**Nama : Abdillah Mufki Auzan Mubin**

**NPM : 40621100046**

**TUGAS ALPRO PERTEMUAN 3**

**1.** [**1.1 The Factorial Function**](https://genap.widyatama.ac.id/course/09_chap04.html#ch004-sec002)

|  |  |
| --- | --- |
| **Python** | **Gambar** |
| def factorial(n):  if n == 0:  return 1  else:  return n \* factorial(n-1)  n=int(input("Input a number to compute the factiorial : "))  print(factorial(n)) |  |

**2.** [**1.2 Drawing an English Ruler**](https://genap.widyatama.ac.id/course/09_chap04.html#ch004-sec004)

|  |  |
| --- | --- |
| **Python** | **Gambar** |
| def draw\_line(tick\_length, tick\_label=''):  """Draw one line with given tick length (followed by optional label)."""  line = '-' \* tick\_length  if tick\_label:  line += ' ' + tick\_label  print(line)  def draw\_interval(center\_length):  """Draw tick interval based upon a central tick length."""  if center\_length > 0: # stop when length drops to 0  draw\_interval(center\_length - 1) # recursively draw top ticks  draw\_line(center\_length) # draw center tick  draw\_interval(center\_length - 1) # recursively draw bottom ticks  def draw\_ruler(num\_inches, major\_length):  """Draw English ruler with given number of inches and major tick length."""  draw\_line(major\_length, '0') # draw inch 0 line  for j in range(1, 1 + num\_inches):  draw\_interval(major\_length - 1) # draw interior ticks for inch  draw\_line(major\_length, str(j)) # draw inch j line and label  if \_\_name\_\_ == '\_\_main\_\_':  draw\_ruler(2, 4)  print('=' \* 30)  draw\_ruler(1, 5)  print('=' \* 30)  draw\_ruler(3, 3) |  |

**3.** [**1.3 Binary Search**](https://genap.widyatama.ac.id/course/09_chap04.html#ch004-sec007)

|  |  |
| --- | --- |
| **Python** | **Gambar** |
| # Binary Search in python  def binary\_search(data, target, low, high):  if low > high:  return False  else:  mid = (low + high)  if target == data[mid]:  return True  elif target < data[mid]:  return binary\_search(data, target, low, mid - 1)  else:  return binary\_search(data, target, mid + 1,high)  array = [3, 4, 5, 6, 7, 8, 9]  x = 4  result = binary\_search(array, x, 0, len(array)-1)  if result != -1:  print("Element is present at index " + str(result))  else:  print("Not found") |  |

**4.** [**1.4 File Systems**](https://genap.widyatama.ac.id/course/09_chap04.html#ch004-sec008)

|  |  |
| --- | --- |
| **Python** | **Gambar** |
| import os  def diskUsage(path):  total = os.path.getsize(path)  if os.path.isdir(path):  for filename in os.listdir(path):  total += diskUsage(os.path.join(  path,filename))    print ( '{0:<7}'.format(total), path)  return (total)    if \_\_name\_\_ == '\_\_main\_\_':  diskUsage('C:/Users/Mufkimustache/  latihan.txt') |  |