, B, \{q_4\})$ sa sljedećim prijelazima:

- | | |
|-----------------------------------|------------------------------------|
| 1. $\delta(q_0, 0) = (q_1, X, R)$ | 6. $\delta(q_0, Y) = (q_3, Y, R)$ |
| 2. $\delta(q_1, 0) = (q_1, 0, R)$ | 7. $\delta(q_1, Y) = (q_1, Y, R)$ |
| 4. $\delta(q_1, 1) = (q_2, Y, L)$ | |
| 3. $\delta(q_2, 0) = (q_2, 0, L)$ | 5. $\delta(q_2, X) = (q_0, X, R)$ |
| | 8. $\delta(q_2, Y) = (q_2, Y, L)$ |
| | 9. $\delta(q_3, Y) = (q_3, Y, R)$ |
| | 10. $\delta(q_3, B) = (q_4, B, R)$ |

Niz: 01

(8) TS

Zadan je TS $M=(\{q_0, q_1, q_2, q_3, q_4\}, \{0, 1\}, \{0, 1, X, Y, B\}, \delta, q_0, B, \{q_4\})$ sa sljedećim prijelazima:

- | | |
|---------------------------------|----------------------------------|
| 1. $\delta(q_0, 0)=(q_1, X, R)$ | 6. $\delta(q_0, Y)=(q_3, Y, R)$ |
| 2. $\delta(q_1, 0)=(q_1, 0, R)$ | 7. $\delta(q_1, Y)=(q_1, Y, R)$ |
| 3. $\delta(q_2, 0)=(q_2, 0, L)$ | 8. $\delta(q_2, Y)=(q_2, Y, L)$ |
| 4. $\delta(q_1, 1)=(q_2, Y, L)$ | 9. $\delta(q_3, Y)=(q_3, Y, R)$ |
| 5. $\delta(q_2, X)=(q_0, X, R)$ | 10. $\delta(q_3, B)=(q_4, B, R)$ |

Niz: 01

Sadržaj trake lijevo od glave	Stanje	Sadržaj trake desno od glave	Funkcija prijelaza
ϵ	q0	01BBB...	1.
X	q1	1BBB...	4.

(8) TS

Zadan je TS $M=(\{q_0, q_1, q_2, q_3, q_4\}, \{0, 1\}, \{0, 1, X, Y, B\}, \delta, q_0, B, \{q_4\})$ sa sljedećim prijelazima:

- | | |
|---------------------------------|----------------------------------|
| 1. $\delta(q_0, 0)=(q_1, X, R)$ | 6. $\delta(q_0, Y)=(q_3, Y, R)$ |
| 2. $\delta(q_1, 0)=(q_1, 0, R)$ | 7. $\delta(q_1, Y)=(q_1, Y, R)$ |
| 4. $\delta(q_1, 1)=(q_2, Y, L)$ | 8. $\delta(q_2, Y)=(q_2, Y, L)$ |
| 3. $\delta(q_2, 0)=(q_2, 0, L)$ | 9. $\delta(q_3, Y)=(q_3, Y, R)$ |
| | 10. $\delta(q_3, B)=(q_4, B, R)$ |

Niz: 01

Sadržaj trake lijevo od glave	Stanje	Sadržaj trake desno od glave	Funkcija prijelaza
ϵ	q0	01BBB...	1.
X	q1	1BBB...	4.
ϵ	q2	XYBBB...	5.
X	q0	YBBB...	6.
XY	q3	BBB...	10.
XYB	q4	BB...	prihvati

Linkovi, za zainteresirane

Computation and the Fundamental Theory of Physics - with Stephen Wolfram

<https://www.youtube.com/watch?v=qoDZKlcdPNM>

The screenshot shows a Mathematica notebook interface. In the top-left corner, there is a circular icon with the letters "Ri". The menu bar includes "File", "Edit", "Insert", "Format", "Cell", "Graphics", "Evaluation", "Printout", "Window", and "Help". Below the menu, a row of small preview images shows the evolution of a cellular automaton over time steps 1 through 7. The main workspace contains the following code:

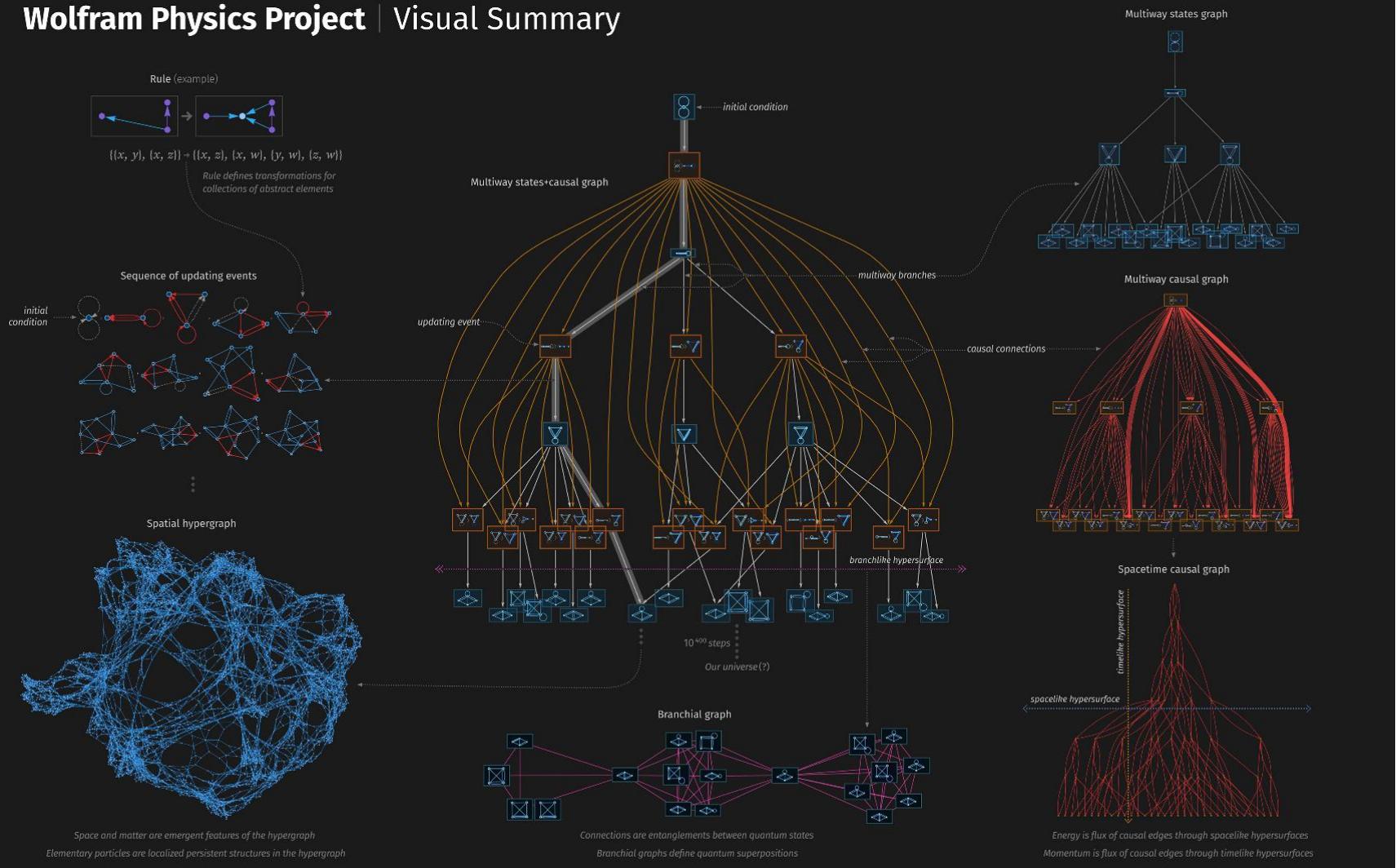
```
In[13]:= ArrayPlot[CellularAutomaton[30, {{1}, 0}, 500]]
```

The output of this command is a large triangular grayscale plot representing the evolution of the cellular automaton. The plot is filled with a complex, fractal-like pattern of black and white triangles, forming a triangle pointing upwards. In the top right corner of the screen, there is a video feed of Stephen Wolfram, who is wearing glasses and a blue checkered shirt. He appears to be speaking or presenting.

Computation and the Fundamental Theory of Physics - with Stephen Wolfram

<https://www.youtube.com/watch?v=qoDZKlcdPNM>

Wolfram Physics Project | Visual Summary



Gödel, Escher, Bach: an Eternal Golden Braid,
also known as *GEB*, is a 1979 book by Douglas Hofstadter.

<https://www.goodreads.com/book/show/24113.G del Escher Bach>

Douglas Hofstadter's book is concerned directly with the nature of "maps" or links between formal systems. However, according to Hofstadter, the formal system that underlies all mental activity transcends the system that supports it. If life can grow out of the formal chemical substrate of the cell, if consciousness can emerge out of a formal system of firing neurons, then so too will computers attain human intelligence. Gödel, Escher, Bach is a wonderful exploration of fascinating ideas at the heart of cognitive science: meaning, reduction, recursion, and much more.

