**LINEAR ALGEBRA**

Laboratory No. # 1

**PYTHON FUNDAMENTALS**

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Score

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| **CRITERIA** | **Exceeds Expectations** | **Meets Expectations** | **Needs Improvement** | **Unsatisfactory** |
| Functionality  (60 points) |  |  |  |  |
| Completeness  (20 points) |  |  |  |  |
| Structure  (20 points) |  |  |  |  |

**Remarks:**

*Submitted by:*

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**Monday 7:00–10:00/ 58013**

*Submitted to*

**Engr. Maria Rizette Sayo**

Facilitator

*Date Performed:*

**15-09-2023**

*Date Submitted*

**16-09-2023**

**Objective**

In this module, we are going to establish or review our skills in Python programming. In this notebook we are going to cover:

1. Variables and Data Types
2. Operations
3. Input and Output Operations
4. Logic Control
5. Iterables
6. Functions

**Algorithm**

1. Type the main title of this activity as "Python Fundamentals”
2. On your GitHub, create a repository name Linear Algebra 58019
3. On your Colab, name your activity as Python Exercise 1.ipynb and save a copy to your GitHub repository

**Coding Activity 1**

1. Variable and Data Types

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| x = 1  a,b = 0, -1  type(x)  y = 1.0  type(y)  x = float(x)  type(x)  s,t,u = "0", '1', 'one'  type(s)  s\_int = int(s)  s\_int |

1. Arithmetic Operations

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| a,b,c,d = 2.0, -0.5, 0, -32  ### Addition  S = a+b  S  ### Subtraction  D = b-d  D  ### Multiplication  P = a\*d  P  ### Division  Q = c/a  Q |

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| ### Exponentiation  E = a\*\*b  E  ### Modulo  mod = d%a  mod |

1. Assignment Operations

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| G, H, J, K = 0, 100, 2, 2  G += a  G  H -= d  J \*= 2  J  K \*\*= 2  K |

1. Comparators

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| res\_1, res\_2, res\_3 = 1, 2.0, "1"  true\_val = 1.0  ## Equality  res\_1 == true\_val  ## Non-equality  res\_2 != true\_val  ## Inequality  t1 = res\_1 > res\_2  t2 = res\_1 < res\_2/2  t3 = res\_1 >= res\_2/2  t4 = res\_1 <= res\_2  t1 |

1. Logical

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| res\_1 == true\_val  res\_1 is true\_val  res\_1 is not true\_val  p, q = True, False  conj = p and q  conj  p, q = True, False  disj = p or q  disj  p, q = True, False  nand = not(p and q)  nand  p, q = True, False  xor = (not p and q) or (p and not q)  xor |

1. Input and Output Operations

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| print("Hello World")  cnt = 1  string = "Hello World"  print(string, ", Current run count is:", cnt)  cnt += 1  print(f"{string}, Current count is: {cnt}")  sem\_grade = 82.243564657461234  name = ""  print("Hello {}, your semestral grade is: {}".format(name, sem\_grade))  w\_pg, w\_mg, w\_fg = 0.3, 0.3, 0.4  print("The weights of your semestral grades are:\  \n\t{:.2%} for Prelims\  \n\t{:.2%} for Midterms, and\  \n\t{:.2%} for Finals.".format(w\_pg, w\_mg, w\_fg))  x = input("enter a number: ")  x  name = input("Kimi no nawa: ")  pg = input("Enter prelim grade: ")  mg = input("Enter midterm grade: ")  fg = input("Enter finals grade: ")  sem\_grade = None  print("Hello {}, your semestral grade is: {}".format(name, sem\_grade)) |

1. Looping Statements

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| ## while loops  i, j = 0, 10  while(i<=j):  print(f"{i}\t|\t{j}")  i+=1  # for(int i=0; i<10; i++){  # printf(i)  # }  i=0  for i in range(10):  print(i) |

1. Flow Control

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| ###Condition Statements  numeral1, numeral2 = 12, 12  if(numeral1 == numeral2):  print("Yey")  elif(numeral1>numeral2):  print("Hoho")  else:  print("Aww")  print("Hip hip") |

1. Functions

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| # void DeleteUser(int userid){  # delete(userid);  # }  def delete\_user (userid):  print("Successfully deleted user: {}".format(userid))    def delete\_all\_users ():  print("Successfully deleted all users") |