PYTHON LAB PROGRAM 9

9 Aim: Demonstration of working with excel spreadsheets and web scraping
a) Write a python program to download the all XKCD comics

Code:

```
import requests
import os

def download_xkcd_comics():
    # Create a directory to store the comics
    os.makedirs('xkcd', exist_ok=True)

    # Start from the first comic
    url = 'https://xkcd.com/1/info.0.json'

    while True:
        # Fetch the comic metadata
        response = requests.get(url)
        response.raise_for_status()
        comic_data = response.json()

        # Extract the image URL
        image_url = comic_data['img']

        # Download the image
        response = requests.get(image_url)
        response.raise_for_status()

        # Save the image to the xkcd directory
        image_name = image_url.split('/')[-1]
        image_path = os.path.join('xkcd', image_name)
        with open(image_path, 'wb') as image_file:
            image_file.write(response.content)

        # Print the comic title and number
        print(f"Downloaded: {comic_data['title']} - #{comic_data['num']}")

        # Check if there's a next comic
        if comic_data['num'] == 1:
            break
        else:
            # Get the URL of the previous comic
```

```
        url = f"https://xkcd.com/{comic_data['num'] - 1}/info.0.json"

    print('All XKCD comics downloaded successfully!')

# Run the program
download_xkcd_comics()
```

Output:

```
Downloaded: Barrel - Part 1 - #1
All XKCD comics downloaded successfully!
```

9 b) Demonstrate python program to read the data from the spreadsheet and write the data in to the spreadsheet

Code:

```
from openpyxl import Workbook
from openpyxl.styles import Font
wb = Workbook()
sheet = wb.active
sheet.title = "Language"
wb.create_sheet(title = "Capital")
lang = ["Kannada", "Telugu", "Tamil"]
state = ["Karnataka", "Telangana", "Tamil Nadu"]
capital = ["Bengaluru", "Hyderabad", "Chennai"]
code =['KA', 'TS', 'TN']
sheet.cell(row = 1, column = 1).value = "State"
sheet.cell(row = 1, column = 2).value = "Language"
sheet.cell(row = 1, column = 3).value = "Code"
ft = Font(bold=True)
for row in sheet["A1:C1"]:
    for cell in row:
        cell.font = ft
for i in range(2,5):
    sheet.cell(row = i, column = 1).value = state[i-2]
    sheet.cell(row = i, column = 2).value = lang[i-2]
    sheet.cell(row = i, column = 3).value = code[i-2]
wb.save("demo.xlsx")
sheet = wb["Capital"]
sheet.cell(row = 1, column = 1).value = "State"
sheet.cell(row = 1, column = 2).value = "Capital"
sheet.cell(row = 1, column = 3).value = "Code"
ft = Font(bold=True)
for row in sheet["A1:C1"]:
    for cell in row:
        cell.font = ft
for i in range(2,5):
    sheet.cell(row = i, column = 1).value = state[i-2]
    sheet.cell(row = i, column = 2).value = capital[i-2]
    sheet.cell(row = i, column = 3).value = code[i-2]
```

```
wb.save("demo.xlsx")
srchCode = input("Enter state code for finding capital ")
for i in range(2,5):
    data = sheet.cell(row = i, column = 3).value
    if data == srchCode:
        print("Corresponding capital for code", srchCode, "is", sheet.cell(row = i, column =2).value)
sheet = wb["Language"]
srchCode = input("Enter state code for finding language ")
for i in range(2,5):
    data = sheet.cell(row = i, column = 3).value
    if data == srchCode:
        print("Corresponding language for code", srchCode, "is", sheet.cell(row = i, column =
2).value)
wb.close()
```

Output:

```
Enter state code for finding capital TS
Corresponding capital for code TS is Hyderabad
Enter state code for finding language TN
Corresponding language for code TN is Tamil
```