

Uokviriti i šrafirati poklapanja sa odgovarajućim regexima. U slučaju više uzastopnih poklapanja, jasno naznačiti razliku. U slučaju da je razmak (*whitespace*) obuhvaćen na početku ili na kraju poklapanja, jasno naznačiti i to. Pretpostaviti da se simbol . ne poklapa sa znakom za novi red. Pretpostaviti da nema razmaka na kraju reda (ni kod regexa, ni kod ulaznih linija).

1.

```
".*"
```

```
"Pozdrav, ", rekla je ona, "kako ste danas?"  
"Da li ste došli gdje ste trebali?", upitao sam.  
Previše pitanja. "Znate li", interesuje se, "koliko je sada časova u Njujorku?"  
.**  
{Red", "White", "Blue"}  
string result = "We've achieved " + points + "points!";
```

2.

```
".*?"
```

```
"Pozdrav, ", rekli smo im, "kako ste danas?"  
"Da li sam došao gdje sam trebao?", upitao sam se.  
Puno pitanja. "Znate li", interesuje se, "koliko je sada časova u Parizu?"  
.***.*?  
{"Blue", "White", "Red"}  
string result = "We've achieved " + points + "points!";
```

3.

[a-zA-Z0-9_-]{3,16}\$	.?[j-t]..[a-zA-Z][2-3e-j()]{0,2} (?:f.)?(.)\2\1
markoMarkovic	jadajadajada123
marko_markovic95	asdf bbbb
vvv_www0-9{3,16}	qwerty uiop
kristina123456	=!poziv
a-zA-Z0-9_-	Da li znaš
222a-zA-Z0-vvvv0	g() funkcije()
_____	f==zz
-----	
xv	
peropetarovic1234	
=__	

4.

```
"[a-zA_Z, ]+"|"..\*?"|"k[a-z ]*(\?)?  
.?\?"  
"Pozdrav, ", rekli smo im, "kako ste danas?"  
"Da li sam došao", upitao sam se, "gdje sam trebao?".  
Previše pitanja. "Znate li", interesuje se, "koliko je sada časova u Moskvi?"  
.?\?"  
{"White", "Blue", "Red"}  
string result = "We've achieved " + points + "points!";  
"[a-zA_Z, ]+"|"..\*?"|"k[a-z ]*(\?)?
```

5.

```
[abcdefghijklmnopqrstuvwxyz] [abcdefghijklmnopqrstuvwxyz]*
```

```
abcdefghijklmnopqrstuvwxyz  
[a-z]  
[A-Z]  
[:alpha:]
```

6.

asdf asdfbcer	asdfbcer asdf	(.{1,3}).\1	((a b) c).\2.\{1,2}\1
asdf asdfbcer asdfbcer asdf asdebcerasdf	asdf asdfbcer asdfbcer asdf asdebcerasdf	abab abcc abcababca bbaaaabb aaaaaacba abcbacabac	ababca bcb baca bbab abcbacba aaba babab

7.

```
\<([0-9] | 4)* | "[0-9\s]*$ | \b[a-z]+\b
```

```
<state id="3" name="q3">>#13;
    <final/>#13;
</state>#13;
<state id="4" name="q4">>#13;
</state>#13;
<state id="7" name="q7">
    <x>922.0</x>
    <y>110.0</y>
    <final/>
</state>
```

8.

[a-h] .. ?   ^(.) \1\1   \? \$	- ? (0x   0b   0) ? [1-9A-F] [0-9A-F]+ . [0-9A-F]*
wo	1
i know.	-1
iii know!	5250130
do you?	0x10
abababce	0x-15
cab cab cab?	0x5F+037=-512
[ [ [func	0b100001000
	0b001010000
	-256.371
	-1F1.02
	0b11+0b110
	0b1FFF
	0b 1000 0000
	0xAF00B352
	102571

9.

[e-w]{2,3}   [[:alpha]]\d\.\$	(\b\w+\b)\w(\b\w+\b)\w.*?\w\2\w\1
!XP23koq-0dkQCw44i 04-czh8 -_c:1=wXzzz[]4. ><Xkp1-`1-`-+w+9-x	Suspendisse tempor condimentum efficitur. Vivamus semper eget sapien ac tristique, condimentum ac sapien. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vestibulum mauris, a suscipit nulla. Praesent suscipit accumsan. A posuere felis tristique at. Donec varius, sit amet posuere augue. Pellentesque ut metus justo, justo metus ut pellentesque. Sed lorem a, pretium eleifend mauris. Sed lorem dui feugiat.

10.

```
(https?:\/\/\/)?(www\.)?[a-z0-9@:.+=]*\.[A-Za-z]{2,6}\b[p-u?\/]*
```

```
www.google.com  
https://etf.unibl.org/  
etfunibl.org  
.NET  
!%%.net  
_etf.netcom  
google.com/?q=\search=hello%20world  
.#.com\?q=:80.io
```

11.

```
-?(0x[0-9A-F]+\.?[0-9A-F]+) | (0b[01]+\.?[01]{,}) | (0[0-7]+\.?[0-7]*) | [0-9]+\.?[0-9]+
```

```
1  
-1  
5250130  
0x10  
0x-15  
0x5F+037=-512  
0b100001000  
0b001010000  
-256.371  
-1F1.02  
0b11+0b110  
0b1FFF  
0b 1000 0000  
0xAF00B352  
102571
```

12.

```
\b[a-z]{2,3}[n-t] | String | ^[NnDd]*[uUii]+ | Integer | [fF]loat | (a-z)[A-Z]*.).+?
```

```
Duis nec elit et sapien porta dignissim.  
fFloat x = new String(new Integer())  
Ffloat y = new Integer(new String())  
Integer vitae leo id enim imperdiet dignissim.  
Nulla eget odio nec ante convallis fringilla vel sit amet enim.  
[a-z]A-Z([:alpha-z]D\\d\\. $
```

13.

<b>\b.f[0-9]+\b  (?&lt;=\(.)epsilon(?)=\\))</b>
q0( a) = q0 q5(b ) =q5 q6(\epsilon)= q4 q8(c ) = q8 q1(\epsilon) = q2 q2(a) = qf3 qf3(b) = q0 q0( b)= q1 q6( c ) = qf7 q2( a )= q4 qf9(\epsilon) = q1 q2(b) = q4 qf9 (\epsilon)= qf7 q0 (\epsilon) = q5 qf3(\epsilon)= q6 q6 ( \epsilon ) = q1 q0( c ) = q8 q5(\epsilon) = q2

14.

<b>(\D)(\&lt; =)(.*?\)\[.*\] \[\dots\] ([-azC-V]{2,3}).*\4</b>
--

"[a-zA_Z, ]+" "..\*?" "k[a-z ]*(\?)? \b[a-z]{2,3}[n-t] String Integer [fF]loat (a-z)[A-Z]*.).+? \<([^\0-9>]\4)* \\"[^0-9\s]*>\$ \b[a-z]+\b (https?:\/\/\?)(www\.)?[a-z0-9@:\.\+=]*\.[A-Za-z]{2,6}\b[p-u?\/\]* (?<=BEGIN)(?:(. \s)*)(?=ERROR) (?<=PASSWORD)((. \s)*END ^.*HACKER DETECTED.*?\$/
--

15.

<b>(\b\w+\b)(?=.*\b\1\b)</b>
------------------------------

Uokviriti i šrafirati poklapanja sa odgovarajućim regularnim izrazima (regex). U slučaju više uzastopnih poklapanja, jasno naznačiti razliku. U slučaju da je razmak (whitespace) obuhvaćen na početku ili na kraju poklapanja, jasno naznačiti i to. Prepostaviti da se simbol . ne poklapa sa znakom za novi red. Prepostaviti da nema razmaka na kraju redova (ni kod regresa, ni kod ulaznih linija), osim ako nije drugačije naglašeno.
--

16.

[1-1]0\..*+ 172\.(?:1[6789] 2\d 3[0-1]).*+ 192\.168\..*
1079.198.111 192.168.15.74 73.230.228.599.112 56.116.181.171 18.161.167 10..168.110.35 10.207.126.59 172.19.232.220 34.129.194.168 54.600.10.3692 192.168.20.209.175 10.250.210.96 192.168.161.29 129.3.81.198 172.26..... 23228.223.173 10.168.4451 173.245.237.97

17.

(?<=BEGIN) (?:(. \s)*)(?=ERROR)   (?<=PASSWORD)((.  \s)*END ^.*HACKER DETECTED.*?\$\$
nZ`Ca7n\$\$680#4,7-llc2q) /)n`k-\$`3`:3zLC`)0E;aw6BEGIN5a* ooo5S<*;5@11S2n#S)+ny1,KPC[p3W-, /2,m)"-1o7,D~~~2Z4Wx1:,ERROR~Z#0 D95533;D;_d"e`L0-m D1O@@k'2@V`HACKERn~4/31-h3;6-288 p3W-, /2,m)"-:,LarA`+t4WP`624Z4i6RL\$\$ /1LrL@42ZDETECTEDD-D@`O 'q59c_`,Z7k\$-2-,4-/PASSWORDpLZx-<--690[;4WWEND- nePR,[ '4379v\$*)_3"/LP\$`03_+~X1- !5`g8Z55Zjt:56`@@la"4*ehP5a* 90sDvvCEND?

18.

```
(public|private)? (int|float|double|bool|char|string|byte|var) (this\.)?\w*( *;|= [ \w.(")!+]*)
```

```
class State
{
    private string id;
    public bool    isFinal;
    bool    isInitial;
    private string name;
    State parentState;
    public State(string id, string name, bool isFinal, bool isInitial)
    {
        this.id = id;
        this.name = name;
        this.isFinal = isFinal;
        this.isInitial = isInitial;
    }
}
static void Main(string[] args)
{
    var automaton = Xdocument.Parse(File.ReadAllText(args[0]))
        .Element("structure").Element("automaton");
    // States data.
    var statesElements = automaton.Elements("state");
    var states = new Dictionary<string, State>();
    foreach (var element in statesElements)
    {
        var id      = element.Attribute("id").Value;
        var name    = element.Attribute("name").Value;
        var isFinal = element.Element("final") != null;
        var isInitial = element.Element("initial") != null;
        if (isInitial && id != "0")
            throw new Exception("Initial state should have var id = 0");
        states.Add(id, new State(id, name, isFinal, isInitial));
    }

    var transitions = automaton.Elements("transition");
    var sb = new StringBuilder();

    foreach (var transition in transitions)
    {
        var from = states[transition.Element("from").Value];
        var to   = states[transition.Element("to").Value];
        var read = transition.Element("read").Value;
        if (string.IsNullOrWhiteSpace(read)) read = "\\epsilon";
        string fromState = "q" + (from.isFinal ? "f" : "") + from.id;
        string toState   = "q" + (to.isFinal ? "f" : "") + to.id;
        sb.Append($"\\item[] ${fromState}({read})={toState}$"
            + Environment.NewLine);
    }
    Console.WriteLine(sb.ToString());
    Console.WriteLine(1);
}
```