



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

Valeo



THE AMERICAN
UNIVERSITY IN CAIRO



sw.eng.MohamedAyman@gmail.com



facebook.com/cs.MohamedAyman



linkedin.com/in/cs-MohamedAyman



github.com/cs-MohamedAyman



codeforces.com/profile/Mohamed_Ayman



Codeforces Online Judge - Phase 3 GYM Contests



Lecture Agenda

We will discuss in this lecture
the following topics

- 1- Codeforces GYM Contests *** I [25 contests]
 - 2- Codeforces GYM Contests *** II [15 contests]
 - 3- GYM Codeforces Contests *** III [30 contests]
 - 4- GYM Codeforces Contests *** IV [30 contests]
 - 5- GYM Codeforces Contests *** V [30 contests]
-



Let's
STARTUP

Lecture Agenda



Section 1: Codeforces GYM Contests *** I

Section 2: Codeforces GYM Contests *** II

Section 3: Codeforces GYM Contests *** III

Section 4: Codeforces GYM Contests *** IV

Section 5: Codeforces GYM Contests *** V



Codeforces GYM Contests *** I



[01] 2011-2012 Wroclaw Short Training Contest (contest 7)

<https://codeforces.com/gym/100048>

[02] 2011-2012 Wroclaw Short Training Contest (contest 8)

<https://codeforces.com/gym/100049>

[03] Edinburgh Competition 2019

<https://codeforces.com/gym/102416>

[04] 2015 Facebook Hacker Cup, Round 1

<https://codeforces.com/gym/100579>

[05] 2010 Codeforces Beta Round #1 (training)

<https://codeforces.com/gym/100001>

[06] 2012-2013 **Тренировка СПбГУ В #1**

<https://codeforces.com/gym/100070>

[07] 2018 Facebook Hacker Cup, Qualification Round

<https://codeforces.com/gym/101859>

[08] 2017 Facebook Hacker Cup, Qualification Round

<https://codeforces.com/gym/101222>

[09] 2016 Facebook Hacker Cup, Qualification Round

<https://codeforces.com/gym/100869>

[10] A20J Code Battle Final

<https://codeforces.com/gym/101604>

[11] 2017 Spring Waterloo ACM Local Contest

<https://codeforces.com/gym/101431>

[12] 2017 PSUT Coding Marathon

<https://codeforces.com/gym/101401>

Codeforces GYM Contests *** I



[13] 2017 Bangladesh National High School Programming Contest, NHSPC 2017	https://codeforces.com/gym/101353
[14] 2011-2012 Waterloo Local Contest, 19 June, 2011	https://codeforces.com/gym/100009
[15] 2012-2013 Waterloo Local Contest, 13 October, 2012	https://codeforces.com/gym/100169
[16] 2020 Ateneo de Manila University DISCS PrO HS Division	https://codeforces.com/gym/102556
[17] Hanoi final contest	https://codeforces.com/gym/102458
[18] Fall 2019 ICPC-style Waterloo Local Contest	https://codeforces.com/gym/102367
[19] 2018 Battle of Brains	https://codeforces.com/gym/102062
[20] 2019 DISCS PrO High School Division	https://codeforces.com/gym/102051
[21] Procon 2016	https://codeforces.com/gym/101059
[22] Hello 2015 (Div.2)	https://codeforces.com/gym/100571
[23] Local Contest	https://codeforces.com/gym/100004
[24] 2016-2017 ACM-ICPC Pacific Northwest Regional Contest (Div. 2)	https://codeforces.com/gym/101291



Lecture Agenda



✓ Section 1: Codeforces GYM Contests *** I

Section 2: Codeforces GYM Contests *** II

Section 3: Codeforces GYM Contests *** III

Section 4: Codeforces GYM Contests *** IV

Section 5: Codeforces GYM Contests *** V



Codeforces GYM Contests *** II



[01] 2017-2018 ACM-ICPC Pacific Northwest Regional Contest (Div. 2)

<https://codeforces.com/gym/101652>

[02] 2017 ACM Amman Collegiate Programming Contest

<https://codeforces.com/gym/101498>

[03] 2015 ACM Arabella Collegiate Programming Contest

<https://codeforces.com/gym/100676>

[04] JU Flash Contest

<https://codeforces.com/gym/102035>

[05] 2018 PSUT Coding Marathon

<https://codeforces.com/gym/101798>

[06] 2017 JUST Programming Contest 2.0

<https://codeforces.com/gym/101343>

[07] Bangladesh Olympiad in Informatics 2016

<https://codeforces.com/gym/101212>

[18] 2015 PSUT Coding Marathon

<https://codeforces.com/gym/100687>

[19] 2014 Winter Programming School, Kharkiv, day 4. Junior league

<https://codeforces.com/gym/100376>

[10] UBC Programming Contest 2019 (UBCPC 2019)

<https://codeforces.com/gym/102365>

[11] Southern and Volga Russia Qualifier 2019-2020

<https://codeforces.com/gym/102348>

[12] Semana i 2018

<https://codeforces.com/gym/101917>

[13] 2018-2019 ACM-ICPC, NEERC, Southern Subregional Contest, Qualification Stage

<https://codeforces.com/gym/101911>

[14] 2018 JUST Programming Contest 1.0

<https://codeforces.com/gym/101778>

[15] 2016 PSUT Coding Marathon

<https://codeforces.com/gym/100989>



Lecture Agenda



✓ Section 1: Codeforces GYM Contests *** I

✓ Section 2: Codeforces GYM Contests *** II

Section 3: Codeforces GYM Contests * III**

Section 4: Codeforces GYM Contests *** IV

Section 5: Codeforces GYM Contests *** V



Codeforces GYM Contests *** III



- [01] 2018-2019 ACM-ICPC Pacific Northwest Regional Contest (Div. 1)
- [02] ACM ICPC, Arabella Collegiate Programming Contest (2018)
- [03] ACM ICPC, Amman Collegiate Programming Contest (2018)
- [04] ACM ICPC, Damascus University Collegiate Programming Contest(2018)
- [05] 2017 ACM Arabella Collegiate Programming Contest
- [06] 2016-2017 ACM-ICPC, Egyptian Collegiate Programming Contest (ECPC 16)
- [07] 2015-2016 ACM-ICPC Southwestern Europe Regional Contest (SWERC 15)
- [08] 2016 ACM Amman Collegiate Programming Contest
- [09] 2015 ACM Syrian Collegiate Programming Contest
- [10] 2015-2016 ACM ICPC Baltic Selection Contest
- [11] 2014-2015 ACM-ICPC Southwestern Europe Regional Contest (SWERC 14)
- [12] 2015 ACM Amman Collegiate Programming Contest
- [13] 2004-2005 ACM-ICPC East Central North America Regional Contest (ECNA 2004)
- [14] 2014 KTU ACM ICPC Qualification Round
- [15] ACM ICPC, Tishreen Collegiate Programming Contest (2017)

<https://codeforces.com/gym/101982>

<https://codeforces.com/gym/101972>

<https://codeforces.com/gym/101810>

<https://codeforces.com/gym/101808>

<https://codeforces.com/gym/101350>

<https://codeforces.com/gym/101147>

<https://codeforces.com/gym/101128>

<https://codeforces.com/gym/101102>

<https://codeforces.com/gym/101086>

<https://codeforces.com/gym/100796>

<https://codeforces.com/gym/100783>

<https://codeforces.com/gym/100712>

<https://codeforces.com/gym/100651>

<https://codeforces.com/gym/100495>

<https://codeforces.com/gym/101915>

Codeforces GYM Contests *** III



- [16] 2018 ACM-ICPC, Universidad Nacional de Colombia Programming Contest
- [17] 2008-2009 ACM-ICPC, NEERC, Northern Subregional Contest
- [18] 2010-2011 ACM-ICPC, NEERC, Northern Subregional Contest
- [19] 2013-2014 ACM-ICPC Brazil Subregional Programming Contest
- [20] 2017 ACM-ICPC, Universidad Nacional de Colombia Programming Contest
- [21] 2013-2014 CT S01E10: 2013 ACM-ICPC ECPC (ECPC 2013)
- [22] 2014-2015 ACM-ICPC Pacific Northwest Regional Contest (Div. 2)
- [23] 2014 Nordic Collegiate Programming Contest
- [24] 2014 Syrian Collegiate Programming Contest (SCPC 14)
- [25] 2009-2010 ACM ICPC Southwestern European Regional Programming Contest
- [26] 2013 KTU ACM ICPC Qualification Round
- [27] UFBA Practice Session for Brazilian ICPC Regionals -2018
- [28] 2015 AlBaath Collegiate Programming Contest
- [29] 2015 Tishreen Collegiate Programming Contest
- [30] 2019 ICPC Malaysia National

<https://codeforces.com/gym/101845>

<https://codeforces.com/gym/100623>

<https://codeforces.com/gym/100610>

<https://codeforces.com/gym/101473>

<https://codeforces.com/gym/101466>

<https://codeforces.com/gym/100283>

<https://codeforces.com/gym/101653>

<https://codeforces.com/gym/100502>

<https://codeforces.com/gym/100500>

<https://codeforces.com/gym/102470>

<https://codeforces.com/gym/100482>

<https://codeforces.com/gym/101962>

<https://codeforces.com/gym/100947>

<https://codeforces.com/gym/100935>

<https://codeforces.com/gym/102219>



Lecture Agenda



✓ Section 1: Codeforces GYM Contests *** I

✓ Section 2: Codeforces GYM Contests *** II

✓ Section 3: Codeforces GYM Contests *** III

Section 4: Codeforces GYM Contests * IV**

Section 5: Codeforces GYM Contests *** V



Codeforces GYM Contests *** IV



- [01] 2015 HIAST Collegiate Programming Contest
- [02] 2019, XII Samara Regional Intercollegiate Programming Contest
- [03] 2018, XI Samara Regional Intercollegiate Programming Contest
- [04] 2017, X Samara Regional Intercollegiate Programming Contest
- [05] 2016, IX Samara Regional Intercollegiate Programming Contest
- [06] 2015, Samara SAU ACM ICPC Quarterfinal Qualification Contest
- [07] 2015, VIII Samara Regional Intercollegiate Programming Contest
- [08] 2014, VII Samara Regional Intercollegiate Programming Contest
- [09] 2014, Samara SAU ACM ICPC Quarterfinal Qualification Contest
- [10] 2013, VI Samara Regional Intercollegiate Programming Contest
- [11] 2013, Samara SAU ACM ICPC Quarterfinal Qualification Contest
- [12] 2012, Samara SAU ACM ICPC Quarterfinal Qualification Contest
- [13] 2012, V Samara Regional Intercollegiate Programming Contest
- [14] 2016, Samara University ACM ICPC Quarterfinal Qualification Contest
- [15] 2018 ECNU Campus Invitational Contest

<https://codeforces.com/gym/100952>

<https://codeforces.com/gym/102215>

<https://codeforces.com/gym/101755>

<https://codeforces.com/gym/101341>

<https://codeforces.com/gym/100971>

<https://codeforces.com/gym/100812>

<https://codeforces.com/gym/100694>

<https://codeforces.com/gym/100460>

<https://codeforces.com/gym/100488>

<https://codeforces.com/gym/100187>

<https://codeforces.com/gym/100247>

<https://codeforces.com/gym/100090>

<https://codeforces.com/gym/100030>

<https://codeforces.com/gym/101149>

<https://codeforces.com/gym/101848>

Codeforces GYM Contests *** IV



[16] 2018 BACS Contest Replay

<https://codeforces.com/gym/101864>

[17] 2018-2019 XIX Open Cup, Grand Prix of Korea (Division 2)

<https://codeforces.com/gym/102058>

[18] UFPE Starters Final Try-Outs 2019

<https://codeforces.com/gym/102020>

[19] 2018 USP-ICMC

<https://codeforces.com/gym/101875>

[20] 2018 IME Tryouts

<https://codeforces.com/gym/101858>

[21] IME Starters Try-outs 2018

<https://codeforces.com/gym/101804>

[22] Tishreen-CPC 2018

<https://codeforces.com/gym/101801>

[23] 2018 Southern Russia Open Championship -XII SFU Olympiad

<https://codeforces.com/gym/101790>

[24] UFPE Starters Final Try-Outs 2018

<https://codeforces.com/gym/101628>

[25] 2017 United Kingdom and Ireland Programming Contest (UKIEPC 2017)

<https://codeforces.com/gym/101606>

[26] Higher Institute for Applied Sciences and Technology CPC 2016

<https://codeforces.com/gym/101061>

[27] ICL 2016 (GP of Tatarstan)

<https://codeforces.com/gym/100942>

[28] VIII Open Programming Championship of Kazan Federal University 2015

<https://codeforces.com/gym/100834>

[29] 2015 USP-ICMC

<https://codeforces.com/gym/100733>

[30] 2015 ICL, Finals, Div. 2

<https://codeforces.com/gym/100637>



Lecture Agenda



- ✓ Section 1: Codeforces GYM Contests *** I
- ✓ Section 2: Codeforces GYM Contests *** II
- ✓ Section 3: Codeforces GYM Contests *** III
- ✓ Section 4: Codeforces GYM Contests *** IV
- Section 5: Codeforces GYM Contests *** V**



Codeforces GYM Contests *** V



[01] KTU Programming Camp (Day 1)	https://codeforces.com/gym/100735
[02] KTU Programming Camp (Day 2)	https://codeforces.com/gym/100738
[03] KTU Programming Camp (Day 3)	https://codeforces.com/gym/100739
[04] KTU Programming Camp (Day 5)	https://codeforces.com/gym/100741
[05] 2015 Google Code Jam Qualification Round (GCJ 15 Qualification)	https://codeforces.com/gym/100662
[06] 2014 Winter Programming School, Kharkiv, day 3 (A. Shmelev). Junior league	https://codeforces.com/gym/100374
[07] 2014 Winter Programming School, Kharkiv, day 8 (Team Akai). Junior league	https://codeforces.com/gym/100382
[08] 2014 Winter Programming School, Kharkiv, day 9 (V. Nespirtny). Junior league	https://codeforces.com/gym/100384
[09] 2011-2012 Waterloo Local Contest, 24 September, 2011	https://codeforces.com/gym/100008
[10] Innopolis Open, Final round, 2015-2016	https://codeforces.com/gym/100905
[11] Innopolis Open 2019-2020, qualification, contest 1	https://codeforces.com/gym/102436
[12] Innopolis Open 2019-2020, qualification, contest 2	https://codeforces.com/gym/102461
[13] Innopolis Open, Elimination round 1, 2017-2018	https://codeforces.com/gym/101627
[14] Innopolis Open, Elimination round 2, 2017-2018	https://codeforces.com/gym/101640
[15] Innopolis Open, Second elimination round, 2018-2019	https://codeforces.com/gym/102052
[16] Innopolis Open, First elimination round, 2018-2019	https://codeforces.com/gym/102032

Codeforces GYM Contests *** V



[17] UFPE Starters Final Try-Outs 2020	https://codeforces.com/gym/102448
[18] The 2019 “Orz Panda” Cup Programming Contest	https://codeforces.com/gym/102309
[19] 2019 USP-ICMC	https://codeforces.com/gym/102302
[20] HCW 19 Team Round (ICPC format)	https://codeforces.com/gym/102279
[21] 2019 Facebook Hacker Cup, Qualification Round	https://codeforces.com/gym/102249
[22] 2019, XI Annual Programming Contest by ESCOM-IPN	https://codeforces.com/gym/102218
[23] 2019 ECNU Campus Invitational Contest	https://codeforces.com/gym/102190
[24] The 14-th BIT Campus Programming Contest	https://codeforces.com/gym/102174
[25] NCD 2019	https://codeforces.com/gym/102163
[26] 2017 Hackatari Codeathon	https://codeforces.com/gym/101257
[27] 2010-2011 VII International Zhautykov Olympiad	https://codeforces.com/gym/100147
[28] 2009-2010 VI International Zhautykov Olympiad	https://codeforces.com/gym/100143
[29] 2008-2009 V International Zhautykov Olympiad	https://codeforces.com/gym/100142
[30] 2016 USP-ICMC	https://codeforces.com/gym/101063
[31] Crypto Cup 1.0	https://codeforces.com/gym/100514
[32] 2020 UP ACM Algolympics Elimination Round	https://codeforces.com/gym/102535

Lecture Agenda



- ✓ Section 1: Codeforces GYM Contests *** I
- ✓ Section 2: Codeforces GYM Contests *** II
- ✓ Section 3: Codeforces GYM Contests *** III
- ✓ Section 4: Codeforces GYM Contests *** IV
- ✓ Section 5: Codeforces GYM Contests *** V





DO
MORE.