Exercises

1) Import the math module and use the sqrt function to find the square root of 16.
2) Import the random module and use the randint function to generate a random number between 1 and 10.
3) Import the datetime module and use the datetime function to create a datetime object for today's date.
4) Import the os module and use the getcwd function to print the current working directory.
5) Import the time module and use the sleep function to pause the program for 5 seconds.
6) Import the calendar module and use the month function to print the calendar for the current month.
7) Import the statistics module and use the mean function to calculate the mean of a list of numbers.
8) Import the re module and use the search function to find the first occurrence of a pattern in a string.
9) Import the json module and use the load function to load JSON data from a file.
10) Import the urllib module and use the request function to make an HTTP request to a website.

Exercises and solution

1) Using the math module and the sqrt() function:

```python
import math

# Calculate the square root of 16
result = math.sqrt(16)

print(result)  # Output: 4.0
```

2) Using the random module and the randint() function:

```python
import random

# Generate a random number between 1 and 10
result = random.randint(1, 10)

print(result)  # Output: random number between 1 and 10
```

3) Using the datetime module and the datetime() function:

```python
import datetime

# Create a datetime object for today's date
today = datetime.datetime.today()

print(today)  # Output: current date and time
```

4) Using the os module and the getcwd() function:

```python
import os

# Print the current working directory
cwd = os.getcwd()

print(cwd)  # Output: current working directory
```

5) Using the time module and the sleep() function:

```python
import time

# Pause the program for 5 seconds
time.sleep(5)

print("5 seconds have passed")  # Output: 5 seconds have passed
```

6) Using the calendar module and the month() function:

```python
import calendar

# Print the calendar for the current month
cal = calendar.month(datetime.date.today().year,
datetime.date.today().month)

print(cal)  # Output: calendar for the current month
```

7) Using the statistics module and the mean() function:

```python
import statistics

# Calculate the mean of a list of numbers
numbers = [1, 2, 3, 4, 5]
mean = statistics.mean(numbers)

print(mean)  # Output: mean of the list of numbers
```

8) Using the re module and the search() function:

```python
import re

# Find the first occurrence of a pattern in a string
string = "The quick brown fox jumps over the lazy dog"
pattern = "brown"
match = re.search(pattern, string)

print(match.group())  # Output: brown
```

9) Using the json module and the load() function:

```python
import json

# Load JSON data from a file
with open("data.json") as f:
    data = json.load(f)

print(data)  # Output: JSON data from file
```

10) Using the urllib module and the request() function:

```python
import urllib.request

# Make an HTTP request to a website
url = "http://www.example.com"
response = urllib.request.urlopen(url)

print(response.read())  # Output: contents of the website
```