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| 15-110 recitation 2 |

**Recap**

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|  | * Binary numbers and data representation
* Functions: input, return value, side effects
* Graphics
* Variable Scope
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# **Reminders!**

HW-1 due Monday 9/14 @ Noon EDT!

Check-1 Grades are out!

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| Problems |

# **Algorithm Trace**

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| **Problem**  | Algorithm:Start off with a variable *result*, which is an empty string “”Based on an integer input *n*, do the following:1. if n is negative do the following
	1. add ‘A’ to result
2. if the absolute value of n mod 5 is equal to 0 (|n| % 5 == 0)
	1. add ‘B’ to result
3. if n is greater than 5
	1. add ‘C’ to result
4. if none of the above
	1. add ‘D’ to result
5. output result

What is the result when n = -5? What is the result when n = 105? What is the result when n = 3?  |

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# **Decimal -> Binary**

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| **Problem** | Convert 38 to binary using 8 bits. Convert 101 to binary using 8 bits.  |

# **Binary -> Decimal**

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| **Problem** | What is 10? What is 1010100? What is 11+1? (binary)  |

# **Fast Facts**

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| **Problem** | What are the smallest and largest integers that can be represented with 4 bits?How many bits in a byte?How can we store 18 in 4 digit binary?What is ASCII?What is Unicode? Why was it created? |

# **Function Practice**

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| **Problem** | For the following function, label each variable by its scope.time = “8:00 AM”def alarm(name): sound = “BEEP BEEP!!” print(sound, “It’s”, time, “ so get out of bed”, name, “!”)time?name?sound?Write a function *average* that takes 4 numbers as arguments and returns the average of the four numbers. Write a function *converter* that takes in an int and a string, converts the int to a string, and returns the two strings concatenated together. Write a function *introduction* that takes in a name and age and prints the message “My name is <name> and I am <age> years old”Write a function *area* that uses the *math* module, takes in a radius and a canvas of size 400 by 400, draws a circle of that radius in the center of the canvas, and returns the area of a circle. |

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