**Python – Assignment 15**

|  |  |
| --- | --- |
| **S. No.** | **Question / Answer** |
| 1 | How many seconds are in an hour? Use the interactive interpreter as a calculator and multiply the number of seconds in a minute (60) by the number of minutes in an hour (also 60). |
|  | >> 60 \* 60  3600 |
| 2 | Assign the result from the previous task (seconds in an hour) to a variable called seconds\_per\_hour. |
|  | seconds\_per\_hour = 60 \* 60 |
| 3 | How many seconds do you think there are in a day? Make use of the variables seconds per hour and minutes per hour. |
|  | seconds\_per\_minute = 60  minutes\_per\_hour = 60  hours\_per\_day = 24  seconds\_per\_minute \* minutes\_per\_day \* hours\_per\_day  86400 |
| 4 | Calculate seconds per day again, but this time save the result in a variable called seconds\_per\_day |
|  | seconds\_per\_minute = 60  minutes\_per\_hour = 60  hours\_per\_day = 24  seconds\_per\_day = seconds\_per\_minute \* minutes\_per\_day \* hours\_per\_day  seconds\_per\_day  86400 |
| 5 | Divide seconds\_per\_day by seconds\_per\_hour. Use floating-point (/) division. |
|  | seconds\_per\_day / seconds\_per\_hour  24.0 |
| 6 | Divide seconds\_per\_day by seconds\_per\_hour, using integer (//) division. Did this number agree with the floating-point value from the previous question, aside from the final .0? |
|  | seconds\_per\_day // seconds\_per\_hour  24  Previous result was a floating point number, this is an integer. But both correspond to the same value. |
| 7 | Write a generator, genPrimes, that returns the sequence of prime numbers on successive calls to its next() method: 2, 3, 5, 7, 11, ... |
|  | def gen\_primes():  D = {}  q = 2  while True:  if q not in D:  yield q  D[q\*q] = [q]  else:  for p in D[q]:  D.setdefault(p+q, []).append(p)  del D[q]  q += 1  Based on Sieve of Eratosthenes |