Email Automation

Protocols:

Protocol	Office365 server	Gmail	Yahoo
IMAP			
POP3			
EWS		NA	NA
Outlook Client		NA	NA

IMAP

https://www.hesk.com/knowledgebase/index.php?article=72
https://support.google.com/mail/answer/7104828?hl=en

Fetch Mail:
Server Host: imap.gmail.com
Port No: 993

Send Mail:
Server Host: smtp.gmail.com
Port No: 587

Dictionary variable

▶ A dictionary variable is a collection of key-value pairs in which each key is mapped to a value

▶ In case of email, some dictionary keys are:

- emailSubject
- emailMessage
- emailFrom
- emailTo
- emailCc
- emailBcc
- emailReceivedTime
- emailReceivedDate

Bot 1

Design and create a bot to automate task of

A. Fetching unread mail from mail and displaying its Subject and Message
B. Sending a mail

FTP/SFTP

Use this command to **automate** any **FTP** or SFTP operations.
FTP (File Transfer Protocol) is a standard network protocol used to **transfer files** from one host to another host over a **TCP-based network**, such as the Internet. The FTP/SFTP command can automate the following
- File uploads and downloads
- Back up websites
- Secure FTP for secure remote file transfer

Task using FTP/SFTP

Provide server address, port and client login credentials in input variables.

Connect and disconnect FTP/SFTP server machine.

Create and Change Folder on FTP/SFTP server machine.

Delete files and folder on FTP/SFTP server machine.

Get files and folder from FTP/SFTP server machine.

Put files and folder in FTP/SFTP server machine.

Rename files in FTP/SFTP server machine.

Authentication form

User credentials: Requires an FTP username and password.

Anonymous: This form of authentication is enabled on sites where files are available for public access and the users need not identify themselves to the server.

Key-based: SFTP authentication is usually done with a private and public key. The key pair is automatically generated by the computer. The private key is kept with the SFTP client and the corresponding public key with the SFTP server. When establishing a connection, the client shares the private key to be matched with the corresponding public key on the server.

Transfer Mode

In the **active mode**, the client informs the server about the port used for listening and starts listening for incoming data connections from the server.

In the **passive mode**, the client receives a server IP address and server port number from the server. The client opens a data connection to the server IP address and server port number that are received. Most organizations prefer the passive mode because it involves less or no alterations to the firewall settings.

Transfer types

Use the **binary** option when transferring executable files.
Use the **ASCII** option when transferring text files.

XAMPP Control Panel v3.3.0 [Compiled: Apr 6th 2021] — □ ✕

XAMPP Control Panel v3.3.0

Modules								
Service	**Module**	**PID(s)**	**Port(s)**	**Actions**				
	Apache			Start	Admin	Config	Logs	
	MySQL			Start	Admin	Config	Logs	
	FileZilla	18988	21, 14147	Stop	Admin	Config	Logs	
	Mercury			Start	Admin	Config	Logs	
	Tomcat			Start	Admin	Config	Logs	

Config
Netstat
Shell
Explorer
Services
Help
Quit

```
12:54:39 PM  [main]       XAMPP Installation Directory: "c:\xampp\"
12:54:39 PM  [main]       Checking for prerequisites
12:54:42 PM  [main]       All prerequisites found
12:54:42 PM  [main]       Initializing Modules
12:54:42 PM  [main]       Starting Check-Timer
12:54:42 PM  [main]       Control Panel Ready
12:54:49 PM  [filezilla]  Attempting to start FileZilla app...
12:54:50 PM  [filezilla]  Status change detected: running
```

Users

Page:	Account settings	Users

Page:
- General
- Shared folders
- Speed Limits
- IP Filter

Account settings

☑ Enable account

☑ Password: ••••••••••••••••••••••••••

Group membership: `<none>` ▼

☐ Bypass userlimit of server

Maximum connection count: `0`

Connection limit per IP: `0`

☐ Force SSL for user login

Users

monisa

[Add] [Remove]

[Rename] [Copy]

Description

You can enter some comments about the user

[OK]

[Cancel]

Bot 2

Design and create a bot to create folder and transfer file to a server.

API

APIs are set of rules/protocols to communicate between two applications.

Web Service

WEB service is type of API which supports HTTP protocol.
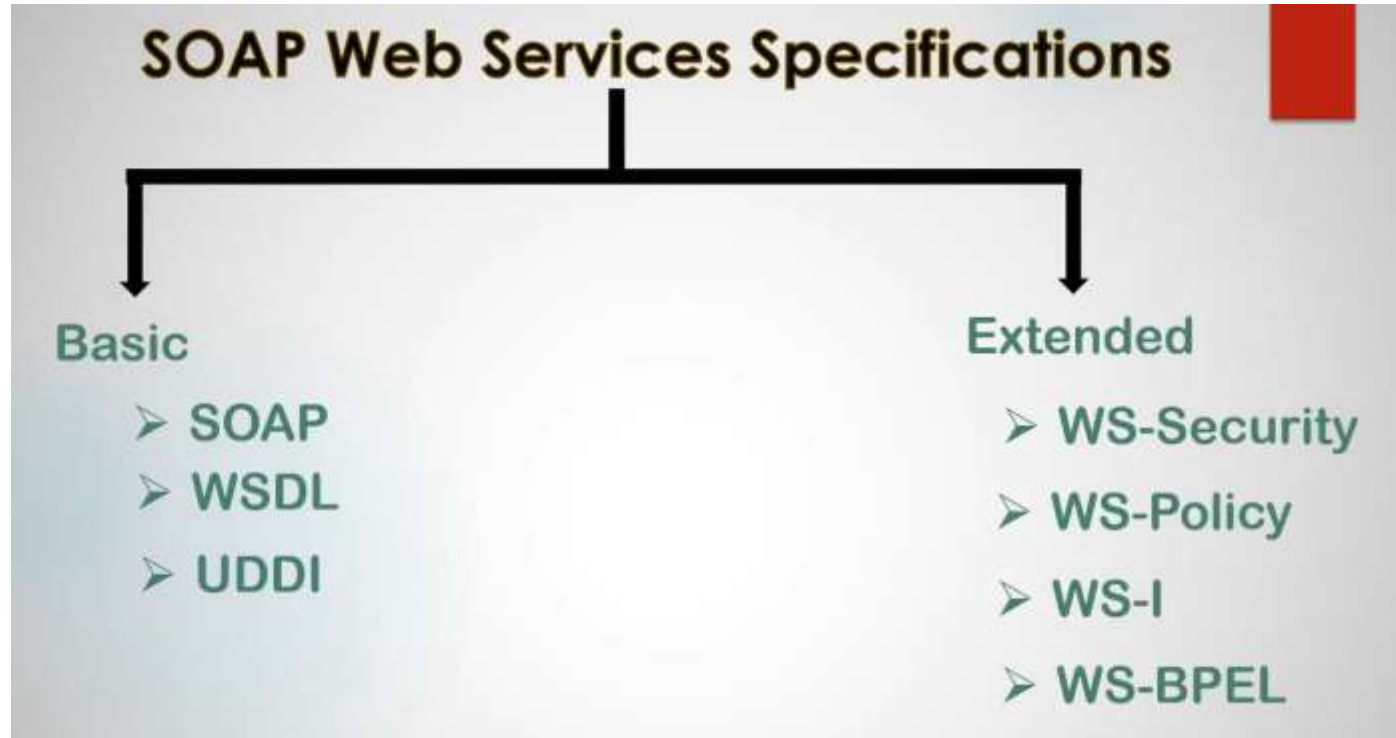
Types of Web Service:

SOAP(Uses xml)

RESTFul web service(REST)

SOAP Web Service

A web service that complies to the SOAP Web Services Specifications defined by W3C(World Wide Web Consortium) is called a SOAP Web Service

SOAP Web Service

SOAP Web Services Specifications

Basic
- ➤ SOAP
- ➤ WSDL
- ➤ UDDI

Extended
- ➤ WS-Security
- ➤ WS-Policy
- ➤ WS-I
- ➤ WS-BPEL

SOAP Web Service

SOAP

- Simple Object Access Protocol
- It is a protocol/rule which defines how two applications will communicate to each other over the web
- Exchange of Information/message occurs in a common format – XML
- XML Message must have the structure of SOAP Message

XML

Client Service Consumer → Request → Server Service Provider ← Response

SOAP Web Service

SOAP Message

▶ XML document containing the following elements –

  ▶ **Envelope** – Defines the start and the end of the message

  ▶ **Body** – Contains the XML data comprising the message being sent

  ▶ **Header** – Contains any optional attributes of the message

  ▶ **Fault** – An optional Fault element that provides information about errors that occur while processing the message

SOAP Web Service

SOAP Message

Envelope ⟶ `<soap:Envelope xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">`

Body ⟶ `<soap:Body>`
  `<Add xmlns="http://tempuri.org/">`
   `<intA>int</intA>`
   `<intB>int</intB>`
  `</Add>`

Body ⟶ `</soap:Body>`
Envelope ⟶ `</soap:Envelope>`

SOAP Web Service

WSDL

Client Service Consumer → Request → Server Service Provider

Server Service Provider → Response → Client Service Consumer

- Web service Description Language
- XML format used for describing the Web services – Functionalities, Parameters, Return Type etc.
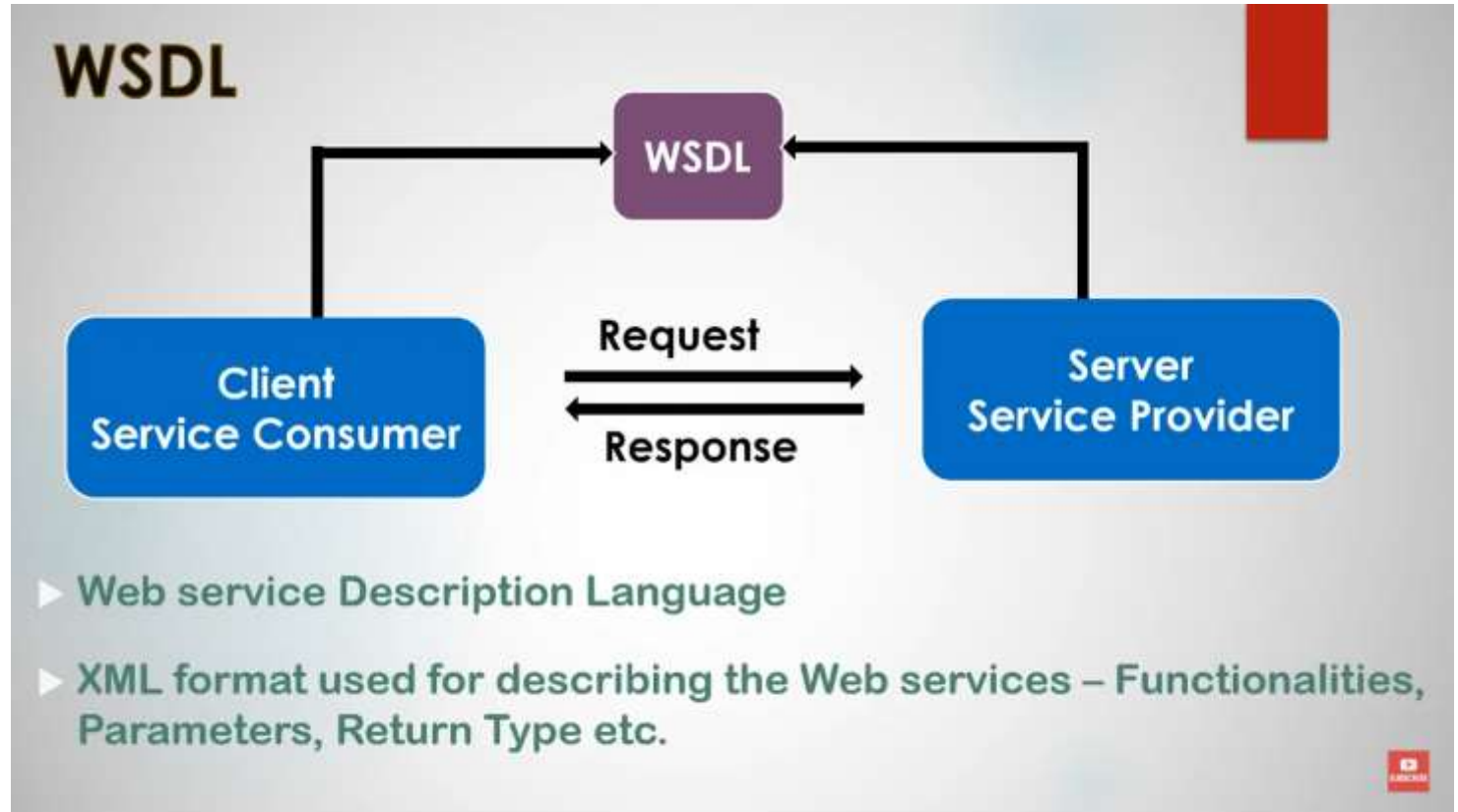
SOAP Web Service

UDDI

▶ Web service provider publishes the web service through WSDL on an online directory from where consumers can query and search the web services

▶ This online directory is UDDI - Universal Description, Discovery, and Integration

SOAP

Use the SOAP web service action from the SOAP Web Service package to access and exchange information between two systems in XML format.

With SOAP Web Service, you can perform these actions:

- Consume SOAP web services written to provide structured data for further business processing, such as currency conversion, weather reports, and language translation.
- Connect to different existing applications and different platforms, irrespective of any underlying infrastructure requirements.

SOAP

SOAP uses **xml** to send **request** to the server.

In return, it get **xml response**.

It uses **http** protocol for communication.

WSDL - Web service Description Language.

It **describes** methods available in web service with **req** and **response** types.

Bot 3

Design and create a bot to automate task of SOAP webservice to add two numbers.

http://dneonline.com/calculator.asmx

RESTFul web service

Use the REST Web Service command to test REST Web services using the HTTP methods GET, POST, PUT, and DELETE.

GET Method
Retrieves information (in the form of an entity) as identified by the Request URI.
POST Method
Requests that the server accepts the entity enclosed in the request as a new subordinate of the web resource identified.
PUT Method
Updates a record by passing different URI parameters based on the Key-Value pair.
DELETE Method
Requests that the origin server deletes the identified resource.

Bot 4

Design and create a bot to automate task of RESTFul web service to fetch,add data from server.

PGP

Use the **PGP** (Pretty Good Privacy) package to automatically encrypt and decrypt files for security.

The PGP package supports two types of encryption, symmetric (single key) and asymmetric (pair of keys) :
PGP symmetric :
Requires a single key to encrypt and decrypt files.
PGP asymmetric: Requires PGP public and private key to encrypt and decrypt files.

Action	Description
Create keys	Creates a pair of public and private encryption keys. ● In the Location to save public key file field, specify the path to the text file where to save the public key. ● In the Location to save private key file field, specify the path to the text file where to save the private key. ● **Optional:** In the Password to protect private key file field, select a credential variable or enter a value. ● **Optional:** Select the Overwrite Files check box to replace files with the same name.
Decrypt files	Decrypts encrypted files. See Using the Decrypt files action
Encrypt files	Encrypts files to enable users to send them over the internet securely. See Using the Encrypt files action

Bot 5

Write a bot to create public and private keys:
a.encrypt a text file using the public key
b.decrypt a text file using the private key

OCR

- Optical Character Recognition
- It extracts text from images, PDFs or applications

Bot 6

Design and create a bot to extract text from image using OCR. and log the text in log file.

Excel Automation

Bot 7

Design and create a bot to fetch two subject scores of students in excel and display its addition