Input, Processing, and Output

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Chapter 2
Gaddis, T. (2019). Starting out with Python. New York, NY: Pearson

```
In [1]: print("Hello, world");
```

```
Hello, world
```

```
In [2]: print('Kate Austen')
        print('123 Full Circle Drive')
        print('Ashevill, NC 28899')
```

```
Kate Austen
123 Full Circle Drive
Ashevill, NC 28899
```

```
In [3]: print('Your assignment is to read "Hamlet" by tomorrow.')
```

```
Your assignment is to read "Hamlet" by tomorrow.
```

```
In [4]: print("""I'm reading "Hamlet" tonight.""")
```

```
I'm reading "Hamlet" tonight.
```

```
In [5]: print("""One
        Two
        Three """)
```

```
One
Two
Three
```

```
In [6]: # This program displays a person's
        # name and address
        print('Kate Austen')
        print('123 Full Circle Drive')
        print('Asheville, NC 28899')
```

```
Kate Austen
123 Full Circle Drive
Asheville, NC 28899
```

```
In [7]: room= 503
        print('I am staying in room number',room)
```

```
I am staying in room number 503
```

```
In [8]: dollars = 2.27;
        print('I have',dollars,'in my account.')
        dollars = 99.95;
        print('But now I have',dollars,'in my account')
```

```
I have 2.27 in my account.
But now I have 99.95 in my account
```

```
In [9]: variable = input("Hey, What is your name");
```

```
Hey, What is your nameRamiro
```

```
In [10]: variable
```

```
Out[10]: 'Ramiro'
```

```
In [11]: first_name = input('Enter your first name: ')
         last_name = input('Enter your last name: ')
         print('Hello',first_name, last_name)
```

```
Enter your first name: ramiro
Enter your last name: gonzalez
Hello ramiro gonzalez
```

```
In [12]: string_value = input('How many hours did you work? ')
         hours = int(string_value)
         hours = int(input('How many hours did you work? '))
```

```
How many hours did you work? galvez
```

```
---------------------------------------------------------------------------

ValueError                                Traceback (most recent call last)

<ipython-input-12-eed6b7ae59e8> in <module>()
  1 string_value = input('How many hours did you work? ')
----> 2 hours = int(string_value)
  3 hours = int(input('How many hours did you work? '))


ValueError: invalid literal for int() with base 10: 'galvez'
```

```
In [13]: total_seconds = float(input('Enter a number of seconds'))
         hours = total_seconds//3600;
         minutes = (total_seconds//60)%60
         seconds = total_seconds%60
         print('Here is the time in hours, minutes, and seconds: ')
         print('Hours:',hours)
         print('Minutes: ',minutes)
         print('Seconds: ',seconds)
```

```
Enter a number of seconds3
Here is the time in hours, minutes, and seconds:
Hours: 0.0
Minutes:  0.0
Seconds:  3.0
```

```
In [14]: units_sold = 4; sales_amount = 4;
         print('We sold',units_sold, \
               'for a total of',sales_amount)
```

```
We sold 4 for a total of 4
```

```
In [15]: print('One', end=' ')
         print('Two', end=' ')
         print('Three')
```

```
One Two Three
```

```
In [16]: print('One','Two','Three', sep = '*')
```

```
One*Two*Three
```

```
In [17]: print('Mon\tTues\tWed')
         print('Thur\tFri\tSat')
```

```
Mon        Tues        Wed
Thur        Fri        Sat
```

```
In [18]: print("Your assignment is to read \"Hamlet\" by tomorrow.")
         print('I\'m ready to begin.')
```

```
Your assignment is to read "Hamlet" by tomorrow.
I'm ready to begin.
```

```
In [19]: amount_due = 5000.0;
         monthly_payment = amount_due/12.0;
         print('The monthly payment is ', monthly_payment)
```

```
The monthly payment is  416.6666666666667
```

```
In [20]: print(format(12345.6789, '.2f'))
```

```
12345.68
```

```
In [21]: print(format(12345.678,'e'))
```

```
1.234568e+04
```

```
In [22]: print(format(12345.678,'.2e'))
```

```
1.23e+04
```

```
In [23]: a = 20; b = 40; c = 30;
         (x,y,z) = (a,b,c)
         print(x,y,z)
```

```
20 40 30
```

1 Personal Information

```
In [24]: print('Ramiro Gonzalez')
         print('000 00st W, Merced, california, 00000')
         print('209-962-2524')
         print('Computer Science and Engineering')
```

```
Ramiro Gonzalez
000 00st W, Merced, california, 00000
209-962-2524
Computer Science and Engineering
```

2 Sales Prediction

```
In [25]: total_sales = float(input("Enter the projected amount of total sales: "))
         annual_profit = .23*total_sales
         print('Annual profit is ', annual_profit)
```

```
Enter the projected amount of total sales:
```

```
---------------------------------------------------------------------------

ValueError                                Traceback (most recent call last)

<ipython-input-25-feafcd05e091> in <module>()
----> 1 total_sales = float(input("Enter the projected amount of total sales: "))
      2 annual_profit = .23*total_sales
      3 print('Annual profit is ', annual_profit)


ValueError: could not convert string to float:
```

3 Land Calculation

```
In [ ]: total_sqft = float(input('Enter the total squre feet in a tract of land: '))
        number_acres = total_sqft/43560;
        print('Number of acres is: ', number_acres)
```

4 Total Purchase

```
In [ ]: sales_tax = .07;
        item1 = float(input('Price of item 1: '))
        item2 = float(input('Price of item 2: '))
        item3 = float(input('Price of item 3: '))
        item4 = float(input('Price of item 4: '))
        item5 = float(input('Price of item 5: '))
        subtotal = item1 + item2 + item3 + item4 + item5
        sales_tax_amount = subtotal*sales_tax
        total = subtotal + sales_tax_amount
        print('Total is : ',total)
```

5 Distance Traveled

```
In [ ]: speed = 70; #mph
        time = 6
        distance = speed*time
```

```
        print('Distance for 6 hours',distance)
        time = 10
        distance = speed*time
        print('Distance for 10 hours',distance)
        time = 15
        distance = speed*time
        print('Distance for 15 hours',distance)
```

6 Sales Tax

```
In [ ]: purchase_amount = float(input('Purchase price: '))
        state_tax = .05
        county_tax = .025;
        total_tax = state_tax + county_tax;
        total_tax_price = total_tax*purchase_amount;
        total = purchase_amount + total_tax_price;
        print('Amount of purchase ', state_tax, ' county tax ' \
              , county_tax, 'total_tax ',format(total_tax,'.3f'), \
             ' total sale price ', total)
```

7 Miles-Per-Gallon

```
In [ ]: miles_driven = float(input('Miles driven: '))
        gallons_used = float(input('gallons of gas used: '))
        mpg = miles_driven/gallons_used;
        print('MPG: ', mpg)
```

8 Tip, Tax, and Total

```
In [ ]: food_price = float(input('The price of the food: '))
        food_price_tip = .18*food_price;
        food_price_tax = .07*food_price;
        total = food_price + food_price_tip + food_price_tax;
        print('Food price is ', food_price \
             ,' tip is ', food_price_tip, ' sales tax price ', format(food_price_tax,'.2') \
             ,' and total is ', total)
```

9 Celsius to Fahrenheit Temperature Converter

```
In [ ]: celsius_input = float(input('Enter temperature in Celsius'))
        fahrenheit = 9.0/5 + 32;
        print('Temperature in ', celsius_input , ' Celsius is ', fahrenheit, ' Fahrenheit' )
```

10 Ingredient Adjuster

```
In [ ]: number_cookies = int(input('Enter number of cookies: '))
        num_of_cups = number_cookies/48;
        print('You need ', format(num_of_cups*1.5,'.2f'), 'cups of sugar')
        print('You need ', format(num_of_cups*1,'.2f'), 'cups of sugar')
        print('You need ', format(num_of_cups*2.75,'.2f'), 'cups of flour')
```

11 Male and Female Percentages

```
In [ ]: number_females = int(input('Enter number of females enrolled in course: '))
        number_males = int(input('Enter number of males enrolled in course: '))
        total_students = number_females + number_males;
        percent_female = number_females/total_students;
        percent_male = number_males/total_students;
        print('Percentage of females enrolled is  ',format(percent_female,'.0%') \
              , 'and ', format(percent_male,'.0%') ,'males')
```

12 Stock Transaction Program

```
In [ ]: shares = 2000;
        buy_price = 40;
        sell_price = 42.75;
        amount_paid = shares*buy_price
        commission_fee_buy = .03*amount_paid
        total_buy = amount_paid + commission_fee_buy;
        amount_sold_price = shares*sell_price
        commission_fee_sell = .03*amount_sold_price;
        total_sell = amount_sold_price - commission_fee_sell;
        print('The amount money paid for the stock',amount_paid)
        print('Commision paid for buying stock ', commission_fee_buy)
        print('Amount made from selling stock', amount_sold_price)
        print('Commission paid for selling stock',commission_fee_sell)
        profit = total_sell - total_buy;
        print('The profit is ', profit)
```