Python Libraries and Packages for Web Development-A Survey

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Abstract- **Python is an explicate and high level programming language and used for developing desktop (GUI), websites and web applications. Python assist many features to execute dissimilar structure like Numpy, Pandas, Matplotlib, Flask, Web2py, etc.. For web develop. It is used in Games, AI, Media Tools and many more.**
This survey crops some python packages to establish web development. Peculiarly the Django framework is been used because it is secure, fast and easy to use.

Index Terms- Python, Web Server application development, CGI, WSGI, Frameworks

I. INTRODUCTION

This survey paper portray the assorted python frameworks to develop a strong emphasis on readability and efficiency while web developing. Python has predict its use in copious applications because of its simplicity. Web Development implies programming in both server and client side. It includes HTML, CSS and JavaScript.

II. SIGNIFICANCE OF PYTHON

The significance of python is described as follows,
a. Python is a High -level language
b. Python is a General Purpose Programming language.
c. Python has Large and robust standard library.
d. Python will Adopt Test Driven Development.
e. Python is a Simplify Complex Software Development.
f. Python Support Multiple Programming Paradigms.
g. Python has Many Open Source Frameworks and Tools.
h. Python support for an interactive mode.

i. Python can be easily integrated with COM, ActiveX, CORBA, C, and C++.

III. SIGNIFICANCE OF WEB DEVELOPMENT

The significance of Web Development is described as follows,
a. Stability and Reliability.
b. Easy to use and simple to handle.
c. Flexible and Easy Integration.
d. Open Source Language.
e. Vast Application.
f. Affordable and secure language.
g. Feasible Choice.
h. All in One Tool.

IV. PYTHON LIBRARIES AND PACKAGES FOR WEB DEVELOPMENT

a. Django
It is a free and open-source web framework, which supplant the [MVT] model-view-template. Framework makes a point of reusability, less code, rapid development. Reassuringly Secure and Exceedingly Scalable.

b. Numpy
It Support for large, multi-dimensional arrays and matrices. Used for data analysis packages and Scientific Computing.

c. Pandas
It is free software over BSD License (Three-Clause).Used for data manipulation and analysis.

d. Matplotlib
This library is used to plotter-draw pictures on paper using a pen. It provides object oriented API.

e. Flask
It is a Micro web framework and it supports extension to implement based on jinja 2, Werkzeug.

f. Web2py
This is a full-stack framework and built for security. It includes a Database Abstraction Layer-(DAL).
e. Bottle
This library is a WSGI micro web framework. It is designed to be fast and easy to developed web application. With Multivendor support. It uses an API to interact with various router vendors.

V. RELATED RESEARCH WORKS

A. Evaluating Rapid Application Development with Python for Heterogeneous Processor-based FPGAs
[1] has proposed that how to interact with the programmable fabric hardware accelerators through python. For obtaining the best performance the leveraging efficient libraries is been used.
The PYNQ hold up HDMI and Audio inputs and outputs, together with two 12pin, PMOD connectors and an Arduino-compatible connector interact with Arduino shields.
Assess porting the system to the recently released Xilinx Zynq Ultra Scale + FPGA which incorporate four ARM A53 application processors and two ARM R5 real-time processors. Open CV version is been used to develop the process.

B. A Method of Optimizing Django Based On Greedy Strategy
[2] Presents a greed algorithm to minimize fragments by exploring the non-container object management. And produce Django framework to develop a web.
It has two models namely,
a.An greedy algorithm for non-container objects management
b. Characteristics of greedy-based model.
In this method it has three cases when freeing an object .It saved 10% of memory compared with optimized and also processed three defects of Python VM's integer management.
C. A Prototype Implementation on Real-Time Point-of-Sale System Using Open Source Technologies.
[3] Represents the point of sale (POS) or point of purchase (POP). And also handling added features like Inventory management or supply chaining, Staff Management, Hours tracking, Business Intelligence.

Supporting protocols are,
a. MQTT.

b. AMQP.
In this approach, the protocols been authorize in any IOT. AMQP and MQTT support with RabbitMQ message broker.

D. A Low-Effort Analytics Platform for Visualizing Evolving Flask-Based Python Web Services
[4] Proposed a Flask Dashboard library to supports the developer to enlarge performance of their services.
It is implemented as two-tier architecture and use Zeeguu API. Having three main categories of visual perspectives,
a. Service Utilization
b. Endpoint Performance
c. User Experience
By executing this work, Flask Dashboard produce a low-effort service monitoring and easy to integrate. By implementing a bare-minimum web server it provides simplicity and flexibility.

E: Python as a Tool for Web Server Application Development
[5] Contemplate many web development using CGI or WSGI requires scratch from the building web applications.

Here, Two web framework are been used,
a.   Full-Stack Frameworks
b.   Non-Full Stack Frameworks
Python has labelled its use in numerous applications. Being a flexible language in a Procuring attention of web developers.
They are in unsafe to several Internet attacks while developing a web. Web application is developed by the help of web development frameworks   like Django, Pyramid, web2py

VI. CONCLUSION

This survey paper comprises of various python libraries and modules that are been used in web development. Python is a favorite among many developers for its strong emphasis on readability and efficiency.
Build more functions with fewer lines of code. Python is great for backend web development, data analysis, artificial intelligence, and scientific computing.

Python leads with dynamic programming language but having low running efficiency [2] three defects of Python VM's to improve the memory usage

Using Raspberry Pi and Ardiuno the performance gets increased while combining of both Python software and FPGA's to reach a broader community of developers [1].

It supports business model to reach more robust and successful prototype [3] Python has highly efficient libraries, such as OpenCV, FPGAs can still software develops gaining [1].

It offers flexible language and fast development of web based applications. It has few limitations [5],

From the developers the utilization and performance are very little. In python web applications has limited or no budget for their monitoring [4].

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