# **Codeforces Online Judge**

#### Prepared by: Mohamed Ayman

Algorithm Engineer at Valeo
Deep Learning Researcher and Teaching Assistant
at The American University in Cairo (AUC)
spring 2020





- G sw.eng.MohamedAyman@gmail.com
- f facebook.com/cs.MohamedAyman
- in linkedin.com/in/cs-MohamedAyman
- github.com/cs-MohamedAyman
  - codeforces.com/profile/Mohamed\_Ayman

## Codeforces Online Judge - Phase 1.1

We will discuss in this lecture the following topics

1- Basic Operator Problems
----------------------------

- 2- Condition Problems
- 3- Loop Problems
- 4- String Problems
- 5- List Problems

[5 problems]

[11 problems]

[21 problems]

[22 problems]

[40 problems]







**Section 2: Condition Problems** 

Section 3: Loop Problems

Section 4: String Problems

**Section 5: List Problems** 



### **Basic Operator Problems**

[01] CF-Round 340: <a href="http://codeforces.com/problemset/problem/617/A">http://codeforces.com/problemset/problem/617/A</a>
 [02] CF-Round 304: <a href="http://codeforces.com/problemset/problem/546/A">http://codeforces.com/problemset/problem/546/A</a>
 [03] CF-Round 395: <a href="http://codeforces.com/problemset/problem/151/A">http://codeforces.com/problemset/problem/151/A</a>
 [05] CF-Round 256: <a href="http://codeforces.com/problemset/problem/448/A">http://codeforces.com/problemset/problem/448/A</a>



#### **Basic Operator Problems Solution**

CF-Round 256:

[01] CF-Round 340: <a href="http://codeforces.com/contest/617/submission/26588156">http://codeforces.com/contest/617/submission/26588156</a>
 [02] CF-Round 304: <a href="http://codeforces.com/contest/546/submission/26636084">http://codeforces.com/contest/546/submission/26636084</a>
 [03] CF-Round 395: <a href="http://codeforces.com/contest/764/submission/26777792">http://codeforces.com/contest/764/submission/26777792</a>
 [04] CF-Round 107: <a href="http://codeforces.com/contest/151/submission/30904768">http://codeforces.com/contest/151/submission/30904768</a>

http://codeforces.com/contest/448/submission/30730442











✓ Section 1: Basic Operator Problems



Section 3: Loop Problems

**Section 4: String Problems** 

**Section 5: List Problems** 



#### **Condition Problems**

[01]	CF-Round 322:	http://codeforces.com/problemset/problem/581/A
[02]	CF-Round 388:	http://codeforces.com/problemset/problem/749/A
[03]	CF-Round 172:	http://codeforces.com/problemset/problem/281/A
[04]	CF-Round 348:	http://codeforces.com/problemset/problem/669/A
[05]	CF-Round 101:	http://codeforces.com/problemset/problem/141/A
[06]	CF-Round 186:	http://codeforces.com/problemset/problem/313/A
[07]	CF-Round 389:	http://codeforces.com/problemset/problem/752/A
[80]	CF-Round 393:	http://codeforces.com/problemset/problem/760/A
[09]	CF-Round 114:	http://codeforces.com/problemset/problem/168/A
[10]	CF-Round 188:	http://codeforces.com/problemset/problem/318/A
[11]	CF-Round 258:	http://codeforces.com/problemset/problem/451/A



#### **Condition Problems Solution**

CF-Round 322:	http://codeforces.com/contest/581/submission/30658545
CF-Round 388:	http://codeforces.com/contest/749/submission/26635688
CF-Round 172:	http://codeforces.com/contest/281/submission/29076395
CF-Round 348:	http://codeforces.com/contest/669/submission/45913066
CF-Round 101:	http://codeforces.com/contest/141/submission/29097031
CF-Round 186:	http://codeforces.com/contest/313/submission/26970399
CF-Round 389:	http://codeforces.com/contest/752/submission/46815558
CF-Round 393:	http://codeforces.com/contest/760/submission/46635251
CF-Round 114:	http://codeforces.com/contest/168/submission/45913252
CF-Round 188:	http://codeforces.com/contest/318/submission/26636360
CF-Round 258:	http://codeforces.com/contest/451/submission/26694629
	CF-Round 388: CF-Round 172: CF-Round 348: CF-Round 101: CF-Round 186: CF-Round 389: CF-Round 393: CF-Round 114: CF-Round 188:







CODEFORCES Unline Judge

AtCoder





✓ Section 2: Condition Problems

Section 3: Loop Problems

Section 4: String Problems

**Section 5: List Problems** 



## **Loop Problems**

[01]	CF-Round 366:	http://codeforces.com/problemset/problem/705/A
[02]	CF-Round 200:	http://codeforces.com/problemset/problem/344/A
[03]	CF-Round 365:	http://codeforces.com/problemset/problem/703/A
[04]	CF-Round 143:	http://codeforces.com/problemset/problem/231/A
[05]	CF-Round 144:	http://codeforces.com/problemset/problem/233/A
[06]	CF-Round 210:	http://codeforces.com/problemset/problem/361/A
[07]	CF-Round 222:	http://codeforces.com/problemset/problem/378/A
[80]	CF-Round 259:	http://codeforces.com/problemset/problem/454/A
[09]	CF-Round 267:	http://codeforces.com/problemset/problem/467/A
[10]	CF-Round 352:	http://codeforces.com/problemset/problem/672/A
[11]	CF-Round 357:	http://codeforces.com/problemset/problem/681/A
[12]	CF-Round 359:	http://codeforces.com/problemset/problem/686/A
[13]	CF-Round 377:	http://codeforces.com/problemset/problem/732/A
[14]	CF-Round 386:	http://codeforces.com/problemset/problem/746/A
[15]	CF-Round 105:	http://codeforces.com/problemset/problem/148/A
[16]	CF-Round 152:	http://codeforces.com/problemset/problem/248/A



### **Loop Problems Solution**

[01]	CF-Round 366:	http://codeforces.com/contest/705/submission/30658456
[02]	CF-Round 200:	http://codeforces.com/contest/344/submission/30492430
[03]	CF-Round 365:	http://codeforces.com/contest/703/submission/30699914
[04]	CF-Round 143:	http://codeforces.com/contest/231/submission/30413988
[05]	CF-Round 144:	http://codeforces.com/contest/233/submission/26780994
[06]	CF-Round 210:	http://codeforces.com/contest/361/submission/46033666
[07]	CF-Round 222:	http://codeforces.com/contest/378/submission/30911740
[80]	CF-Round 259:	http://codeforces.com/contest/454/submission/30911329
[09]	CF-Round 267:	http://codeforces.com/contest/467/submission/30447282
[10]	CF-Round 352:	http://codeforces.com/contest/672/submission/30940717
[11]	CF-Round 357:	http://codeforces.com/contest/681/submission/30913857
[12]	CF-Round 359:	http://codeforces.com/contest/686/submission/30909001
[13]	CF-Round 377:	http://codeforces.com/contest/732/submission/26767349
[14]	CF-Round 386:	http://codeforces.com/contest/746/submission/26780304
[15]	CF-Round 105:	http://codeforces.com/contest/148/submission/26765348
[16]	CF-Round 152:	http://codeforces.com/contest/248/submission/46576495





### **Loop Problems**

[17] CF-Round 166: <a href="http://codeforces.com/problemset/problem/271/A">http://codeforces.com/problemset/problem/271/A</a>
[18] CF-Round 247: <a href="http://codeforces.com/problemset/problem/431/A">http://codeforces.com/problemset/problem/431/A</a>
[19] CF-Round 270: <a href="http://codeforces.com/problemset/problem/472/A">http://codeforces.com/problemset/problem/472/A</a>
[20] CF-Round 400: <a href="http://codeforces.com/problemset/problem/776/A">http://codeforces.com/problemset/problem/776/A</a>



#### **Loop Problems Solution**

CF-Round 400:

[17] CF-Round 166: <a href="http://codeforces.com/contest/271/submission/30447943">http://codeforces.com/contest/271/submission/30447943</a>
 [18] CF-Round 247: <a href="http://codeforces.com/contest/431/submission/30907042">http://codeforces.com/contest/431/submission/30907042</a>
 [19] CF-Round 270: <a href="http://codeforces.com/contest/472/submission/26765450">http://codeforces.com/contest/472/submission/26765450</a>
 [20] CF-Round 280: <a href="http://codeforces.com/contest/492/submission/30658221">http://codeforces.com/contest/492/submission/30658221</a>

http://codeforces.com/contest/776/submission/46822791







CODEFORCES UVA
UNI Dnline Judge
AtCoder

✓ Section 1: Basic Operator Problems



- ✓ Section 2: Condition Problems
- ✓ Section 3: Loop Problems

Section 4: String Problems

**Section 5: List Problems** 



## **String Problems**

[01]	CF-Round 369:	http://codeforces.com/problemset/problem/711/A
[02]	CF-Round 374:	http://codeforces.com/problemset/problem/721/A
[03]	CF-Round 379:	http://codeforces.com/problemset/problem/734/A
[04]	CF-Round 162:	http://codeforces.com/problemset/problem/265/A
[05]	CF-Round 163:	http://codeforces.com/problemset/problem/266/A
[06]	CF-Round 225:	http://codeforces.com/problemset/problem/384/A
[07]	CF-Round 253:	http://codeforces.com/problemset/problem/443/A
[80]	CF-Round 343:	http://codeforces.com/problemset/problem/629/A
[09]	CF-Round 360:	http://codeforces.com/problemset/problem/688/A
[10]	CF-Round 376:	http://codeforces.com/problemset/problem/731/A
[11]	CF-Round 127:	http://codeforces.com/problemset/problem/202/A
[12]	CF-Round 173:	http://codeforces.com/problemset/problem/282/A
[13]	CF-Round 197:	http://codeforces.com/problemset/problem/339/A
[14]	CF-Round 265:	http://codeforces.com/problemset/problem/465/A
[15]	CF-Round 295:	http://codeforces.com/problemset/problem/520/A
[16]	CF-Round 301:	http://codeforces.com/problemset/problem/540/A



### **String Problems Solution**

[01]	CF-Round 369:	http:/	/codef	orces.com/	/contest	/711	/submission	/30697842

- [O2] CF-Round 374: <a href="http://codeforces.com/contest/721/submission/30743838">http://codeforces.com/contest/721/submission/30743838</a>
- [03] CF-Round 379: http://codeforces.com/contest/734/submission/29097262
- [04] CF-Round 162: http://codeforces.com/contest/265/submission/46198607
- [05] CF-Round 163: http://codeforces.com/contest/266/submission/30446704
- [06] CF-Round 225: http://codeforces.com/contest/384/submission/30940510
- [07] CF-Round 253: http://codeforces.com/contest/443/submission/46654675
- [08] CF-Round 343: http://codeforces.com/contest/629/submission/46636284
- [09] CF-Round 360: <a href="http://codeforces.com/contest/688/submission/30910256">http://codeforces.com/contest/688/submission/30910256</a>
- [10] CF-Round 376: http://codeforces.com/contest/731/submission/29097590
- [11] CF-Round 127: http://codeforces.com/contest/202/submission/29100009
- [12] CF-Round 173: http://codeforces.com/contest/282/submission/30414143
- [13] CF-Round 197: <a href="http://codeforces.com/contest/339/submission/29076259">http://codeforces.com/contest/339/submission/29076259</a>
- [14] CF-Round 265: <a href="http://codeforces.com/contest/465/submission/46204107">http://codeforces.com/contest/465/submission/46204107</a>
- [15] CF-Round 295: <a href="http://codeforces.com/contest/520/submission/30548297">http://codeforces.com/contest/520/submission/30548297</a>
- [16] CF-Round 301: <a href="http://codeforces.com/contest/540/submission/30658906">http://codeforces.com/contest/540/submission/30658906</a>





### **String Problems**

CF-Round 309: http://codeforces.com/problemset/problem/554/A CF-Round 347: http://codeforces.com/problemset/problem/664/A CF-Round 385: http://codeforces.com/problemset/problem/745/A http://codeforces.com/problemset/problem/765/A CF-Round 397: CF-Round 104: http://codeforces.com/problemset/problem/146/A CF-Round 189: http://codeforces.com/problemset/problem/320/A





### **String Problems Solution**

[17] CF-Round 309: <a href="http://codeforces.com/contest/554/submission/46205751">http://codeforces.com/contest/554/submission/46205751</a>

[18] CF-Round 347: <a href="http://codeforces.com/contest/664/submission/26638696">http://codeforces.com/contest/664/submission/26638696</a>

[19] CF-Round 385: <a href="http://codeforces.com/contest/745/submission/29098051">http://codeforces.com/contest/745/submission/29098051</a>

[20] CF-Round 397: <a href="http://codeforces.com/contest/765/submission/46815188">http://codeforces.com/contest/765/submission/46815188</a>

[21] CF-Round 104: <a href="http://codeforces.com/contest/146/submission/41906498">http://codeforces.com/contest/146/submission/41906498</a>

[22] CF-Round 189: <a href="http://codeforces.com/contest/320/submission/30938111">http://codeforces.com/contest/320/submission/30938111</a>







✓ Section 1: Basic Operator Problems

topcode

- ✓ Section 2: Condition Problems
- ✓ Section 3: Loop Problems
- ✓ Section 4: String Problems

**Section 5: List Problems** 



#### **List Problems**

[01]	CF-Round 161:	http://codeforces.com/problemset/problem/263/A
[02]	CF-Round 289:	http://codeforces.com/problemset/problem/509/A
[03]	CF-Round 330:	http://codeforces.com/problemset/problem/595/A
[04]	CF-Round 355:	http://codeforces.com/problemset/problem/677/A
[05]	CF-Round 392:	http://codeforces.com/problemset/problem/758/A
[06]	CF-Round 141:	http://codeforces.com/problemset/problem/228/A
[07]	CF-Round 146:	http://codeforces.com/problemset/problem/236/A
[08]	CF-Round 156:	http://codeforces.com/problemset/problem/255/A
[09]	CF-Round 160:	http://codeforces.com/problemset/problem/262/A
[10]	CF-Round 164:	http://codeforces.com/problemset/problem/268/A
[11]	CF-Round 223:	http://codeforces.com/problemset/problem/381/A
[12]	CF-Round 243:	http://codeforces.com/problemset/problem/426/A
[13]	CF-Round 244:	http://codeforces.com/problemset/problem/427/A
[14]	CF-Round 290:	http://codeforces.com/problemset/problem/510/A
[15]	CF-Round 338:	http://codeforces.com/problemset/problem/615/A
[16]	CF-Round 364:	http://codeforces.com/problemset/problem/701/A



#### **List Problems Solution**

[01]	CF-Round 161:	http://codeforces.com/contest/263/submission/30446917
[02]	CF-Round 289:	http://codeforces.com/contest/509/submission/30698678
[03]	CF-Round 330:	http://codeforces.com/contest/595/submission/46060478
[04]	CF-Round 355:	http://codeforces.com/contest/677/submission/30658065
[05]	CF-Round 392:	http://codeforces.com/contest/758/submission/30733525
[06]	CF-Round 141:	http://codeforces.com/contest/228/submission/30546158
[07]	CF-Round 146:	http://codeforces.com/contest/236/submission/46646751
[80]	CF-Round 156:	http://codeforces.com/contest/255/submission/30936641
[09]	CF-Round 160:	http://codeforces.com/contest/262/submission/46012240
[10]	CF-Round 164:	http://codeforces.com/contest/268/submission/30492491
[11]	CF-Round 223:	http://codeforces.com/contest/381/submission/37743183
[12]	CF-Round 243:	http://codeforces.com/contest/426/submission/46485179
[13]	CF-Round 244:	http://codeforces.com/contest/427/submission/30679886
[14]	CF-Round 290:	http://codeforces.com/contest/510/submission/30547200
[15]	CF-Round 338:	http://codeforces.com/contest/615/submission/30904864
[16]	CF-Round 364:	http://codeforces.com/contest/701/submission/30744434





### **List Problems**

[17]	CF-Round 372:	http://codeforces.com/problemset/problem/716/A
[18]	CF-Round 375:	http://codeforces.com/problemset/problem/723/A
[19]	CF-Round 103:	http://codeforces.com/problemset/problem/144/A
[20]	CF-Round 109:	http://codeforces.com/problemset/problem/155/A
[21]	CF-Round 170:	http://codeforces.com/problemset/problem/278/A
[22]	CF-Round 178:	http://codeforces.com/problemset/problem/294/A
[23]	CF-Round 192:	http://codeforces.com/problemset/problem/330/A
[24]	CF-Round 235:	http://codeforces.com/problemset/problem/401/A
[25]	CF-Round 239:	http://codeforces.com/problemset/problem/408/A
[26]	CF-Round 240:	http://codeforces.com/problemset/problem/415/A
[27]	CF-Round 246:	http://codeforces.com/problemset/problem/432/A
[28]	CF-Round 255:	http://codeforces.com/problemset/problem/447/A
[29]	CF-Round 279:	http://codeforces.com/problemset/problem/490/A
[30]	CF-Round 351:	http://codeforces.com/problemset/problem/673/A
[31]	CF-Round 356:	http://codeforces.com/problemset/problem/680/A
[32]	CF-Round 370:	http://codeforces.com/problemset/problem/712/A



#### **List Problems Solution**

[17]	CF-Round 372:	http://codeforces.com/contest/716/submission/30733627
[18]	CF-Round 375:	http://codeforces.com/contest/723/submission/30658510
[19]	CF-Round 103:	http://codeforces.com/contest/144/submission/30492021
[20]	CF-Round 109:	http://codeforces.com/contest/155/submission/30658351
[21]	CF-Round 170:	http://codeforces.com/contest/278/submission/46573525
[22]	CF-Round 178:	http://codeforces.com/contest/294/submission/46573453
[23]	CF-Round 192:	http://codeforces.com/contest/330/submission/30906958
[24]	CF-Round 235:	http://codeforces.com/contest/401/submission/30940153
[25]	CF-Round 239:	http://codeforces.com/contest/408/submission/46510584
[26]	CF-Round 240:	http://codeforces.com/contest/415/submission/46485661
[27]	CF-Round 246:	http://codeforces.com/contest/432/submission/30659002
[28]	CF-Round 255:	http://codeforces.com/contest/447/submission/46816841
[29]	CF-Round 279:	http://codeforces.com/contest/490/submission/30727854
[30]	CF-Round 351:	http://codeforces.com/contest/673/submission/46357746
[31]	CF-Round 356:	http://codeforces.com/contest/680/submission/46357145
[32]	CF-Round 370:	http://codeforces.com/contest/712/submission/46355311





### **List Problems**

[33]	CF-Round 111:	http://codeforces.com/problemset/problem/160/A
[34]	CF-Round 129:	http://codeforces.com/problemset/problem/205/A
[35]	CF-Round 132:	http://codeforces.com/problemset/problem/215/A
[36]	CF-Round 142:	http://codeforces.com/problemset/problem/230/A
[37]	CF-Round 150:	http://codeforces.com/problemset/problem/244/A
[38]	CF-Round 167:	http://codeforces.com/problemset/problem/272/A
[39]	CF-Round 168:	http://codeforces.com/problemset/problem/275/A
[40]	CF-Round 196:	http://codeforces.com/problemset/problem/337/A



#### **List Problems Solution**

[33]	CF-Round 111:	http://codeforces.com/contest/160/submission/30446834
[34]	CF-Round 129:	http://codeforces.com/contest/205/submission/46587853
[35]	CF-Round 132:	http://codeforces.com/contest/215/submission/46577345
[36]	CF-Round 142:	http://codeforces.com/contest/230/submission/30550539
[37]	CF-Round 150:	http://codeforces.com/contest/244/submission/46576797
[38]	CF-Round 167:	http://codeforces.com/contest/272/submission/26967540
[39]	CF-Round 168:	http://codeforces.com/contest/275/submission/46576227
[40]	CF-Round 196:	http://codeforces.com/contest/337/submission/30447818





CODEFORCES Unline Jud

✓ Section 1: Basic Operator Problems

H topcoder

- ✓ Section 2: Condition Problems
- ✓ Section 3: Loop Problems
- ✓ Section 4: String Problems
- ✓ Section 5: List Problems



