Python Programs by AP Computer Science Principles students:

Benjamin. T.

```
main.py                          [] ☼  Run     Shell                                                    Clear

 1  import random                                 Out of 100 random numbers,  41 were odd, and  59 were even.
 2  # main function                               >|
 3  def main():
 4    # local variables
 5    currentNumber = 0
 6    oddCounter = 0
 7    evenCounter = 0
 8    totalNumbers = 100
 9    for counter in range(1,101):
10      # get random number
11      currentNumber = random.randint(1, 100)
12      # Check whether number is odd or even
13      if isEven(currentNumber) == 1:
14        evenCounter+=1
15      else:
16        oddCounter+=1
17    print ("Out of", totalNumbers, "random numbers, ", oddCounter,\
18    "were odd, and ", evenCounter, "were even.")
19  # The isEven function returns True if number is even, False if odd.
20  def isEven(currentNumber):
21    if currentNumber%2 == 0:
22      return 1
23    else:
24      return 2
25  main()
```

```
main.py                          [] ☼  Run     Shell

 1  def main():                                   Enter an integer: 44
 2                                                The number you entered is not a prime number.
 3    # Local variable                            >|
 4    number = 0
 5    # Get number
 6    number = int(input("Enter an integer: "))
 7    # display information regarding whether the number is prime
 8    if is_prime(number):
 9      print ("The number you entered is a prime number.")
10    else:
11      print ("The number you entered is not a prime number.")
12  # The is_prime function receives a number as an argument, and returns
13  # True if number is prime, False otherwise.
14  def is_prime(number):
15    half = int(number/2)
16    for count in range(2,half+1):
17      if number % count == 0:
18        return False
19      else:
20        return True
21  main()
```

Nayeli F:

Project Name: Magic Date

```
1    # main function
2  - def main():
3       # local variables
4          day = 0
5          month = 0
6          year = 0
7       # Get month
8          month = int(input("Enter the month in numeric form: "))
9       # Get day
10         day = int(input("Enter the day of the month: "))
11      # Get year
12         year = int(input("Enter the year in two digit format: "))
13         showMagicDate(day,month,year)
14
15   # The showMagicDate function accepts the day, month, and year as arguments
16   # calculates whether the entered date is a magic date, and displays the results
17
18 - def showMagicDate(d, m, y):
19      #local variable - calculates the mutliplication of day and month
20         dayTimesMonth = d*m
21         print("The date is ", m, "/", d, "/", y)
22  -      if d*m == y:
23            print ("This is a magic date")
24  -      else:
25            print("This is not a magic date")
26
27   main()
```

✔ Execute Mode, Version, Inputs & Arguments

(3.7.4 ✔)

Result
executed in 44.589 sec(s)

```
Enter the month in numeric form: 5
Enter the day of the month: 10
Enter the year in two digit format: 20
The date is  5 / 10 / 20
This is not a magic date
```

Reagan L:

```
1  - def main():
2  -     for year in range(2010, 2021):
3           print(year, "has", numberOfDaysInAYear(year))
4
5    # returns the number of days in a year
6  - def numberOfDaysInAYear(yr):
7  -     if (isLeapYear(yr)):
8           return 366
9  -     else:
10          return 365
11
12   # Determine if it is a leap year *
13 - def isLeapYear(y):
14 -     if(y % 400 == 0 or (y % 4 == 0 and y% 100 != 0)):
15          return True
16 -     else:
17          return False
18   main()
```