



Analysis of the Effect of Python Programming Language on Digital Marketing

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ABSTRACT

Python is a popular programming language. It was fabricated by Guido van Rossum, and released in 1991. Python Programming language helps to solve complex professional problems with computation thinking. In this paper we initially acquaint you with the applications of python programming in the varied facets of marketing. This paper discusses the reasons behind python being credited as a suitable programming language for digital marketing and also examines the effect of the python programming language on digital marketing.

Keywords –*Digital marketing, Python programming language, Search Engine Optimization.*

1. INTRODUCTION

This paper is going to unravel the effect of the Python programming language on digital marketing. Digital marketing has transformed itself into a highly advanced and data-oriented version powered by innumerable business intelligence tools and platforms. Contemporary marketing strategies are steeply influenced by intense data analytics based on artificial intelligence and creative marketing. The fundamental aim of marketing strategies is to conquer the marketing return on investment (MROI) in the quickest and efficient way, which we won't be achievable without the utilization of the latest technologies like Python or other technologies for marketing automation and data analysis. Majority of the data processing jobs can be efficiently automated with the aid of machine learning and data science. Python programming language is the best choice for such activities since it supports a dynamic type system as well as automatic memory management. It encapsulates a huge and comprehensive standard library. Python improves marketing campaigns by addressing mistakes that are inadvertently made by marketers, including inefficient keyword management, results tracking errors, inaccurate ROI calculations and even content market optimization.

2. MATERIALS AND METHODS

Data from a myriad of established sources, mainly websites, was analysed and compiled data was fabricated. This derived data consisted of miscellaneous graphs, charts, case studies, expert reviews from marketing and technical fields and other crucial information facets in accordance with the subject of research. The methods for the research majorly encapsulated deriving data from varied external sources, interpreting graphs and charts, analysing case studies, summarizing essential information from multiple sources and consequently concluding the analysis of the effect of Python programming language on digital marketing.



3. RESULTS

Utilizing Python programming language as an aiding tool for marketing entails varied perks that enable efficient repetitive data gathering and management task. Comprehending how to use Python could aid to turn those repetitive tasks into the automated ones. Fabled examples of facets where Python could be utilized for include:

- Filling out data forms
- File cleaning
- Renaming multiple files
- Managing multiple files
- Gathering data
- ROI calculations
- Customer segmentation

All of these tasks could be effortlessly automated with the help of Python, fabricating greater time for marketers to focus on other crucial tasks.

- Python supports powerful libraries from which digital marketer carry out data mining, data processing, summarizing and reporting.
- It has features that support both administrative and managerial purposes.
- Python provides information security and integrity which is important for digital marketing.
- Python helps in improving Search Engine Optimization (SEO).
- Python works well with various web servers and is compatible with all major Operating Systems (OS).
- Python codes have the ability to run through the data and consequently integrate, process and visualize it into a meaningful version that aims to benefit the digital marketers.

4. DISCUSSION

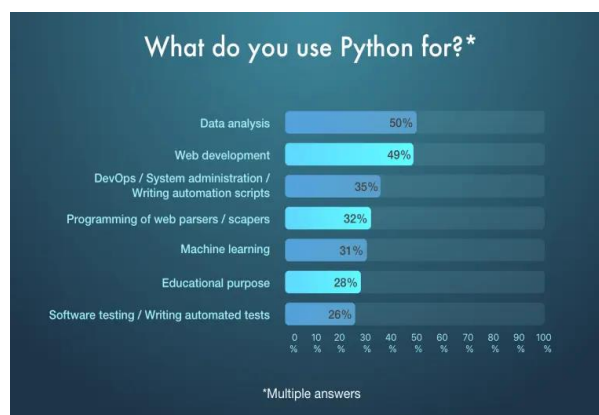
Due to the myriad of functionalities and ease of use of comprehension, many businesses have begun hiring Python developers to assist their digital marketers. Python's scalability, easy syntax, large number of analytical libraries, etc. has boosted its value in every facet of digital marketing. Right from eliciting web development to digitizing a business on the online platform to offering advanced data visualization techniques for promoting the business's growth, Python excels at all. With the incessant growth of technology in the current era, the marketers aim to digitize their businesses explicitly leading to the increased implementation of a high-level and ardent programming language like Python.

The following graph indicates explicitly that Digital Marketing (ranks 2nd in the list with 87%) and Data and Insight (ranks 3rd in the list with 85%) are fabled skills for marketers today and both of these skills demand efficient usage of an advanced programming language like Python.



(Source: <https://www.marketingcharts.com>)

Data and insights are the key sources to implement data analytics through intelligent data collection and analysis to consequently boost a business’s revenue. Data analytics is one of the most fabled applications of the Python programming language as seen from the graph below:



(Source: <https://www.cleveroad.com/blog/python-vs-swift>)

The graph indicates that data analytics is the most prominent application of the Python language with a score of 50% and thus this proves the direct relationship between business analytics and Python. Further, web development (which stands 2nd in the list with a score of 49%) is a rudimentary facet of digital marketing since it primarily introduces the business to the aura of digitalization. Hence, this attests that Python eventually fabricates a positive effect on digital marketing.

4.1 Major Digital Marketing Applications of Python

- **SEO Optimization:** The quantity of the data that today’s marketers work with is incessantly boosting. Thus being able to efficiently and critically analyze this data will aid to solve a myriad of complex issues in a shorter span of time. Thus, this consequently allows saving our crucial time and enables marketers to be



more productive in undertaking other significant SEO tasks. These factors merged have given rise to the steep growth in the demand of Python language among the SEO professionals. The aptness to comprehend data in a better way would aid us do our jobs better as well as enable us to make smarter data-driven decisions. The advanced features, ardent libraries, capability to automate tasks, etc. help the apt Python code to automate the SEO process.

- **Analyzing Customer Feedback:** In the era of social networks, we produce vast amounts of data on a daily basis. For instance, a company's Instagram page can potentially serve as a crucial resource for encapsulating comments, inbox messages and reactions. The other potential sources of data could be evaluations and reviews of the consumers in the e-commerce platforms like Lowe's and Amazon. Natural language processing with the aid of Python ensures automation of the task of analyzing custom feedback efficiently and ardently.
- **Monitoring and Analysis of Campaigns:** You can easily develop some short programs to monitor and analyze different parts of it. Python entails varied abilities related to data analytics, mathematical programming and engineering which enable you to fabricate the required analysis and monitoring tools for your campaigns.
- **Repeated Marketing Task Automation:** There are innumerable repetitive activities monitored and performed by a digital marketer amidst his work. These tasks tend to utilize large amount of time if they are performed manually. But, Python aids digital marketers to effortlessly automate these tasks by creating small, custom software programming.
- **Creating Custom Marketing Campaigns:** The fabrication of the varied marketing campaigns comprises of video marketing, social media marketing (Instagram, Facebook, Snapchat, Pinterest, etc.), email marketing, content development, on and off page SEO optimization, Google Ads, etc. This demands an advanced and highly efficient software tool to merge and process all of these facets of the marketing campaigns. The varied Python libraries, clustering algorithms, packages for visualization of data, etc. aid to develop custom marketing eminently that boosts the revenue of the business.

5. CONCLUSION

In this paper, we have introduced the Python programming language as an appropriate choice for learning, digital marketing and global programming. The paper has highlighted the characteristics, features, and forms of programming support offered by python. According to the characteristics, we conclude Python programming as a fast, portable and open linguistic programming language that supports alternative technology. The Python language allows the efficient implementation of algorithms suitable for digital marketing. The paper has cited the explanation on why the python language is appropriate for Digital marketing based on the knowledge obtained from trusty magazines and websites.

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