**Python**

**Assignment: 2**

**pp 54-56**

**Exercises 1-53 odd, 55, 57, 58**

**Determine the output displayed by the lines of code.**

1. >>> print("Bon", " Voyage", '!', sep="")

Solution: **Bon Voyage!**

3. >>> print("Portion: ", 90, '%', sep="")

Solution: **Portion: 90%**

5. >>> print(1, 2, 3, sep=" x ")

Solution: **1 x 2 x 3**

7. >>> print("father", "in", "law", sep='-')

Solution: **father-in-law**

>>>print('T', end='-')

>>>print("shirt")

Solution: **T-shirt**

11. >>>print("Py", end="")

>>>print("thon")

Solution: **Python**

>>>print("Hello\n")

>>>print("World!")

Solution:

**Hello**

**World!**

15. >>> print("One\tTwo\nThree\tFour")

**Solution:**

**One Two**

**Three Four**

17. >>> print("NUMBER\tSQUARE")

>>>print(str(2) + "\t" + str(2 \*\* 2))

>>> print(str(3) + "\t" + str(3 \*\* 2))

Solution:

**NUMBER SQUARE**

**2 4**

**3 9**

19. >>>print("Hello\t\tWorld!")

>>>expandtabs(16))

**Solution:**

**Hello World!**

**Hello World!**

21. >>>print("01234567890")

>>>print("A".rjust(5), "B".center(5), "C".ljust(5), sep="")

Solution:

**01234567890**

**A B C**

23. >>>print("01234567890123456")

>>>print("{0:^7s}{1:4s}{2:>6s}".format("one", "two", "three"))

Solution:

**01234567890123456**

**one two three**

25. >>>print("0123456789")

>>>print("{0:10. 2%}".format(.123))

>>>print("{0:^10. 1%}".format(1.23))

>>>print("{0:<10,. 2%}".format(12.3))

Solution:

**0123456789**

**12. 30%**

**123. 0%**

**1,230.00%**

27. >>>print("${0:,.2f}".format(1234.567))

Solution: **$1,234.57**

29. >>>print("{0:,.0f}".format(1.234))

Solution: **1**

31.

>>>print("{0:10s}{1:^16s} {2:s}".format("Language", "Native speakers", "% of World Pop.")) >>>print("{0:10s}{1:^16,d}{2:10.2%}".format("Mandarin", 935000000,.141)) >>>print("{0:10s}{1:^16,d}{2:10.2%}".format("Spanish", 387000000,.0585)) >>>print("{0:10s}{1:^16,d}{2:10.2%}".format("English", 365000000,.0552))

Solution:

**Language Native speakers % of World Pop.**

**Mandarin 935,000,000 14.10%**

**Spanish 387,000,000 5.85%**

**English 365,000,000 5.52%**

33. >>>print("Be {0:s} – {1:s} else is taken.".format("yourself", "everyone"))

Solution: **Be yourself – everyone else is taken.**

35. >>> print("Always {0:s} on the bright side of {1:s}.".format("look", "life"))

Solution: **Always look on the bright side of life.**

37. >>> x = 3 y = 4 print("The product of {0:d} and {1:d} is {2:d}.".format(x, y, x \* y))

Solution: **The product of 3 and 4 is 12.**

39. >>>print("The square root of {0:n} is about {1:.4f}.".format(x, x \*\* .5))

Solution: **The square root of 2 is about 1.4142.**

41. >>>str1 = "In a randomly selected group of {0:d} people, the " + \ "probability\nis {1:.2f} that 2 people have the same birthday."

>>>print(str1.format(23, .507397))

Solution:

In a randomly selected group of 23 people, the probability

is 0.51 that 2 people have the same birthday.

43. >>>str1 = "You miss {0:.0%} of the shots you never take. - Wayne Gretsky"

>>>print(str1.format(1))

Solution: **You miss 100% of the shots you never take. - Wayne Gretsky**

45. # 43/193 is .2227979275 to 10 decimal places

>>>print("{0:.2%} of the UN nations are in {1:s}.".format(43/193, "Europe"))

Solution:  **22.28% of the UN nations are in Europe.**

47. >>> print("{0:s}{1:s}{0:s}".format("abra", "cad"))

Solution: **abracadabra**

49.

>>>str1 = "Be {0:s} whenever {1:s}. It is always {1:s}. - Dalai Lama"

>>>print(str1.format("kind", "possible"))

Solution: Be kind whenever possible. It is always possible. - **Dalai Lama**

51. Do print("Hello") and print("Hello", end="\n") produce the same output?

Solution: **Yes**

53. Server’s Tip Calculate the amount of a server’s tip, given the amount of the bill and the percentage tip as input.

Solution:

>>> amount=float(input("Enter amount of bill: "))

**Enter amount of bill: 150**

>>> tip=float(input("Enter percentage tip: "))

**Enter percentage tip: 15**

>>> calc= round((tip/100)\*amount,2)

>>> print("Tip: $"+str(calc))

**Tip: $22.5**

55. A common misconception is that if you receive a 10% pay raise and later a 10% pay cut, your salary will be unchanged. Request a salary as input and then display the salary after receiving a 10% pay raise followed by a 10% pay cut. The program also should display the percentage change in salary.

Solution:

>>> initialsalary=float(input("Enter beginning salary: "))

**Enter beginning salary: 10000**

>>> payrise=float((0.1\*initialsalary)+ initialsalary)

>>> paydown=payrise-(0.1\*payrise)

>>> print("New salary: $"+str(paydown))

**New salary: $9900.0**

>>> change=((paydown-initialsalary)/initialsalary)\*100

>>> print("Change: "+str(change)+"%")

**Change: -1.0%**

>>>

57.

Future Value If P dollars (called the principal) is invested at r% interest compounded annually, then the future value of the investment after n years is given by the formula future value = P((1 + r /100)\*\* n) . Calculate the future value of an investment after the user enters the principal, interest rate, and number of years. Figure 2.27 shows that $1,000 invested at 5% interest will grow to $1,157.63 in 3 years.

Solution:

>>> principal=float(input("Enter principal: "))

**Enter principal: 1000**

>>> rate=float(input("Enter interest rate (as %): "))

**Enter interest rate (as %): 5**

>>> years=float(input("Enter number of years: "))

**Enter number of years: 3**

>>> value= round(((1+(rate/100))\*\*years)\*principal,2)

>>> print("Future value: $"+str(value))

**Future value: $1157.63**

>>>

58.

Present Value The present value of f dollars at interest rate r% compounded annually for n years is the amount of money that must be invested now in order to grow to f dollars (called the future value) in n years where the interest rate is r% per year. The formula for present value is present value = f /((1 + r 100))\*\* n . Calculate the present value of an investment after the user enters the future value, interest rate, and number of years. Figure 2.28 shows that at 4% interest per year, $7,903.15 must be invested now in order to have $10,000 after 6 years.

**Solution:**

fvalue=float(input("Enter future value: "))

**Enter future value: 10000**

>>> rate=float(input("Enter interest rate (as %): "))

**Enter interest rate (as %): 4**

>>> years=float(input("Enter number of years: "))

**Enter number of years: 6**

>>> pvalue=round(fvalue/((1+(rate/100))\*\*years),2)

>>> print("Present value: $"+str(pvalue))

**Present value: $7903.15**