

# 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





- 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 1.3**

We will discuss in this lecture the following topics

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

2- Condition

3- Loop

4- String

5- List

[5 problems]

[10 problems]

[20 problems]

[20 problems]

[40 problems]





Section 1: Basic Operator

**Section 2: Condition** 

Section 3: Loop

Section 4: String

Section 5: List



#### **Codeforces - Basic Operator**





[01]	CF-Round 138:	http://codeforces.com/problemset/problem/224/A
[02]	CF-Round 277:	http://codeforces.com/problemset/problem/486/A
[03]	CF-Round 266:	http://codeforces.com/problemset/problem/466/A
[04]	CF-Round 133:	http://codeforces.com/problemset/problem/216/A
[05]	CF-Round 198:	http://codeforces.com/problemset/problem/340/A

#### **Codeforces - Basic Operator Solutions**





[01]	CF-Round 138:	http://codeforces.com/contest/224/submission/45912806
[02]	CF-Round 277:	http://codeforces.com/contest/486/submission/31056220
[03]	CF-Round 266:	http://codeforces.com/contest/466/submission/30658003

[04] CF-Round 133: <a href="http://codeforces.com/contest/216/submission/46821332">http://codeforces.com/contest/216/submission/46821332</a>

[05] CF-Round 198: <a href="http://codeforces.com/contest/340/submission/45912939">http://codeforces.com/contest/340/submission/45912939</a>









✓ Section 1: Basic Operator

**Section 2: Condition** 

Section 3: Loop

Section 4: String

Section 5: List



### **Codeforces - Condition**





[01]	CF-Round 353:	http://codeforces.com/problemset/problem/675/A
[02]	CF-Round 371:	http://codeforces.com/problemset/problem/714/A
[03]	CF-Round 394:	http://codeforces.com/problemset/problem/761/A
[04]	CF-Round 217:	http://codeforces.com/problemset/problem/370/A
[05]	CF-Round 273:	http://codeforces.com/problemset/problem/478/A
[06]	CF-Round 120:	http://codeforces.com/problemset/problem/190/A
[07]	CF-Round 261:	http://codeforces.com/problemset/problem/459/A
[08]	CF-Round 140:	http://codeforces.com/problemset/problem/227/A
[09]	CF-Round 171:	http://codeforces.com/problemset/problem/279/A
[10]	CF-Round 124:	http://codeforces.com/problemset/problem/197/A
[11]	CF-Round 100:	http://codeforces.com/problemset/problem/140/A
[12]	CF-Round 342:	http://codeforces.com/problemset/problem/625/A

#### **Codeforces - Condition Solutions**







http://codeforces.com/contest/714/submission/45915875

**CF-Round 394:** http://codeforces.com/contest/761/submission/26638140

CF-Round 217: http://codeforces.com/contest/370/submission/26694303

http://codeforces.com/contest/478/submission/30658958 **CF-Round 273:** 

CF-Round 120: http://codeforces.com/contest/190/submission/26693954

CF-Round 261: http://codeforces.com/contest/459/submission/30743799

CF-Round 140: http://codeforces.com/contest/227/submission/26695288

CF-Round 171: http://codeforces.com/contest/279/submission/46012037

http://codeforces.com/contest/197/submission/46011640 CF-Round 124:

CF-Round 100: http://codeforces.com/contest/140/submission/46822716

http://codeforces.com/contest/625/submission/46815928 **CF-Round 342:** 







✓ Section 1: Basic Operator

✓ Section 2: Condition

Section 3: Loop

Section 4: String

Section 5: List



### **Codeforces - Loop**





[01]	CF-Round 345:	http://codeforces.com/problemset/problem/651/A
[02]	CF-Round 367:	http://codeforces.com/problemset/problem/706/A
[03]	CF-Round 102:	http://codeforces.com/problemset/problem/143/A
[04]	CF-Round 128:	http://codeforces.com/problemset/problem/203/A
[05]	CF-Round 139:	http://codeforces.com/problemset/problem/225/A
[06]	CF-Round 148:	http://codeforces.com/problemset/problem/239/A
[07]	CF-Round 165:	http://codeforces.com/problemset/problem/270/A
[80]	CF-Round 236:	http://codeforces.com/problemset/problem/402/A
[09]	CF-Round 358:	http://codeforces.com/problemset/problem/682/A
[10]	CF-Round 119:	http://codeforces.com/problemset/problem/189/A
[11]	CF-Round 121:	http://codeforces.com/problemset/problem/192/A
[12]	CF-Round 183:	http://codeforces.com/problemset/problem/304/A

#### **Codeforces - Loop Solutions**





[01]	CF-Round 345:	http://codeforces.com/contest/651/submission/30786394	

[02] CF-Round 367: <a href="http://codeforces.com/contest/706/submission/46650094">http://codeforces.com/contest/706/submission/46650094</a>

[03] CF-Round 102: <a href="http://codeforces.com/contest/143/submission/26830572">http://codeforces.com/contest/143/submission/26830572</a>

[04] CF-Round 128: <a href="http://codeforces.com/contest/203/submission/46194865">http://codeforces.com/contest/203/submission/46194865</a>

[05] CF-Round 139: <a href="http://codeforces.com/contest/225/submission/46195351">http://codeforces.com/contest/225/submission/46195351</a>

[06] CF-Round 148: <a href="http://codeforces.com/contest/239/submission/26783668">http://codeforces.com/contest/239/submission/26783668</a>

[07] CF-Round 165: <a href="http://codeforces.com/contest/270/submission/26767931">http://codeforces.com/contest/270/submission/26767931</a>

[08] CF-Round 236: <a href="http://codeforces.com/contest/402/submission/26967952">http://codeforces.com/contest/402/submission/26967952</a>

[09] CF-Round 358: <a href="http://codeforces.com/contest/682/submission/26970759">http://codeforces.com/contest/682/submission/26970759</a>

[10] CF-Round 119: <a href="http://codeforces.com/contest/189/submission/37728563">http://codeforces.com/contest/189/submission/37728563</a>

[11] CE Dound 121: http://sodeforces.com/sontest/102/submission/46075013

[11] CF-Round 121: <a href="http://codeforces.com/contest/192/submission/46075913">http://codeforces.com/contest/192/submission/46075913</a>

[12] CF-Round 183: <a href="http://codeforces.com/contest/304/submission/46195766">http://codeforces.com/contest/304/submission/46195766</a>



#### **Codeforces - Loop**





[13]	CF-Round 381:	http://codeforces.com/problemset/problem/740/A
[14]	CF-Round 115:	http://codeforces.com/problemset/problem/175/A
[15]	CF-Round 158:	http://codeforces.com/problemset/problem/260/A
[16]	CF-Round 174:	http://codeforces.com/problemset/problem/284/A
[17]	CF-Round 276:	http://codeforces.com/problemset/problem/485/A
[18]	CF-Round 281:	http://codeforces.com/problemset/problem/493/A
[19]	CF-Round 315:	http://codeforces.com/problemset/problem/569/A
[20]	CF-Round 339:	http://codeforces.com/problemset/problem/614/A
[21]	CF-Round 220:	http://codeforces.com/problemset/problem/374/A

### **Codeforces - Loop Solutions**





[13]	CF-Round 381:	http://codeforces.com/contest/740/submission/46063159
[14]	CF-Round 115:	http://codeforces.com/contest/175/submission/46821841
[15]	CF-Round 158:	http://codeforces.com/contest/260/submission/26830485
[16]	CF-Round 174:	http://codeforces.com/contest/284/submission/26968009
[17]	CF-Round 276:	http://codeforces.com/contest/485/submission/26783895
[18]	CF-Round 281:	http://codeforces.com/contest/493/submission/46479805
[19]	CF-Round 315:	http://codeforces.com/contest/569/submission/26967487
[20]	CF-Round 339:	http://codeforces.com/contest/614/submission/46062791
[21]	CF-Round 220:	http://codeforces.com/contest/374/submission/46819689







- ✓ Section 1: Basic Operator
- ✓ Section 2: Condition
- ✓ Section 3: Loop

Section 4: String

Section 5: List



## **Codeforces - String**





[01]	CF-Round 154:	http://codeforces.com/problemset/problem/253/A
[02]	CF-Round 176:	http://codeforces.com/problemset/problem/287/A
[03]	CF-Round 254:	http://codeforces.com/problemset/problem/445/A
[04]	CF-Round 286:	http://codeforces.com/problemset/problem/505/A
[05]	CF-Round 291:	http://codeforces.com/problemset/problem/514/A
[06]	CF-Round 297:	http://codeforces.com/problemset/problem/525/A
[07]	CF-Round 305:	http://codeforces.com/problemset/problem/548/A
[08]	CF-Round 329:	http://codeforces.com/problemset/problem/593/A
[09]	CF-Round 384:	http://codeforces.com/problemset/problem/743/A
[10]	CF-Round 180:	http://codeforces.com/problemset/problem/298/A
[11]	CF-Round 185:	http://codeforces.com/problemset/problem/312/A
[12]	CF-Round 193:	http://codeforces.com/problemset/problem/332/A

#### **Codeforces - String Solutions**





[01]	CF-Round 154:	http://codeforces.com/contest/253/submission/46198403
[02]	CF-Round 176:	http://codeforces.com/contest/287/submission/46199483
[03]	CF-Round 254:	http://codeforces.com/contest/445/submission/46203904
[04]	CF-Round 286:	http://codeforces.com/contest/505/submission/29098890
[05]	CF-Round 291:	http://codeforces.com/contest/514/submission/30744275
[06]	CF-Round 297:	http://codeforces.com/contest/525/submission/46205400
[07]	CF-Round 305:	http://codeforces.com/contest/548/submission/46205666
[08]	CF-Round 329:	http://codeforces.com/contest/593/submission/46636175
[09]	CF-Round 384:	http://codeforces.com/contest/743/submission/46637116
[10]	CF-Round 180:	http://codeforces.com/contest/298/submission/46573148
[11]	CF-Round 185:	http://codeforces.com/contest/312/submission/46572319
[12]	CF-Round 193:	http://codeforces.com/contest/332/submission/46637673



### **Codeforces - String**





[13]	CF-Round 328:	http://codeforces.com/problemset/problem/592/A
[14]	CF-Round 241:	http://codeforces.com/problemset/problem/416/A
[15]	CF-Round 250:	http://codeforces.com/problemset/problem/437/A
[16]	CF-Round 361:	http://codeforces.com/problemset/problem/689/A
[17]	CF-Round 212:	http://codeforces.com/problemset/problem/362/A
[18]	CF-Round 300:	http://codeforces.com/problemset/problem/538/A
[19]	CF-Round 306:	http://codeforces.com/problemset/problem/550/A
[20]	CF-Round 230:	http://codeforces.com/problemset/problem/393/A
[21]	CF-Round 231:	http://codeforces.com/problemset/problem/394/A
[22]	CF-Round 293:	http://codeforces.com/problemset/problem/518/A

### **Codeforces - String Solutions**





[13]	CF-Round 328:	http://codeforces.com/contest/592/submission/46635376
[14]	CF-Round 241:	http://codeforces.com/contest/416/submission/46203588
[15]	CF-Round 250:	http://codeforces.com/contest/437/submission/46203803
[16]	CF-Round 361:	http://codeforces.com/contest/689/submission/46636622
[17]	CF-Round 212:	http://codeforces.com/contest/362/submission/46638501
[18]	CF-Round 300:	http://codeforces.com/contest/538/submission/46205477
[19]	CF-Round 306:	http://codeforces.com/contest/550/submission/29097452
[20]	CF-Round 230:	http://codeforces.com/contest/393/submission/46884349
[21]	CF-Round 231:	http://codeforces.com/contest/394/submission/46884568
[22]	CF-Round 293:	http://codeforces.com/contest/518/submission/29098636







- ✓ Section 1: Basic Operator
- ✓ Section 2: Condition
- ✓ Section 3: Loop
- ✓ Section 4: String

Section 5: List



### **Codeforces - List**





[01]	CF-Round 325:	http://codeforces.com/problemset/problem/586/A
[02]	CF-Round 336:	http://codeforces.com/problemset/problem/608/A
[03]	CF-Round 373:	http://codeforces.com/problemset/problem/719/A
[04]	CF-Round 113:	http://codeforces.com/problemset/problem/166/A
[05]	CF-Round 137:	http://codeforces.com/problemset/problem/222/A
[06]	CF-Round 147:	http://codeforces.com/problemset/problem/237/A
[07]	CF-Round 153:	http://codeforces.com/problemset/problem/252/A
[80]	CF-Round 159:	http://codeforces.com/problemset/problem/257/A
[09]	CF-Round 181:	http://codeforces.com/problemset/problem/300/A
[10]	CF-Round 191:	http://codeforces.com/problemset/problem/327/A
[11]	CF-Round 202:	http://codeforces.com/problemset/problem/349/A
[12]	CF-Round 207:	http://codeforces.com/problemset/problem/357/A
[13]	CF-Round 218:	http://codeforces.com/problemset/problem/371/A
[14]	CF-Round 248:	http://codeforces.com/problemset/problem/433/A

#### **Codeforces - List Solutions**





[01]	CF-Round 325:	http:/	/codeforces.com	/contest	/586	/submission	/46358334	
			•		•			

[02] CF-Round 336: <a href="http://codeforces.com/contest/608/submission/46358084">http://codeforces.com/contest/608/submission/46358084</a>

[03] CF-Round 373: <a href="http://codeforces.com/contest/719/submission/30759018">http://codeforces.com/contest/719/submission/30759018</a>

[04] CF-Round 113: <a href="http://codeforces.com/contest/166/submission/46587991">http://codeforces.com/contest/166/submission/46587991</a>

[05] CF-Round 137: <a href="http://codeforces.com/contest/222/submission/46577222">http://codeforces.com/contest/222/submission/46577222</a>

[06] CF-Round 147: <a href="http://codeforces.com/contest/237/submission/30756643">http://codeforces.com/contest/237/submission/30756643</a>

[07] CF-Round 153: <a href="http://codeforces.com/contest/252/submission/46354171">http://codeforces.com/contest/252/submission/46354171</a>

[08] CF-Round 159: <a href="http://codeforces.com/contest/257/submission/46354048">http://codeforces.com/contest/257/submission/46354048</a>

[09] CF-Round 181: <a href="http://codeforces.com/contest/300/submission/46573081">http://codeforces.com/contest/300/submission/46573081</a>

[10] CF-Round 191: http://codeforces.com/contest/327/submission/30697542

[11] CF-Round 202: <a href="http://codeforces.com/contest/349/submission/30784844">http://codeforces.com/contest/349/submission/30784844</a>

[12] CF-Round 207: <a href="http://codeforces.com/contest/357/submission/46514303">http://codeforces.com/contest/357/submission/46514303</a>

[13] CF-Round 218: <a href="http://codeforces.com/contest/371/submission/46352976">http://codeforces.com/contest/371/submission/46352976</a>

[14] CF-Round 248: <a href="http://codeforces.com/contest/433/submission/46483593">http://codeforces.com/contest/433/submission/46483593</a>



#### **Codeforces - List**

[25] **CF-Round** 335:

[26] **CF-Round 398**:

[27] **CF-Round 155**:

[28] CF-Round 199:





[13] Ci Rodiid Eoo.	neep. / / code for ces. com/ problemset/ problem/ 130/11
[16] CF-Round 269:	http://codeforces.com/problemset/problem/471/A
[17] <b>CF-Round 282</b> :	http://codeforces.com/problemset/problem/495/A
[18] CF-Round 288:	http://codeforces.com/problemset/problem/508/A
[19] CF-Round 311:	http://codeforces.com/problemset/problem/557/A
[20] CF-Round 312:	http://codeforces.com/problemset/problem/558/A
[21] CF-Round 316:	http://codeforces.com/problemset/problem/570/A
[22] CF-Round 318:	http://codeforces.com/problemset/problem/574/A
[23] CF-Round 331:	http://codeforces.com/problemset/problem/596/A
[24] CF-Round 333:	http://codeforces.com/problemset/problem/602/A

http://codeforces.com/problemset/problem/606/A

http://codeforces.com/problemset/problem/767/A

http://codeforces.com/problemset/problem/254/A

http://codeforces.com/problemset/problem/342/A

[15] CF-Round 260: http://codeforces.com/problemset/problem/456/A

#### **Codeforces - List Solutions**





[15]	CF-Round 260:	http:/	/codeforces.com	/contest/456	/submission	/30759469	
				_	-		

[16] CF-Round 269: <a href="http://codeforces.com/contest/471/submission/30786200">http://codeforces.com/contest/471/submission/30786200</a>

[17] CF-Round 282: <a href="http://codeforces.com/contest/495/submission/45915425">http://codeforces.com/contest/495/submission/45915425</a>

[18] CF-Round 288: <a href="http://codeforces.com/contest/508/submission/46470490">http://codeforces.com/contest/508/submission/46470490</a>

[19] CF-Round 311: <a href="http://codeforces.com/contest/557/submission/46059818">http://codeforces.com/contest/557/submission/46059818</a>

[20] CF-Round 312: <a href="http://codeforces.com/contest/558/submission/46358719">http://codeforces.com/contest/558/submission/46358719</a>

[21] CF-Round 316: <a href="http://codeforces.com/contest/570/submission/30784653">http://codeforces.com/contest/570/submission/30784653</a>

[22] CF-Round 318: <a href="http://codeforces.com/contest/574/submission/46313063">http://codeforces.com/contest/574/submission/46313063</a>

[23] CF-Round 331: <a href="http://codeforces.com/contest/596/submission/46638954">http://codeforces.com/contest/596/submission/46638954</a>

[24] CF-Round 333: http://codeforces.com/contest/602/submission/46358262

[25] CF-Round 335: <a href="http://codeforces.com/contest/606/submission/46635018">http://codeforces.com/contest/606/submission/46635018</a>

[26] CF-Round 398: <a href="http://codeforces.com/contest/767/submission/46639492">http://codeforces.com/contest/767/submission/46639492</a>

[27] CF-Round 155: <a href="http://codeforces.com/contest/254/submission/46821075">http://codeforces.com/contest/254/submission/46821075</a>

[28] CF-Round 199: <a href="http://codeforces.com/contest/342/submission/46572141">http://codeforces.com/contest/342/submission/46572141</a>



#### **Codeforces - List**





[29]	CF-Round 201:	http://codeforces.com/problemset/problem/347/A
[30]	CF-Round 203:	http://codeforces.com/problemset/problem/350/A

[31] CF-Round 205: <a href="http://codeforces.com/problemset/problem/353/A">http://codeforces.com/problemset/problem/353/A</a>

[32] CF-Round 264: <a href="http://codeforces.com/problemset/problem/463/A">http://codeforces.com/problemset/problem/463/A</a>

[33] CF-Round 278: <a href="http://codeforces.com/problemset/problem/489/A">http://codeforces.com/problemset/problem/489/A</a>

[34] CF-Round 390: <a href="http://codeforces.com/problemset/problem/754/A">http://codeforces.com/problemset/problem/754/A</a>

[35] CF-Round 187: <a href="http://codeforces.com/problemset/problem/315/A">http://codeforces.com/problemset/problem/315/A</a>

[36] CF-Round 208: <a href="http://codeforces.com/problemset/problem/358/A">http://codeforces.com/problemset/problem/358/A</a>

[37] CF-Round 229: <a href="http://codeforces.com/problemset/problem/390/A">http://codeforces.com/problemset/problem/390/A</a>

[38] CF-Round 232: <a href="http://codeforces.com/problemset/problem/397/A">http://codeforces.com/problemset/problem/397/A</a>

[39] CF-Round 233: <a href="http://codeforces.com/problemset/problem/399/A">http://codeforces.com/problemset/problem/399/A</a>

[40] CF-Round 184: <a href="http://codeforces.com/problemset/problem/305/A">http://codeforces.com/problemset/problem/305/A</a>

[41] CF-Round 245: <a href="http://codeforces.com/problemset/problem/430/A">http://codeforces.com/problemset/problem/430/A</a>

[42] CF-Round 116: <a href="http://codeforces.com/problemset/problem/180/A">http://codeforces.com/problemset/problem/180/A</a>

#### **Codeforces - List Solutions**







CF-Round 203: http://codeforces.com/contest/350/submission/46571651

CF-Round 205: http://codeforces.com/contest/353/submission/46515167

CF-Round 264: http://codeforces.com/contest/463/submission/46481536

http://codeforces.com/contest/489/submission/46481209 CF-Round 278:

CF-Round 390: http://codeforces.com/contest/754/submission/46355230

CF-Round 187: http://codeforces.com/contest/315/submission/46353407

http://codeforces.com/contest/358/submission/46514151 CF-Round 208:

CF-Round 229: http://codeforces.com/contest/390/submission/46884230

CF-Round 232: http://codeforces.com/contest/397/submission/46884716

CF-Round 233: http://codeforces.com/contest/399/submission/46884990

CF-Round 184: http://codeforces.com/contest/305/submission/46642256

CF-Round 245: http://codeforces.com/contest/430/submission/46817243

CF-Round 116: http://codeforces.com/contest/180/submission/46822069





- ✓ Section 1: Basic Operator
- ✓ Section 2: Condition
- ✓ Section 3: Loop
- ✓ Section 4: String
- ✓ Section 5: List



