7 Branching Statement Lectures - Week 4 - Branching Statements - Introduction to Programming in C++ - edX_2.ts - VLC media player

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Branching Statements

Module 3 Part 2
Itay Tal

00:00 32:35

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Classifying a character

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Problem
Write a program that reads from the user a character,
and classifies it to one of the following:

- Lower case letter
- Upper case letter
- Digit
- Not alpha-numeric character

Example
Please enter a character:
D
D is an upper case letter

00:40 32:35

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Ascii Table - ASCII char...

www.asciitable.com

Dec	Hex	Oct	Html	Chr	Dec	Hex	Oct	Html	Chr	Dec	Hex	Oct	Html	Chr	Dec	Hex	Oct	Html	Chr
0	0	000	NUL	(null)	32	20	040		Space	64	40	100	@	@	96	60	140	`	`
1	1	001	SOH	(start of heading)	33	21	041	!	!	65	41	101	A	A	97	61	141	a	a
2	2	002	STX	(start of text)	34	22	042	"	"	66	42	102	B	B	98	62	142	b	b
3	3	003	ETX	(end of text)	35	23	043	#	#	67	43	103	C	C	99	63	143	c	c
4	4	004	EOT	(end of transmission)	36	24	044	$	$	68	44	104	D	D	100	64	144	d	d
5	5	005	ENQ	(enquiry)	37	25	045	%	%	69	45	105	E	E	101	65	145	e	e
6	6	006	ACK	(acknowledge)	38	26	046	&	&	70	46	106	F	F	102	66	146	f	f
7	7	007	BEL	(bell)	39	27	047	'	'	71	47	107	G	G	103	67	147	g	g
8	8	010	BS	(backspace)	40	28	050	(	(	72	48	110	H	H	104	68	150	h	h
9	9	011	TAB	(horizontal tab)	41	29	051	)	)	73	49	111	I	I	105	69	151	i	i
10	A	012	LF	(NL line feed, new line)	42	2A	052	*	*	74	4A	112	J	J	106	6A	152	j	j
11	B	013	VT	(vertical tab)	43	2B	053	+	+	75	4B	113	K	K	107	6B	153	k	k
12	C	014	FF	(NP form feed, new page)	44	2C	054	,	,	76	4C	114	L	L	108	6C	154	l	l
13	D	015	CR	(carriage return)	45	2D	055	-	-	77	4D	115	M	M	109	6D	155	m	m
14	E	016	SO	(shift out)	46	2E	056	.	.	78	4E	116	N	N	110	6E	156	n	n
15	F	017	SI	(shift in)	47	2F	057	/	/	79	4F	117	O	O	111	6F	157	o	o
16	10	020	DLE	(data link escape)	48	30	060	0	0	80	50	120	P	P	112	70	160	p	p
17	11	021	DC1	(device control 1)	49	31	061	1	1	81	51	121	Q	Q	113	71	161	q	q
18	12	022	DC2	(device control 2)	50	32	062	2	2	82	52	122	R	R	114	72	162	r	r
19	13	023	DC3	(device control 3)	51	33	063	3	3	83	53	123	S	S	115	73	163	s	s
20	14	024	DC4	(device control 4)	52	34	064	4	4	84	54	124	T	T	116	74	164	t	t
21	15	025	NAK	(negative acknowledge)	53	35	065	5	5	85	55	125	U	U	117	75	165	u	u
22	16	026	SYN	(synchronous idle)	54	36	066	6	6	86	56	126	V	V	118	76	166	v	v
23	17	027	ETB	(end of trans. block)	55	37	067	7	7	87	57	127	W	W	119	77	167	w	w
24	18	030	CAN	(cancel)	56	38	070	8	8	88	58	130	X	X	120	78	170	x	x
25	19	031	EM	(end of medium)	57	39	071	9	9	89	59	131	Y	Y	121	79	171	y	y
26	1A	032	SUB	(substitute)	58	3A	072	:	:	90	5A	132	Z	Z	122	7A	172	z	z
27	1B	033	ESC	(escape)	59	3B	073	;	;	91	5B	133	[	[	123	7B	173	{	{
28	1C	034	FS	(file separator)	60	3C	074	<	<	92	5C	134	\	\	124	7C	174			|
29	1D	035	GS	(group separator)	61	3D	075	=	=	93	5D	135	]	]	125	7D	175	}	}
30	1E	036	RS	(record separator)	62	3E	076	>	>	94	5E	136	^	^	126	7E	176	~	~
31	1F	037	US	(unit separator)	63	3F	077	?	?	95	5F	137	_	_	127	7F	177	&#127;	DEL

01:54 32:35

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Convert 24-hour to 12-hour

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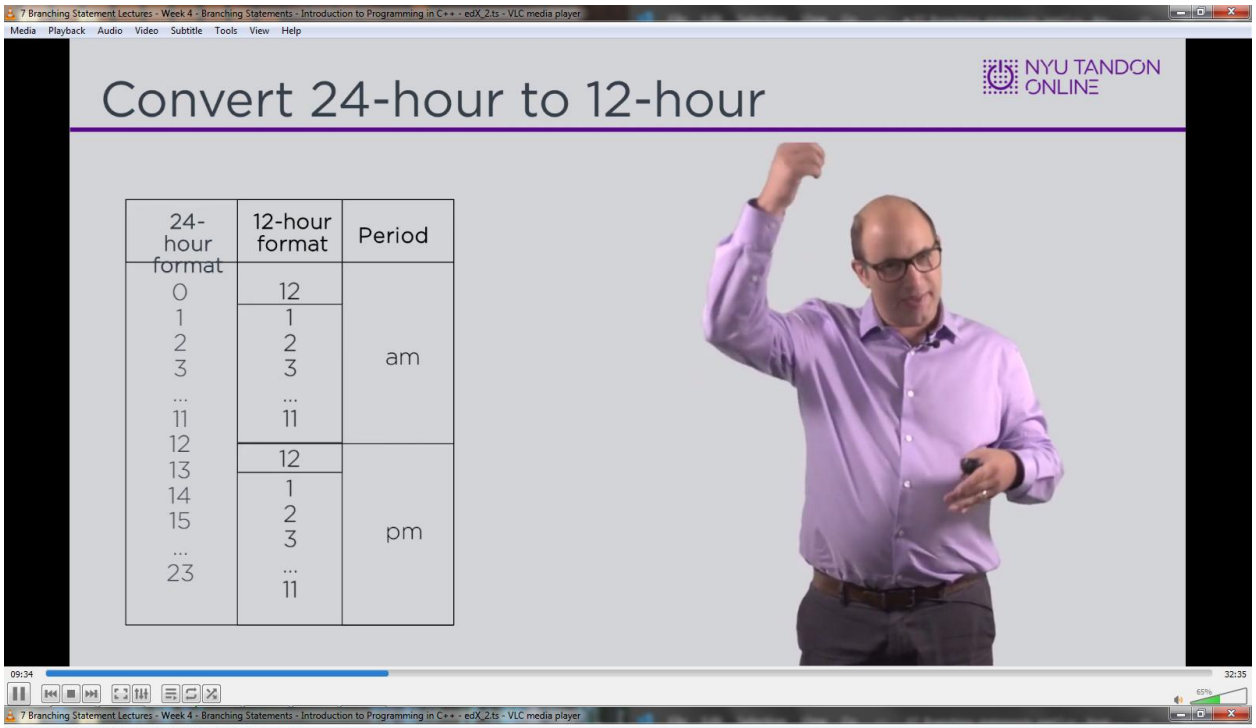
Problem

Write a program that reads from the user a time entered in a 24-hour format, and prints the equivalent time in a 12-hour format.

Example

Please enter a time in a 24-hour format:
15:37
15:37 is 3:37 pm

07:10 32:35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Convert 24-hour to 12-hour
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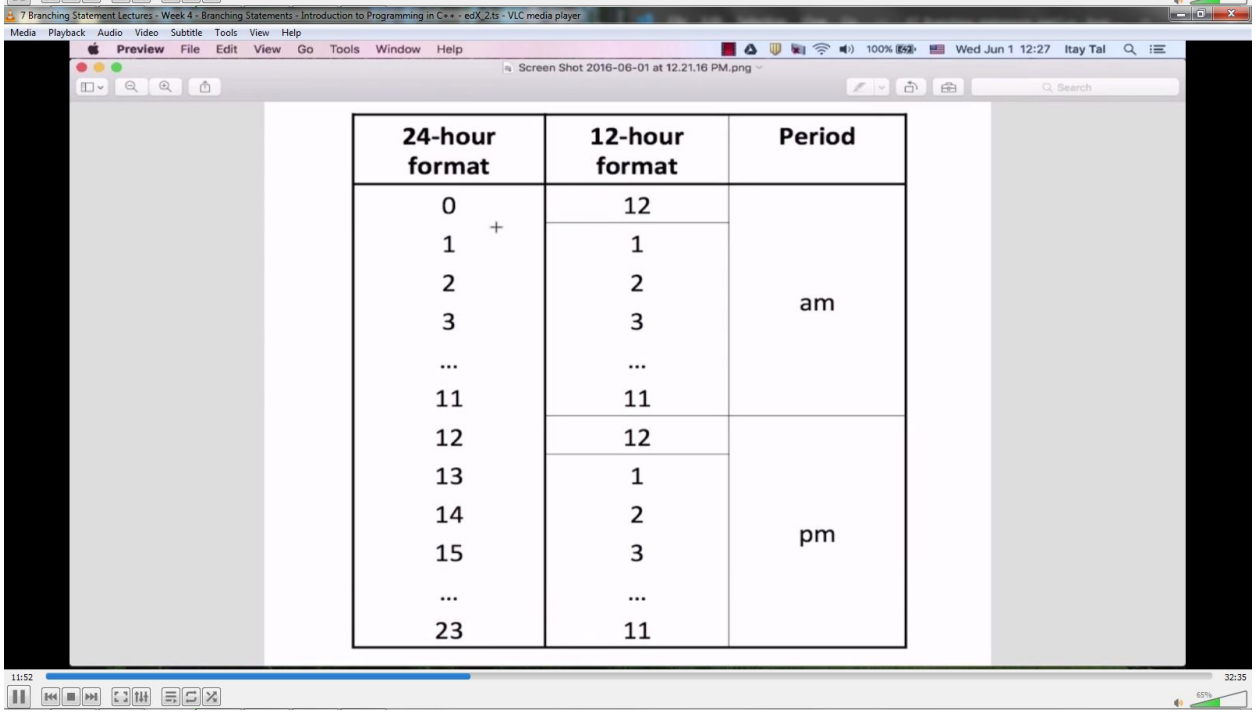
24-hour format
12-hour format
Period
0
12
1
1
2
2
3
3
...
...
11
11
am
12
12
13
1
14
2
15
3
...
...
23
11
pm
09:34
32:35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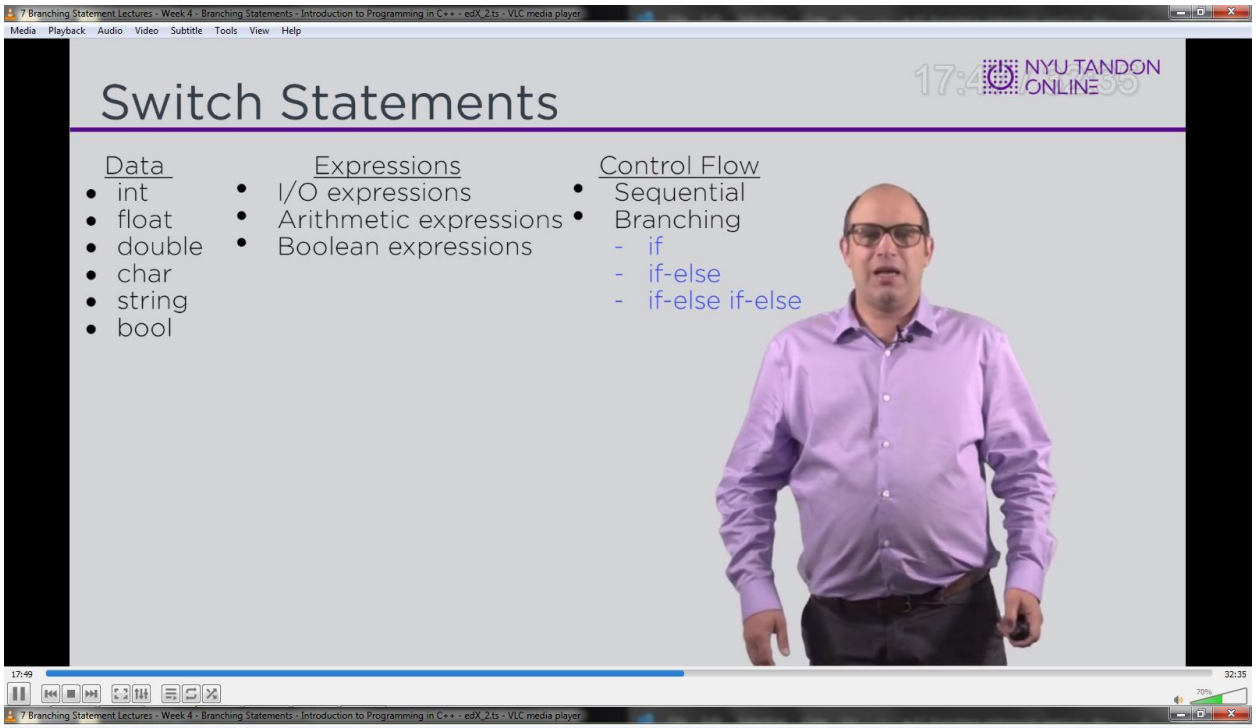
Preview File Edit View Go Tools Window Help
Wed Jun 1 12:27 Itay Tal
Screen Shot 2016-06-01 at 12.21.16 PM.png
24-hour format
12-hour format
Period
0
12
1
1
2
2
3
3
...
...
11
11
am
12
12
13
1
14
2
15
3
...
...
23
11
pm
11:52
32:35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Switch Statements
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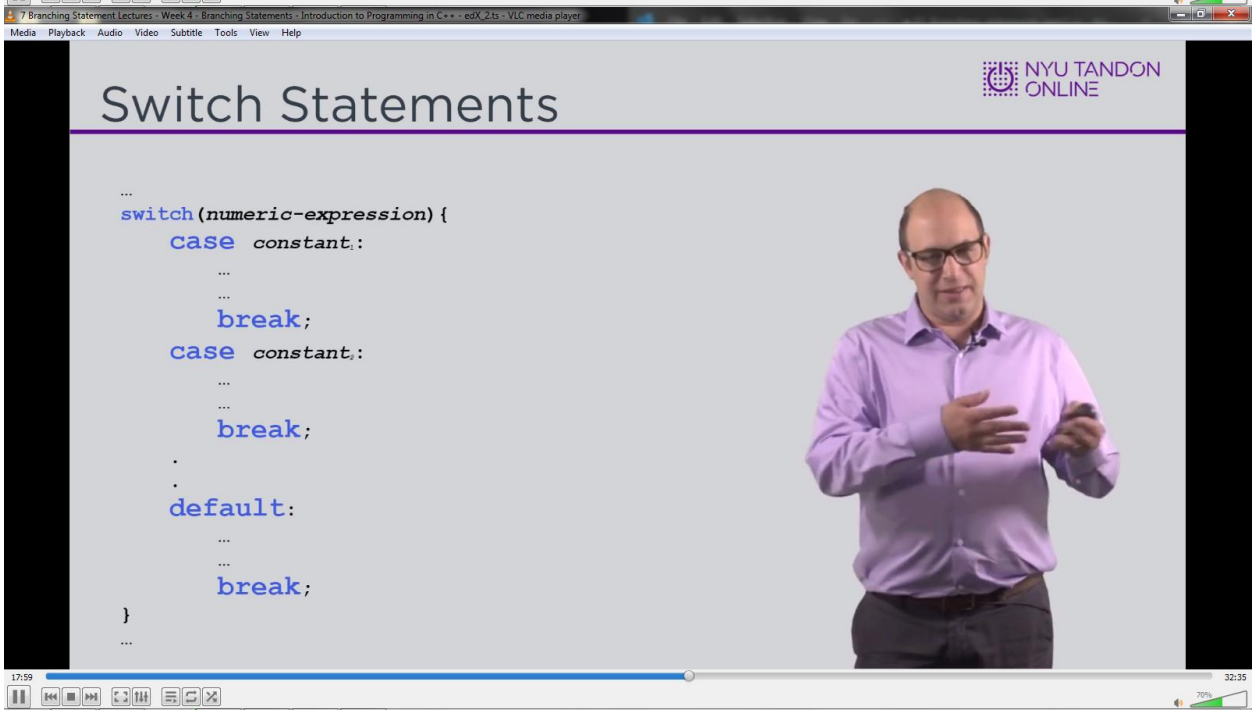
Data
int
float
double
char
string
bool
Expressions
I/O expressions
Arithmetic expressions
Boolean expressions
Control Flow
Sequential
Branching
if
if-else
if-else if-else
17:49
32:35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Switch Statements
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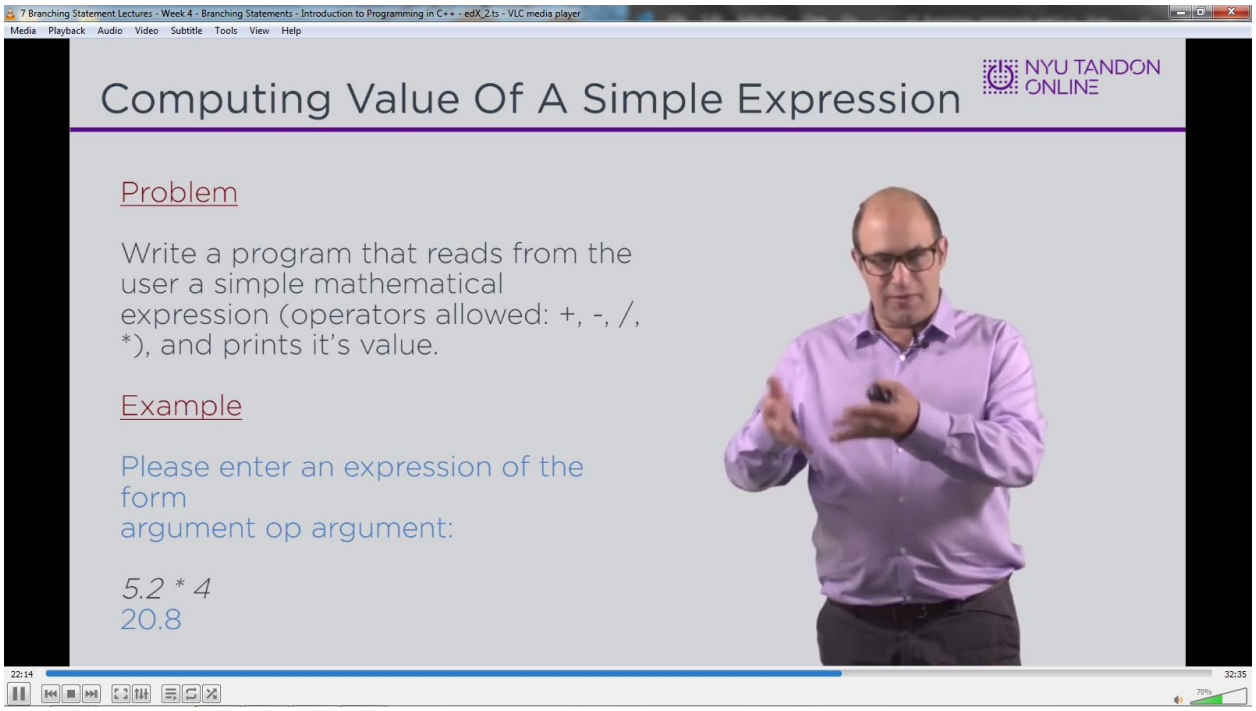
...
switch(numeric-expression){
case constant1:
...
...
break;
case constant2:
...
...
break;
.
.
default:
...
...
break;
}
...
17:59
32:35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Computing Value Of A Simple Expression
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Problem
Write a program that reads from the user a simple mathematical expression (operators allowed: +, -, /, *), and prints it's value.
Example
Please enter an expression of the form
argument op argument:
5.2 * 4
20.8
22:14
32:35

Switch Statement – Syntactic Notes

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- The ***numeric-expression*** must be of type **int** (**short int**, **int**, or **long int**), **char** or **bool**
- The **case** labels must be constants (literals or named constants).
- If no **case** label matches the value of ***numeric-expression***, control branches to the **default** label (If there is no **default** label than control passes to the statement following the entire switch statement)
- After a branch is taken, control proceeds sequentially until either **break** or the end of the switch statement occurs. That's why there is usually a **break** at the end of each branch