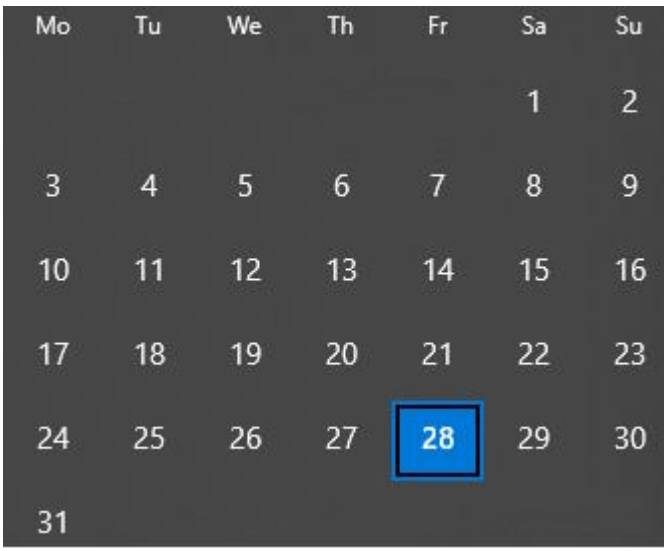
Lab Assignments:

1. Write a program that asks the user how many days are in a month, and what day of the

week the month begins on (0 for Monday, 1 for Tuesday, etc), and then prints a calendar for that month.

For example, here is the output for a 31-day month that begins on day 5 (Saturday):



2. Define a procedure histogram() that takes a list of integers and prints a histogram to the screen. For

   example, histogram([4, 9, 7]) should print the following:

   ****

   ****

   ****

3. Write a version of a palindrome recognizer that also accepts phrase palindromes such as

   "Go hang a salami I'm a lasagna hog.", "Was it a rat I saw?", "Step on no pets", "Sit on a potato pan, Otis", "Lisa Bonet ate no basil", "Satan, oscillate my metallic sonatas", "I roamed under it as a tired nude Maori", "Rise to vote sir", or the exclamation "Dammit, I'm mad!". Note that punctuation, capitalization, and spacing are usually ignored.

4. A pangram is a sentence that contains all the letters of the English alphabet at least once, for example: The quick brown fox, jumps over the lazy dog!!!!.

Your task here is to write a function to check a sentence to see if it is a pangram or not.

5. Write a function translate() that will translate a text into "rövarspråket" (Swedish for "robber's language").
   That is, double every consonant and place an occurrence of "o" in between.

   For example, translate("this is fun") should return the string "tothohisos isos fofunon".

6. Write a program that contains a function that has one parameter, n, representing an integer greater than 0. The function should return n! (n factorial). Then write a main function that calls this function with the values 1 through 20, one at a time, printing the returned results. This is what your output should look like:

```
1 1
2 2
3 6
4 24
5 120
6 720
7 5040
8 40320
9 362880
10   628800
```

7. Write a recursive sum from 1 to x (i.e. 1 + 2 + ... + x) recursively as follows for integer $x \geq 1$:

   1, if x = 1
   x + sum from 1 to x-1 if x > 1

   Complete the following Python program to compute the sum 1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 10

```
def sum(x):
    # you complete this function recursively


def main():
    # compute and print 1 + 2 + ... + 10
    print(sum(10))
    main()
```