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Spaces for my replies to your posts!



Intro to Computer Science

Grade 11 – Pre AP
Thread 1, Day 10

Russell Gordon, Lakefield College School

Submit attendance!



Thread 1, Day 10

Agenda

- Optionals: Summary
- Playground: Base 2 to base 10 conversion
- Working Period / Homework
 - Bases 8 and 16 to base 10 on paper
 - Bases 8 and 16 to base 10 in a playground

Optionals

Summary

- If you force-unwrap an optional variable that contains a nil value, what happens?
 - Your application will crash.
- What are the benefits of using *optional binding*?
 - Gracefully handle situations where an optional contains `nil`.
- Why do the concepts of optional variables and safely unwrapping these variables exist in Swift?
 - To protect programmers from ourselves – we are forced to consider when we need to handle the absence of a value.

Playground

Base 2 to base 10 conversion

- Let us look at how to move back from binary to decimal (from base 2 to base 10)
- This will involve use of...
 - Loops
 - Strings
 - Optionals
 - Data type conversions

Base 2 to Base 10

leftmost \swarrow rightmost \nwarrow

$1011011_2 = \boxed{91}_{10}$

<u>power</u>	<u>digit</u>	<u>expression</u>
2^0	1	$2^0 \cdot 1 = 1 \cdot 1 = 1$
2^1	1	$2^1 \cdot 1 = 2 \cdot 1 = 2$
2^2	0	$2^2 \cdot 0 = 4 \cdot 0 = 0$
2^3	1	$2^3 \cdot 1 = 8 \cdot 1 = 8$
2^4	1	$2^4 \cdot 1 = 16 \cdot 1 = 16$
2^5	0	$2^5 \cdot 0 = 32 \cdot 0 = 0$
2^6	1	$2^6 \cdot 1 = 64 \cdot 1 = 64$
		$+ \quad \underline{\quad}$
		91

Working Period

Bases 8 and 16 to base 10

- Please practice...
 - Base 8 to base 10 conversions on paper
 - Base 16 to base 10 conversions on paper
 - Use the same steps shown here – only difference is the base
- Once you have practiced on paper...
 - Extend the code we wrote in class today to support conversion from base 8 or base 16 as well.
 - Do not use functions at this time – just modify the logic in the loop.
 - HINT: Consider a switch statement.

Working Period

Bases 8 and 16 to base 10

Breakout rooms...

Homework

Bases 8 and 16 to base 10

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- Once you have practiced on paper...
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 - HINT: Consider a switch statement.

Thank-you!