```
#Annuity Immediate
import sys
err = "none"
#Function to check if term is valid
    is_integer_num(n):
           err
       :
        float(n)
           ValueError:
        err = "term"
               False
       (float(n)).is_integer()     float(n) > 0:
               True
        :
        err = "term"
               False
#function to check if interest is valid
    is_in_range(n):
           err
       :
        float(n)
           ValueError:
        err = "rate"
               False
       -1 <= float(n) < 1:
               True
        :
        err = "rate"
               False
#Function to check if input is valid
    check_input(t,i):
       is_integer_num(t)     is_in_range(i):
               True
        :
             ("Invalid input: " + err)
        quit()
#Function to determine output type
    output_type(n):
       n == 3:
               True
       n == 1:
               False
        :
             ("Incorrect Number of Arguments Passed")
        quit()
#Function to calculate Present Value
    PV(t,i):
       i == 0:
               "{0:0.4f}".format(t,4)
        :
               "{0:0.4f}".format((1-(1+i)**-t)/i,4)
#Function to calculate Future Value
    FV(t,i):
       i == 0:
               "{0:0.4f}".format(t,4)
        :
               "{0:0.4f}".format((((1+i)**t)-1)/i,4)
#Function for simple output
    Simple(t,i):
         ("\t\tAnnuity Immediate")
         ("\tterm interest\t    PV\t      FV")
    present_value = str(PV(float(t),float(i)))
    future_value = str(FV(float(t),float(i)))
         ("\t   " + t + "      " + i + "\t" + present_value + "\t  " + future_value)
```

```
    Complex():
         ("\t\t\t\tPresent Value of Annuity Immediate")
    string = "  "
        i    range(1,10):
        number_as_string = str(i) + "%"
        string += number_as_string.rjust(10)
         (string)
    times = [1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,30,40,50]
        i    times:
        int_as_string = str(i)
        Row = int_as_string.rjust(2)
            j    range(1,10):
            value_as_string = str(PV(i,j/100))
            Row += value_as_string.rjust(10)
             (Row)
         ("\n\t\t\t\tFuture Value of Annuity Immediate")
    string = "  "
        i    range(1,10):
        number_as_string = str(i) + "%"
        string += number_as_string.rjust(10)
         (string)
    times = [1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,30,40,50]
        i    times:
        int_as_string = str(i)
        Row = int_as_string.rjust(2)
            j    range(1,10):
            value_as_string = str(FV(i,j/100))
            Row += value_as_string.rjust(10)
             (Row)
#Main Function
n = len(sys.argv)

   output_type(n) == True:
    time = sys.argv[1]
    interest = sys.argv[2]
      (check_input(time,interest)==True):
        Simple(time,interest)
    :
    Complex()
```