

# Survey Paper on Usage of Various Coding and IT Discussion Platforms

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**Abstract** - With the advent of computer, tedious tasks which required a lot of man power and time became easy and faster to do. It exponentially improved the productiveness of day-to-day activities. With the discovery of internet and digital electronics, the mode of communication became much simpler, quicker and instant. People started opting and learning it as their course work to understand how computer works. Which lead them to learn various coding languages and discuss, invent and implement various efficient algorithms to solve real world problems. Coding is one of the most important aspects of development. Eventually gazing upon the importance of coding, people in these industries developed various platforms where one can solve problems via coding. A great ever-increasing community got created where people could get their doubts clear, learn and understand the concepts with more clarity which came to known as Discussion form. In this paper we have described about various usage and productiveness of such platforms in people's life. For instance, CodeForces, HackerEarth, HackerRank, GeeksforGeeks, Stack Overflow are few among many platforms related to coding and discussion form. In this paper we have discussed about these such platforms.

**Key Words:** Coding Platforms, Discussion forms

## 1. INTRODUCTION

Coding is basically a set of instructions or programs written in a programming language (a language developed in relation with English for the ease of people) which is followed by the systems to complete a respective task. As time passes, people became better and efficient in developing various effective and fast algorithms (procedure to solve a problem/task). This is because interested people started giving much time and practiced and manipulated various techniques to come across and deduce their own efficient way to solve different kinds of problems. Practicing the art of coding is vital for one to become good at it. And to do this solving various categories of questions and discussing it with others is the solution of becoming good at it. With this in mind, online platforms have been created to promote coding. These platforms helped to create a vast community across the globe. Anyone with an interest in coding can practice, learn and increase their skills via indulging upon platforms like these. To name some, following are the platforms we have discussed in this paper:

- a) CodeChef
- b) CodeForces
- c) HackerEarth
- d) HackerRank
- e) Stack Overflow
- d) GeeksforGeeks
- e) StackExchange
- f) LinkedIn
- g) Reddit

## 2. Coding Platforms

Coding Platforms are interface (basically a dynamic website) on which people can create an account of their own and can solve various different types of problems available on the platforms. They can even check out their personal growth in their account profile. These platforms update their database of questions on a regular basis, so that audience are exposed to different categories of problems ranging from too easy to too hard. So that everyone could solve a problem at their own levels and get upgraded in the process of learning.

Below are the few such platforms discussed.

### 2.1 CodeChef

CodeChef is a competitive programming platform created as a platform to assist programmers elevate their skills within the world of algorithms, programming, and contests. It provides a platform for programmers no matter how apart they are geographically, they can compete, learn and have fun in the process. They promote the culture of learning and friendly programming, with an enormous community of drawback curators. Problems related to coding are separated into different categories based on your skill level.

#### Features:

- Practice
- Compete
- Discuss
- Host Contest
- Campus Chapter

CodeChef is one in each of the foremost necessary competitive programming platforms. They open their platform for anyone to host programming contest and a feature called field chapter as tool for various programming clubs across the globe to utilize it. It conducts minimum of 4 contest every month for people across the globe to promote enthusiasm and curiosity among coders. People on the platforms are marked with ratings and stars as per their performance in solving the questions and the timeframe took to solve it. Rating System is as follows:

<= 1399: 1 Star  
1400 - 1599: 2 Stars  
1600 - 1799: 3 Stars  
1800 - 1999: 4 Stars  
2000 - 2199: 5 Stars  
2200 - 2499: 6 Stars  
>= 2500: 7 Stars

## 2.2 CodeForces

CodeForces is a competitive platform where coders from all over the world can participate in various competitions having time limit conducted on the platforms. CodeForces has a vast huge databases of coding question where people can practice and solve questions. People can create groups of their own and can enjoy it as a sport known as sports programming. Competitive coding enthusiasts from all across the world participate in these contests. It also gives rating for each user as measure of how one performed in the contest.

### Features:

- Contests
- Gym
- Problem sets
- Host contests
- Groups

CodeForces is one of the great programming platforms to practice, learn and solve programming languages and have fun in the process. Moreover, it provides a platform where people can participate in contest to solve special categories of problems and are ranked based upon their performance and later on can introspect their strategies. It's contest which is approximately ranges from 2 to 5 hrs on average helps people in their time management and increase their solving power. When people take part in the contest they lower or increase their rating as per their problem-solving skill.

## 2.3. HackerEarth

HackerEarth is a popular coding platform that features over 10,000+ programming challenges and 1000+ hackathons. It is also trusted by hiring managers across many companies. It has vast community of developers over 3 million across the globe.

### Features:

- Practice
- Discuss
- Compete
- Participate on hiring challenges

Various companies put up their hiring challenges to hire people across the globe. In this platform one can find

categories of topics/concept to practice upon. One can choose a category and solve/practice questions on it.

## 2.4. HackerRank

HackerRank is also one of the leading competitive programming websites where one can practice and learn coding. It also has vast databases of problems. It has also a feature to host contest. Which is very helpful at academics' front as teachers or clubs can host various competition for their academic purpose. Companies also put up their contest for hiring purpose. Many companies collaborate with it for their hiring process.

### Features:

- Practice
- Certifications
- Compete
- Jobs (For hiring and securing)
- Leaderboard

Leaderboard shows the ranking globally as well as in particular contest.

## 3. Discussion Forms

Discussion forms are one of the great learning platforms ever created. People could ask about their doubts and get answer from eminent persons. Making discussion form online make the reach globally. One can get answers from people across the globe which isn't possible in offline. One can reach out to a desired person who is much more experienced to clarify his/her doubts. Wide range of opportunities presents itself on platforms like these. One can understand concepts with different individual's perspective. Few platforms have been discussed in this paper.

Below are the few discussion platforms discussed:

### 3.1. Stack Overflow

Stack Overflow is a question answer platform for IT enthusiast. It is visited by more than 120 million people each month. One can create an account of its own to ask and answer questions. Based upon the involvement, level, other's reaction to the question and answer, points and are given to them. People can upvote and downvote the answer based upon their level of understanding. It has helped a lot of people to get their doubts clear as well as more conceptual clarity occurs via discussion.

Stack Overflow's users can earn reputation points and "badges". Users can unlock new privileges with a rise in reputation like the ability to vote, comment, and even edit alternative people's posts. Stack Overflow has Jobs section to provide assistance to developers in finding their next

professional opportunity. Stack Overflow assist companies to promote their business via advertisement and connecting employer to employee. It helps companies to hire candidate which are open to such opportunities.

Stack Overflow is helping developers and technologist for the upcoming digitalized world. It is one of the 50 most visited website in the world.

### 3.2. GeeksforGeeks

GeeksforGeeks provides multi-services to the audience concerned. It has helped and guided a lot of people in coding and interview experience. Many topics related to IT have been explained nicely. People share about their interview experience in various companies which assist other applicants going through the process. One can also practice coding. Various practice problems in different categories/topic have been provided on the website. A lot of topics are explained in their discussion portal.

#### Features:

- Course
- Jobs
- Student discussion
- Tutorials

Courses are offered by them for assistance in placements and campus jobs and interview have been proved very beneficial for many people.

One can become an editor and can also share their experience and knowledge on the platforms.

### 3.3. Stack Exchange

Stack Exchange platform is one amongst the reputed active question and answer communities on the internet. It allows people having account to ask and answer questions on various topics ranging from computer programming, music, gaming, mathematics, writing, graphic design to photography. Stack Exchange has a vast community of users worldwide. A lot active users post question and answer on a daily basis.

People can use it in a simple manner. User need to create an account where he needs to fill up certain basic details like name, password etc. then after successful creation of an account, one can post questions and answer other questions and can upvote or downvote as per their perspective. However, while posting up question's user need to check if their questions is already present or not. If it is present question will be deleted automatically from the website and gets downvoted. Additionally, if user post questions in a wrong community, one can get his/her account banned.

### 3.4. Reddit

Reddit is the massive set of various categories of communities. People can create a community for their communication and promotion and discussion. One, after creating an account, can join communities known as subreddits. So various communities of IT and coding is present on the website. One can become a member of it and post their thoughts and doubts. Post are upvoted and downvoted as per individual's perception. With net vote (Total upvotes – total downvotes) points/rating is allocated to it known as karma points.

Various communities comprise thousands and millions of people. It has a massive community across the globe. One can create a subreddit if they meet certain criteria like having minimum number of karma point, should be quite active etc.

People can present rewards to other users by buying reddit coin, a gesture of supporting such large community.

It is a self-regulating market place of ideas. People widen their perspective by joining such huge community. They are able understand better and it changes the perspective of looking into the things. Reddit is seventh most popular website in US and 18<sup>th</sup> across the world.

## 4. Profesional Social Network

A professional social network dedicated to professionals. Where people can increase their global connectivity and help each other out.

LinkedIn is one such platform. Below it has been discussed:

### 4.1 LinkedIn

LinkedIn is a social network for professionals. One has to create account and fill up their details such as education, skills etc. People need to send connection request to each other. More the connections, more is global outreach. It helps to display resume, search for jobs, and enhance one's professional reputation by posting updates and interacting with other people. LinkedIn is free, but a subscription version called LinkedIn Premium offers features like online classes and seminars, as well as insights into who's searching for and viewing your profile.

It is a social media which is owned by one of the elite and biggest software company in the world i.e., Microsoft.

People need maintain their own profile account such as their current job status, what skills they acquire etc. which helps them to meet the right people at right time.

Companies have started their recruiting process with the help of LinkedIn. Various settings and option are given, which is extremely helpful for hiring process, by a LinkedIn if one needs to hire people. Candidates are now shortlisted via their profile (all the things they mentioned in the profile) and are save with long tiring process of Initial shortlisting process. It proves to be beneficial to both job seeker as well as job giver. Job giver now can shortlist those people only which are having skill for the required position and no unnecessary candidate. It saves a lot of time and energy on both sides.

With the help of LinkedIn, people can recommend the companies the right candidates required. Due to the global outreach, people get insights about the market and what technologies are trending and what all is required in the market. It also gives insights into the future technologies and trends.

Communication and know-how of the world is one of the vital aspects of people's life. It is an interface which assist in joining the pieces in the right place and where required.

### 5. RESULTS

These platforms have been created to empower the communities of IT. Digital devices have become an extension of an individual. It has increased the ability of humans. Be it instant communication, storing large warehouse of information, IT devices has made it possible.

Evans's data corporation recently published a data about number of developers across the world and estimated the number it will be in 2030. Below is the table.

**Table -1:** Number of software developer

| Year | Number of Software Developers |
|------|-------------------------------|
| 2018 | 23.9 million                  |
| 2019 | 26.4 million                  |
| 2023 | 27.7 million                  |
| 2024 | 28.7 million                  |
| 2030 | 45 million                    |

It suggests that in 2020 there were 26.9 million developers and expected to reach 45 million till 2030.

With this data we can easily infer that the coding has become much popular and still its community is increasing exponentially.

We can say that this popularity is one of the results of the presence of such coding and discussion platforms which

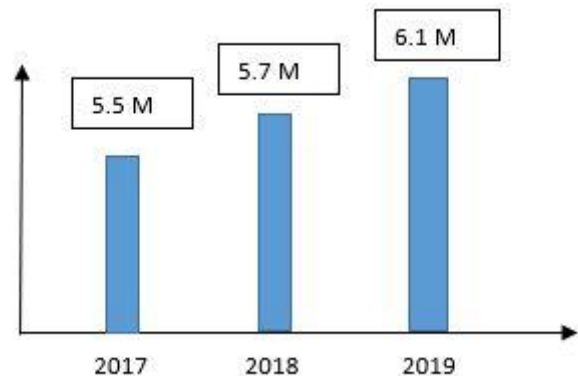
have connected people with various backgrounds to each other. The presence of such platforms has ensured the increment in the participation of people and helped them to gain the right skill and attitude required in the field of IT. People after spending time on such platforms, have increased and improved their skills and thinking ability. We asked question to various students in the college and most of them agreed that discussion and practicing coding on such platforms have improved their problem-solving skills as well as time management. Also, participation in discussion form have broaden their perspective due to the occurrence of global interaction.

Providing warehouse of different categories of question to practice in numerous language (for instance C++, C, Java, Python etc.) online promote the community across the globe. Without spending hefty money, one can easily practice and learn via these platforms.

Since few years Europe has been experiencing steady growth in number of IT professionals. According to State of European Tech report 2019, this surge is due to nearshoring model which allows companies to find IT partners in both geographical and cultural proximity.

**Chart 1 -Developer in Europe year-wise**

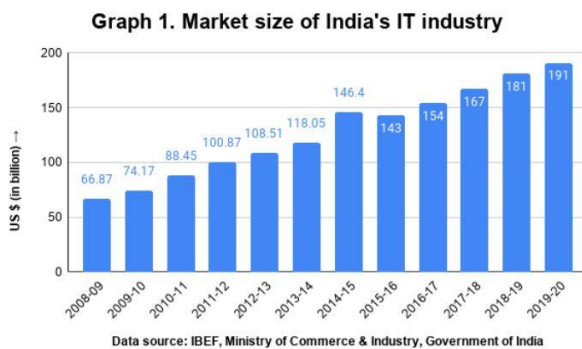
• M- Million



Online platforms like discussed above and others have assisted people to connect with each other whenever required. As world is becoming digitalized day by day it requires people to have some basic understanding of how it works moreover large number of people will be required to work, maintain, update and watch if the infrastructure of various services is in alignment or not. Demand of workers will provide employments.

IT (Information technology) industry's contribution to India's GDP has increased from 1.2% in 1998 to 7.7% in 2017. It is one of the top industries that is blooming across the world especially in India.

**Chart 2 – Year wise India’s IT market**

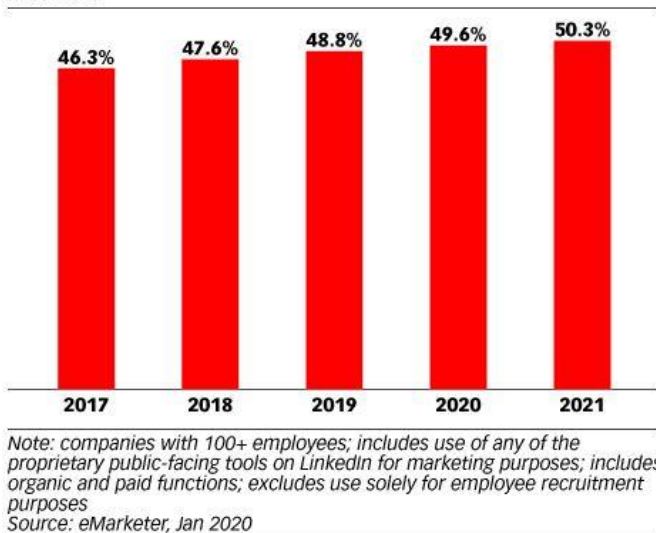


And coding is one of the building blocks of this industry. In fact, without coding efficient algorithms, it would not have been at peaks.

Platforms mentioned above like LinkedIn and others have enhanced the process of hiring in a positive direction. People from across the globe can know when and where the job openings are taking place. Such platforms also provide the ability to conduct various coding test or hackathon which helps them to filter out the right person as per their requirement in the company. It has removed the tedious process of hiring which used to take place. Around 40 million users search for jobs every week in LinkedIn. 3 people are hired every minute through LinkedIn. It made the process of job seeker and job provider much simpler and direct.

**Chart 3 - LinkedIn Usage by US marketers**

**Share of US Marketers Using LinkedIn, 2017-2021**  
% of total

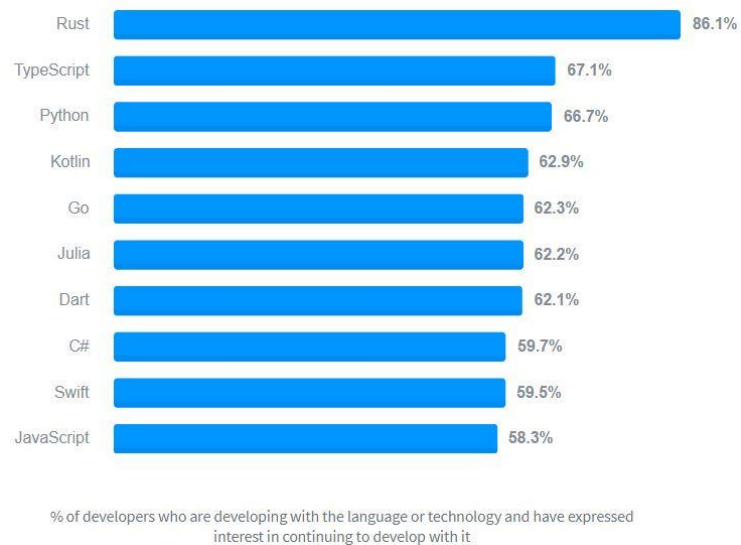


With the use of such coding and discussion platforms market comes to know about the popularity of various computer languages. Due to the continuous participation, one can know the stats about which programming language people are more comfortable and are preferring which changes

from 2 to 3 years. Most of these websites produce their annual report about programming languages, market etc. which really helps looking and understanding the insights about industry. It helps in the estimation and prediction of path where industry is heading towards.

For instance, In Stack Overflow developer survey report 2020 suggest the most beloved programming languages used by the developers as per their report. Below are the stats.

**Chart 4 – Beloved languages by Stack Overflow 2020 survey**



These platforms shed light upon various aspects going on in the industry which really become helpful to learn and increase one’s knowledge and skills. Joining such communities broaden our horizon of thoughts which guide us in a right pathway in professional as well as personal life.

## 6. CONCLUSIONS

IT infrastructure has become an extension of humans. Various platforms are now being created and had been created to make the life easier for people as well as developers. Coding platforms and discussion forms are such few among many platforms which aid students and developers to learn a lot of technical stuff and gain experience in the process. Various contest held on such platforms boost up the competitive environment in a positive manner. One can learn various techniques to solve problem by having discussion and understanding the approach they took which help oneself to re-evaluate their technique and compare. A problem is solved by various people by numerous techniques which lead to broaden perspective and invent something new sometimes.

As the market as a whole is shifting towards more digitalization, learning code at a basic level, is becoming

more important. Technology is ubiquitous in today's society. Understanding computers and learning the fundamentals of coding helps students to develop an appreciation of how things work. It shows a new aspect of applied mathematics which is used to solve problem in a creative and logical manner. Student can eliminate the fear to code as they would start cultivating the habit of coding right from the beginning. Integrating the features in one single platform brings in a uniformity rather than installing multiple languages to code and learn. Solving different types of challenges and puzzles on such platforms can help the students to become a better problem solver. Such Platforms have really helped to push the world in the correct forward direction.

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