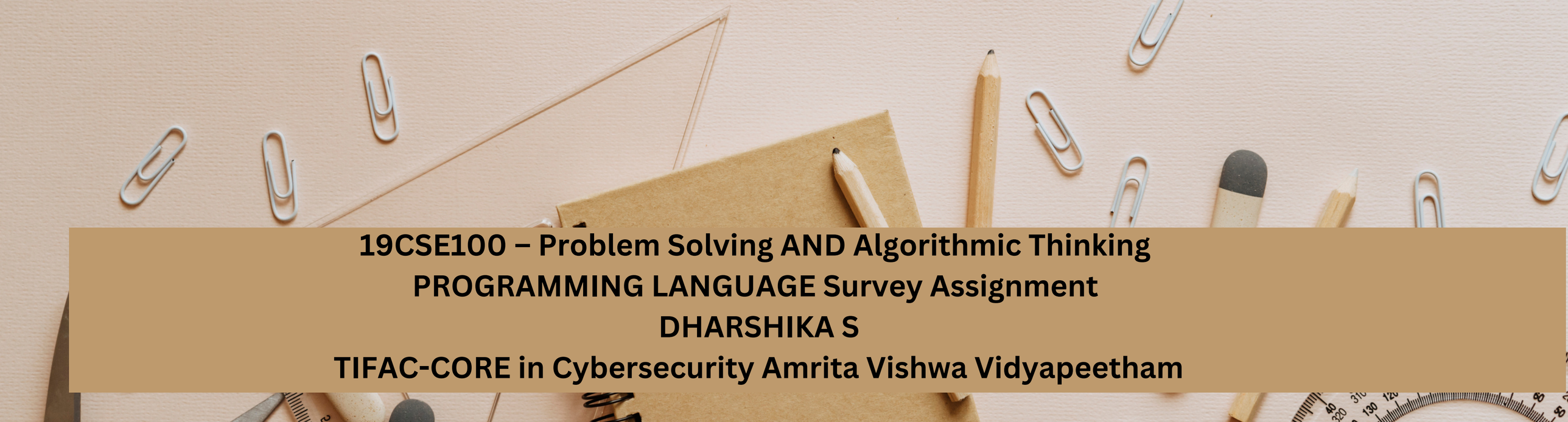
AMRITA VISHWA VIDYAPEETHAM

LET'S LEARN!

JULIA



19CSE100 – Problem Solving AND Algorithmic Thinking

PROGRAMMING LANGUAGE Survey Assignment

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TIFAC-CORE in Cybersecurity Amrita Vishwa Vidyapeetham

WELCOME TO JULIA LANGUAGE.....

TABLE OF CONTENTS

INTRODUCTION TO JULIA

"

- Julia is a high level programming language.
- Julia was designed for high performance.
- It is dynamically typed and act as a scripting language, it supports interactive use
- Its syntax are very similar to other programming languages.
- Julia was first created in 2012.

MEET JULIA DEVELOPERS AND DESIGNERS

Mr. Jeff Bezanson

Developer and Designer

Mr. Stefan Karpinski

Developer and Designer

Mr.Viral B. Shah

Developer and Designer

Mr.Alan Edelman

Designer

Paradigms

- Julia uses multiple dispatch as a paradigm, making it easy to express many object-oriented and functional programming patterns

Use with other languages

Julia is interoperable with many languages

- Julia works with other languages, it also calls C language, and with use of extra packages, e.g. for working with Python, R, Rust, C++, SQL and to work with or even compile to JavaScript.
- Julia can be compiled to binary executables using a package for it supporting all Julia features.

HELLO WORLD PROGRAM IN JULIA

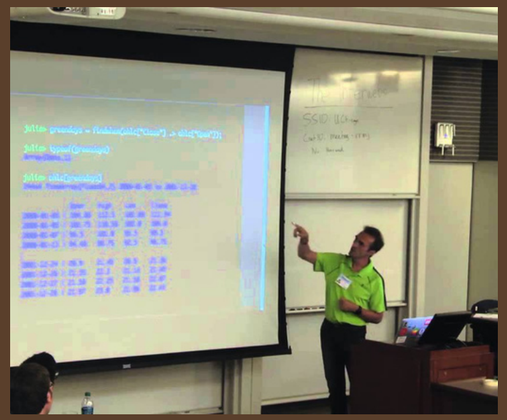
```
julia> println("HELLO WORLD")
HELLO WORLD

julia>
```

- In JULIA "println()"syntax is used to print the output or results.
- The text to be printed is given within double quotes which is quite common in most of the programming languages.
- Julia is a dynamic-typed language with a just-in-time compiler.
- This means that you don’t need to compile your program before you run it, like you would do in C++ or FORTRAN. Julia will take our code, guess types where necessary, and compile parts of code just before running it.
- We dont need to explicitly specify each type .

Real life applications of Julia

MITRE



- The Federal Reserve Bank of New York created economic models of the United States with Julia in 2015 (ported from MATLAB), and its later version 1.3 includes estimating COVID-19 shocks in 2021. [165]
- BlackRock analyzes time series using Julia. [166]
- Aviva calculates risk for insurance with Julia. [166]
- Mitre Corporation produced verification software for published election results using Julia. [167]

PROGRAMS THAT I TRIED IN JULIA

1.ADDITION OF TWO NUMBERS
2.ADDITION OF TWO ARRAYS

```
julia> a=5
5

julia> b=3
3

julia> c=a+b
8

julia> a=[1,2,3]
3-element Vector{Int64}:
 1
 2
 3

julia> b=[4,5,6]
3-element Vector{Int64}:
 4
 5
 6

julia> c=a .+b
3-element Vector{Int64}:
 5
 7
 9
```

1.USING IF TO CHECK THE SMALLEST

```
julia> a=3
3

julia> b=4
4

julia> if a<b
           println(a)
       else
           println(b)
       end
3
```

THANK YOU

by- CB.EN.U4CYS22021