

Cell Culture for New Vaccine Develop in COVID

- Lectures
 - Computing for Vaccine Development
 - Big Data, Computing Infrastructure, Services
 - **Cell Culture and Vaccine Development**
- Early Manufacturing Projects
 - Scaling Cell-based Vaccine Manufacturing
- Meeting
 - Current Impact of Computing Clouds on Vaccine
- Discussion
 - Early vaccine candidate development: computational bottlenecks



Cell Office Hours and Discussions

- Please come (you do not need any additional business card or student ID card) any given week!
 - **Week 10: 10/26/2022, 10/27/2022, 10/28/2022**
- Please inform the coordinator via email any time that will change this weekly schedule of times.
- Please email Dr. Jennifer Smith, DVM with direct phone calls if you have an emergency with your pet during the DVM weeks.



Function Basics

- Trees are getting the binary expression something like the example above

`1 + 2`

- `plus` is the function
- `1` is the input as number
- `2` is the input as number
- function as single node
have children 2 nodes
from the input



function node
single children (input)



Answering the 2nd Week Math Quiz



1. **Identify the main topic of the passage.**
 2. **Identify the main purpose of the passage.**
 3. **Identify the main argument of the passage.**
 4. **Identify the main conclusion of the passage.**
 5. **Identify the main evidence of the passage.**
 6. **Identify the main counterargument of the passage.**
 7. **Identify the main supporting detail of the passage.**
 8. **Identify the main supporting detail of the passage.**
 9. **Identify the main supporting detail of the passage.**
 10. **Identify the main supporting detail of the passage.**

The following table shows the results of the regression analysis for the dependent variable "Perceived Organizational Support" (POS). The independent variables are "Organizational Commitment" (OC) and "Organizational Identification" (OI). The table includes the regression coefficients, standard errors, t-statistics, and p-values for each variable.

| Variable | Regression Coefficient | Standard Error | t-Statistic | p-Value |
|------------------------------------|------------------------|----------------|-------------|---------|
| Organizational Commitment (OC) | 0.35 | 0.05 | 7.00 | < 0.001 |
| Organizational Identification (OI) | 0.28 | 0.04 | 7.00 | < 0.001 |
| Constant | 1.20 | 0.10 | 12.00 | < 0.001 |

The regression analysis indicates that both Organizational Commitment and Organizational Identification are significant predictors of Perceived Organizational Support. The regression coefficients are 0.35 for OC and 0.28 for OI, both with p-values less than 0.001. The constant term is 1.20, also with a p-value less than 0.001.



Thymus vulgaris

- Thymus vulgaris belongs to the **Lamiaceae** family, which is commonly known as the **mint** family.
- Thymus vulgaris is a **perennial** herb that grows up to 1 meter tall.
- Thymus vulgaris is a **herbaceous** plant with a **woody** base.
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Thymus vulgaris (Common Thyme)



Cell attached to PCIT in a broadcast

- **Cell attached to PCIT in a broadcast**
- **Cell attached to PCIT in a broadcast**
- **Cell attached to PCIT in a broadcast**
- **Cell attached to PCIT in a broadcast**
- **Cell attached to PCIT in a broadcast**



Data Types

Domain & Range

Circle: Personal Interview before you'll make level



Decision and Response System Model

Decision

- 1. **Identify the problem**
 - 1.1. **Define the problem**
- 2. **Generate alternatives**
 - 2.1. **Brainstorming**
 - 2.2. **Delphi method**
 - 2.3. **Brainstorming**
 - 2.4. **Brainstorming**
- 3. **Evaluate alternatives**
 - 3.1. **Brainstorming**
 - 3.2. **Brainstorming**
- 4. **Implement the decision**
 - 4.1. **Brainstorming**

Response

- 1. **Identify the problem**
 - 1.1. **Define the problem**
- 2. **Generate alternatives**
 - 2.1. **Brainstorming**
 - 2.2. **Delphi method**
 - 2.3. **Brainstorming**
 - 2.4. **Brainstorming**
- 3. **Evaluate alternatives**
 - 3.1. **Brainstorming**
 - 3.2. **Brainstorming**
- 4. **Implement the decision**
 - 4.1. **Brainstorming**



letter

of



Assembly

1) Integration of 20,000 neurons

2) Integration of 20,000 neurons

3) Integration of 20,000 neurons

4) Integration of 20,000 neurons

5) Integration of 20,000 neurons

Assembly

1) Integration

2) Integration

3) Integration

4) Integration

5) Integration

Why Should You
Use Functions?

Abstract

Why Use Functions? (2/2)

- They allow for **generalization** of code
- They **encapsulate** all our programs
- They allow for **incremental development** by creating more and more sophisticated things.
- Encapsulating any particular object into something known as **modules**

| | | | |
|------|----------------------------|--------|----|
| Name | DESCRIPTION: Says how many | STATUS | ID |
| | DESCRIPTION: Says how many | STATUS | |



Global Perspective: Recursion

Recursion: The Art of Solving Problems by Solving Smaller Versions of Itself

Recursion is a powerful technique for solving complex problems by breaking them down into smaller, more manageable sub-problems.

It involves a function calling itself repeatedly until it reaches a base case, which is the simplest form of the problem.

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Functions Demo!

Threats to Validity

- Internal Validity: Causal Inference
- Extraneous Factors to the Independent Variable
 - History
 - Maturity
 - Regression
 - Selection
 - Testing
 - Instrumentation
- Construct Validity
 - Internal Construct
 - External Construct
- Statistical Validity
 - Internal Statistical
 - External Statistical

Threats to Validity

