

Tech Time

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TECH TIME



Week #1

دورا



وَأَنْ لَّيْسَ لِلْإِنْسَانِ إِلَّا مَا سَعَى ﴿٣٩﴾ وَأَنْ سَعْيُهُ سَوْفَ يُرَى
﴿٤٠﴾ ثُمَّ يُجْزَاهُ الْجَزَاءَ الْأَوْفَى ﴿٤١﴾

إن مررت من هنا فأدع لي

اللهم صلِّ وسلِّم على نبيِّنا محمد

أهداف الأسبوع الأول

مراجعة أساسيات البرمجة وبعض القوانين الرياضية وإتقانها بلغة الـ C++ 

معرفة كيفية التعامل مع موقع Codeforces 

بعض النصائح لحل المسائل بشكل أفضل 

حل الكثير من المسائل لتأكيد الأساسيات 

Lecture (Part one)

اضغط هنا لمشاهدة الجزء الاول من محاضرة الاسبوع

Data type has min and max values to store

- **int**: -2147483648 to 2147483647
- **char**: -127 to 127
- **bool**: 0 to 1
- If you tried lower value => **underflow**
- If you tried bigger value => **overflow**
 - `int val = 2147483647 + 1;`
 - We are adding 1 more than the max value!
 - Compiler msg: **warning**: integer overflow in expression



How to Use Codeforces

اضغط على الصورة لمشاهدة الفيديو



Thinking Techniques - Approaching Problem Statement

اضغط على الصورة لمشاهدة الفيديو

Before tackling a problem you should be

- Ready / Relax
- Active as if you are in a contest
- Challenge spirit
- Don't rush / Don't panic
- Check your watch - Monitor your progress

We could think in Solving a problem as stages

- 1- Reading and correctly "understanding" problem statement
- 2- "Thinking" in a solution -> Verifying it
- 3- Coding
- 4- Debugging if necessary
- 5- Testing

Hence your overall performance depends on performance in every stage.
The more better in one of stages, the better overall performance.

Then, your practice plans must care with all the stages.

Always measure time you do for every phase, this will help you know your problems

The training must be varied and you should focus on your weaknesses.

Another dimension for performance is your speed.

Time of Practice

PROBLEM NAME

Say Hello With C++

Basic Data Types

Simple Calculator

Difference

Area of a Circle

Lecture (Part Two)

اضغط على الصورة لمشاهدة الجزء الثاني من محاضرة الاسبوع

<u>65</u>	<u>A</u>	78	N	<u>97</u>	<u>a</u>	110	n
66	B	79	O	98	b	111	o
67	C	80	P	99	c	112	p
68	D	81	Q	100	d	113	q
69	E	82	R	101	e	114	r
70	F	83	S	102	f	115	s
71	G	84	T	103	g	116	t
72	H	85	U	104	h	117	u
73	I	86	V	105	i	118	v
74	J	87	W	106	j	119	w
75	K	88	X	107	k	120	x
76	L	89	Y	108	l	121	y
77	M	90	<u>Z</u>	109	m	<u>122</u>	<u>z</u>

ICPC - Thinking Techniques - On papers Not on PC

اضغط على الصورة لمشاهدة الفيديو

```
..... THINKING - ON PAPERS NOT ON PC .....  
  
Remember the comfortable zone? When you move from Easy to medium to hard problem, you suffer more.  
The more complexity of problem, the MORE thinking you need about it.  
  
One of main problems is that coders loves the PCs and loves solving over the machine.  
In many cases, this push them to write the solution, without doing all necessary steps first (e.g. verifying idea/order)  
The mind will be bounded on PC and will keep doing "work arounds" to fix idea/code.  
  
It is much better to think on papers away of the PC. Sketch FULL idea and verify it.  
  
Same for implementation of a hard problem, you think more about code before writing it.  
  
Yourself will tell you coding on PC is faster, tell her NO, this is not easy idea/code for me.  
  
If you sketched a code/idea and later discovered a mistake in it! LEFT the machine.  
Back to paper, repeat your life cycle. NEVER to think on PC.  
  
Finally, In Real ICPC contest, Teams are of 3, with 1 pc. When you think on paper, you save team time.
```

Time of Practice

Problem

Digits Summation

Summation from 1 to N

Two numbers

Lecture (Part There)

اضغط على الصورة لمشاهدة الجزء الثالث من محاضرة الاسبوع

Selection



Time of Practice

PROBLEM NAME

[Welcome for you with
Conditions](#)

[Multiples](#)

[Max and Min](#)

[The Brothers](#)

[Capital or Small or Digit](#)

[Char](#)

[Calculator](#)

[First digit !](#)

[Coordinates of a Point](#)

[Age in Days](#)

[Interval](#)

[Sort Numbers](#)

EXTRA Practice

PROBLEM NAME

Float or int

Comparison

Mathematical
Expression

Two intervals

The last 2 digits

Hard Compare

علمكم الله ما ينفعكم .. ونفعكم بما تعلمتم .. وزادكم علما

لا تنسونا في دعواتكم ❓

Ahmed Tahooun