

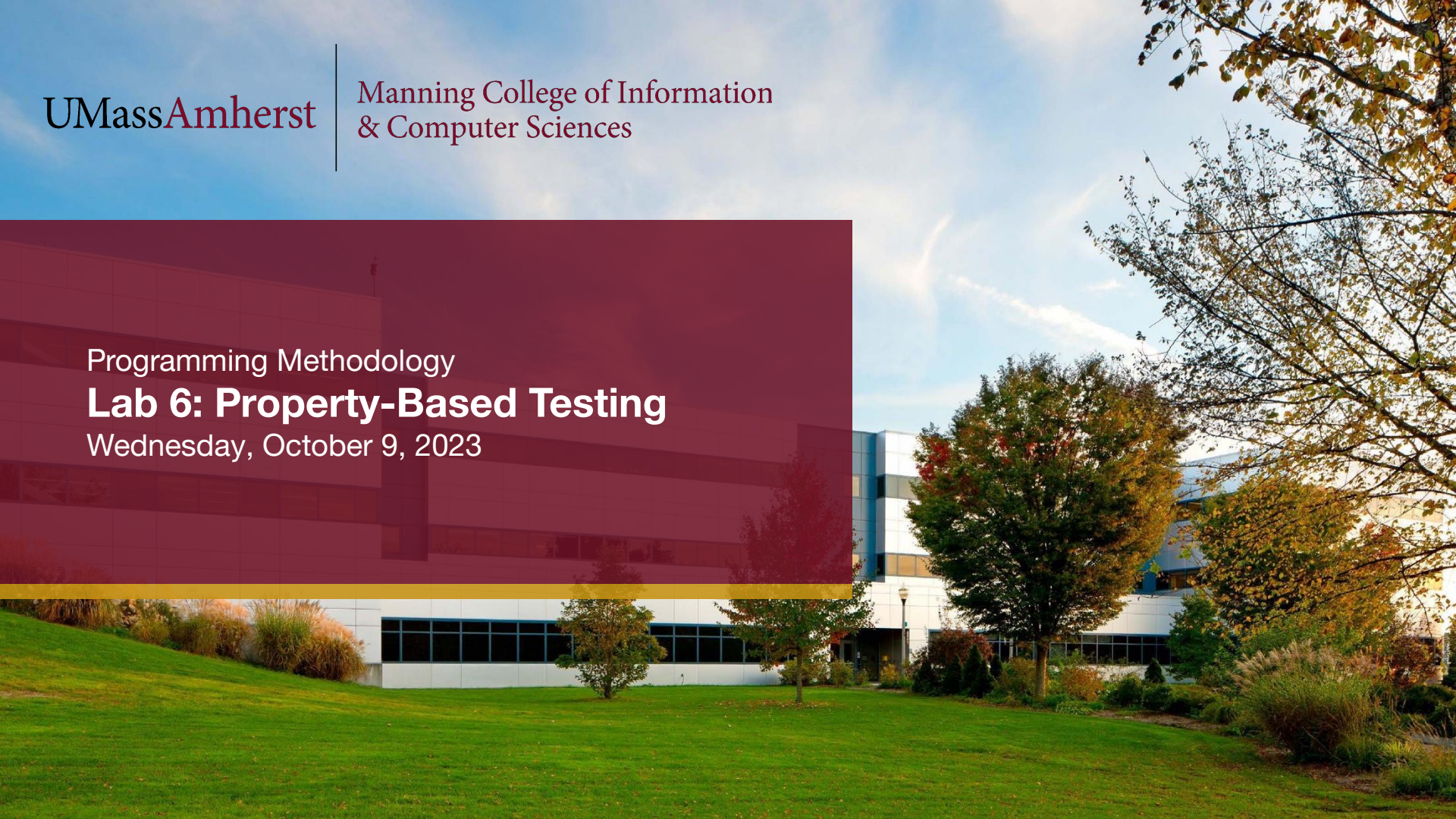
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Programming Methodology

Lab 6: Property-Based Testing

Wednesday, October 9, 2023



Property-Based Testing

Used when a problem has **more than one** right answer

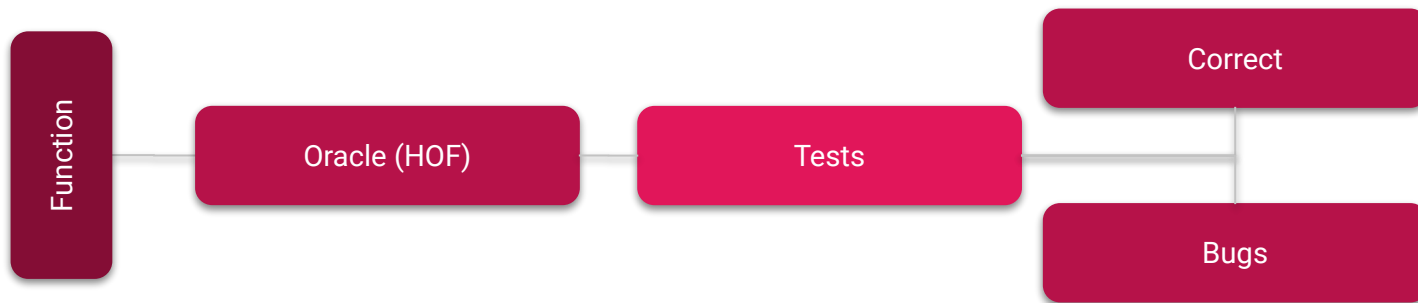
Steps to Property-Based Testing:

1. Start with a valid input to your problem
2. Run the algorithm on that input
3. Check that the result has all necessary characteristics

Oracle Functions

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Exercise: Permutations

A function **genArray**(n: number): number[][] is supposed to generate an $n \times n$ array of numbers such that each row and column is a permutation of the numbers from 0 to $n-1$.

Write an oracle that accepts the function genArray as input.

Use higher-order functions when appropriate. Try to write your implementation in $O(n^2)$.

Review Exam Questions

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With the left over time we'll go over exam questions that you all found difficult.

Suggestion: Q4 or Q6, but we can go over any you want.