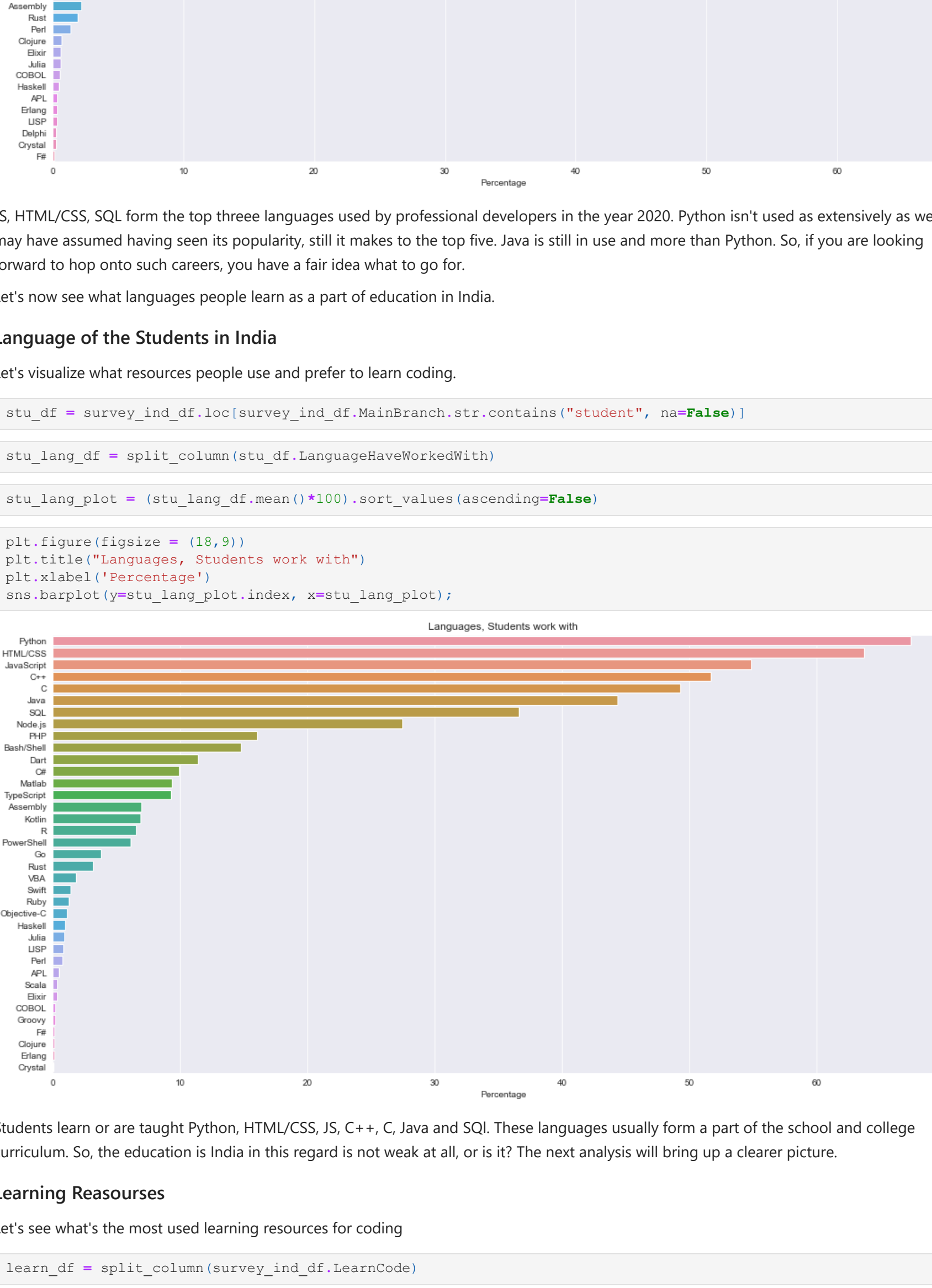


This instates the fact that Python is the most easy-to-learn language. And why not, Python is a general purpose language which suits the needs of the hobbyist, without any tradeoffs as it is a very powerful and versatile language. Though not as fast, but hobbyists do not really go for efficiency.

### Language of the Developers in India

Let's find the language that professional developers use, i.e. which languages have a good market demand in India in 2020.

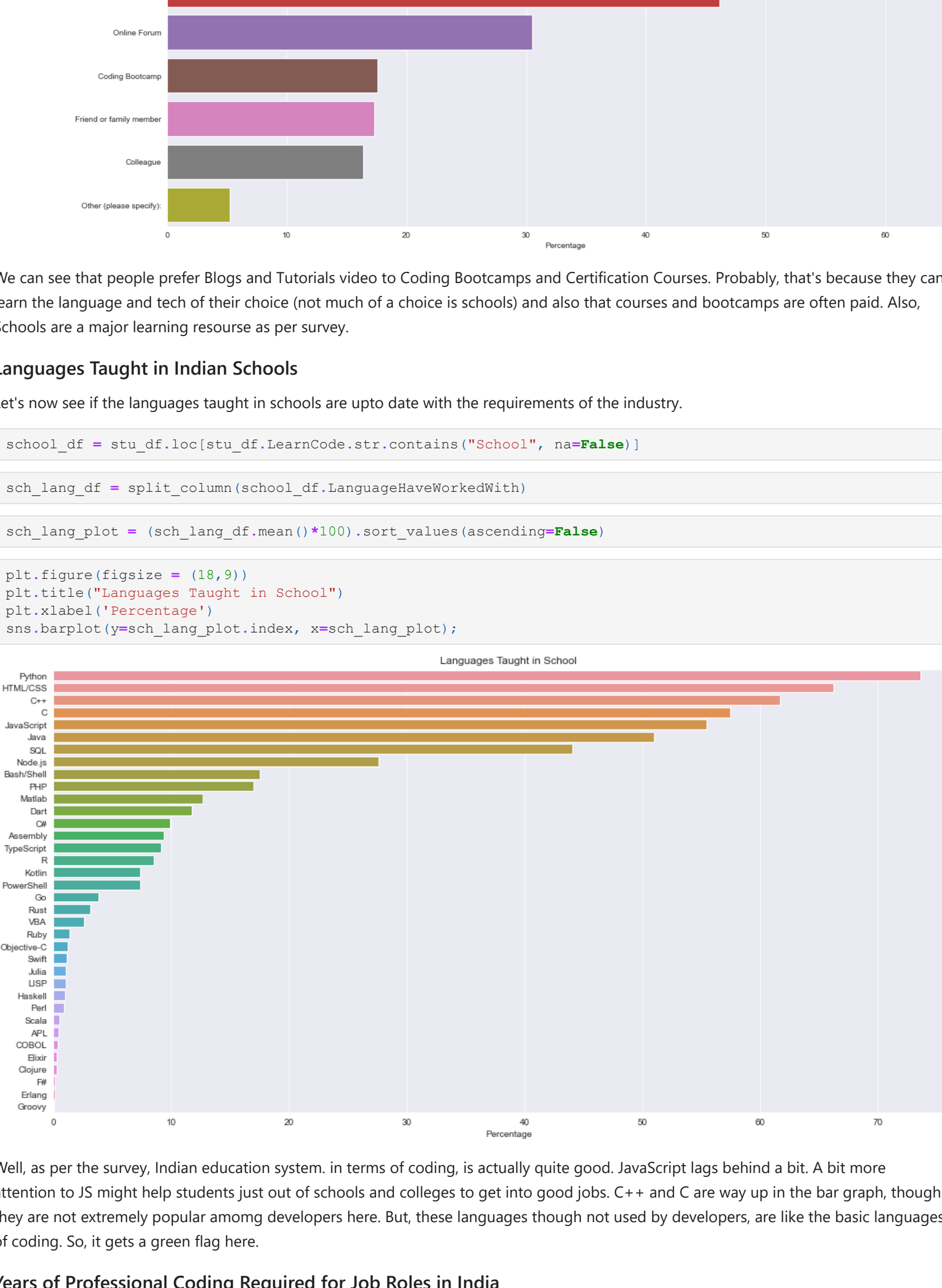


JS, HTML/CSS, SQL form the top three languages used by professional developers in the year 2020. Python isn't used as extensively as we may have assumed having seen its popularity, still it makes to the top five. Java is still in use and more than Python. So, if you are looking forward to hop onto such careers, you have a fair idea what to go for.

Let's now see what languages people learn as a part of education in India.

### Language of the Students in India

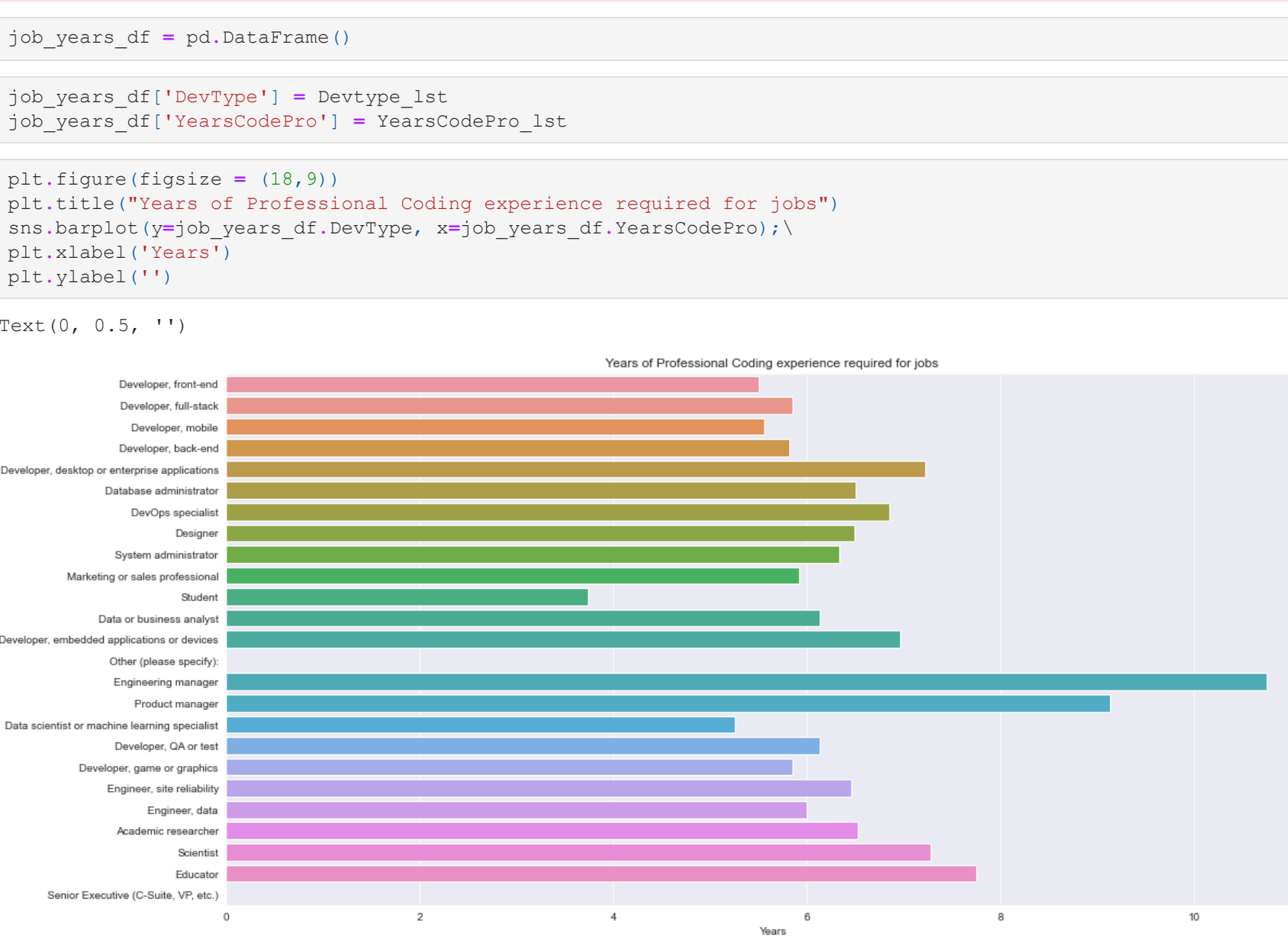
Let's visualize what resources people use and prefer to learn coding.



Students learn or are taught Python, HTML/CSS, JS, C++, C, Java and SQL. These languages usually form a part of the school and college curriculum. So, the education in India in this regard is not weak at all, or is it? The next analysis will bring up a clearer picture.

### Learning Resources in India

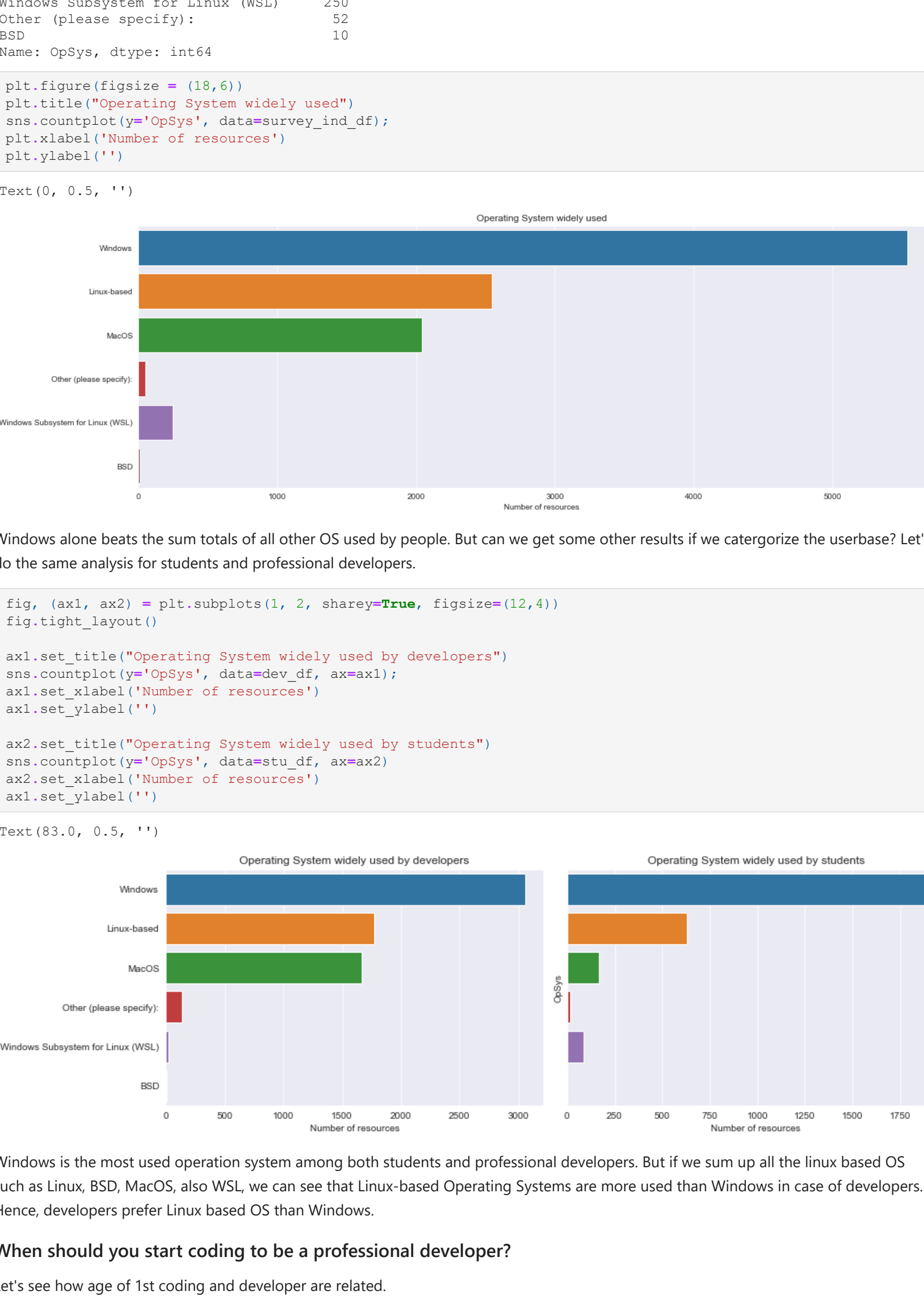
Let's see what's the most used learning resources for coding



We can see that people prefer Blogs and Tutorial video to Coding Bootcamps and Certification Courses. Probably, that's because they can learn the language and tech of their choice (not much of a choice is schools) and also that courses and bootcamps are often paid. Also, Schools are a major learning resource as per survey.

### Languages Taught in Indian Schools

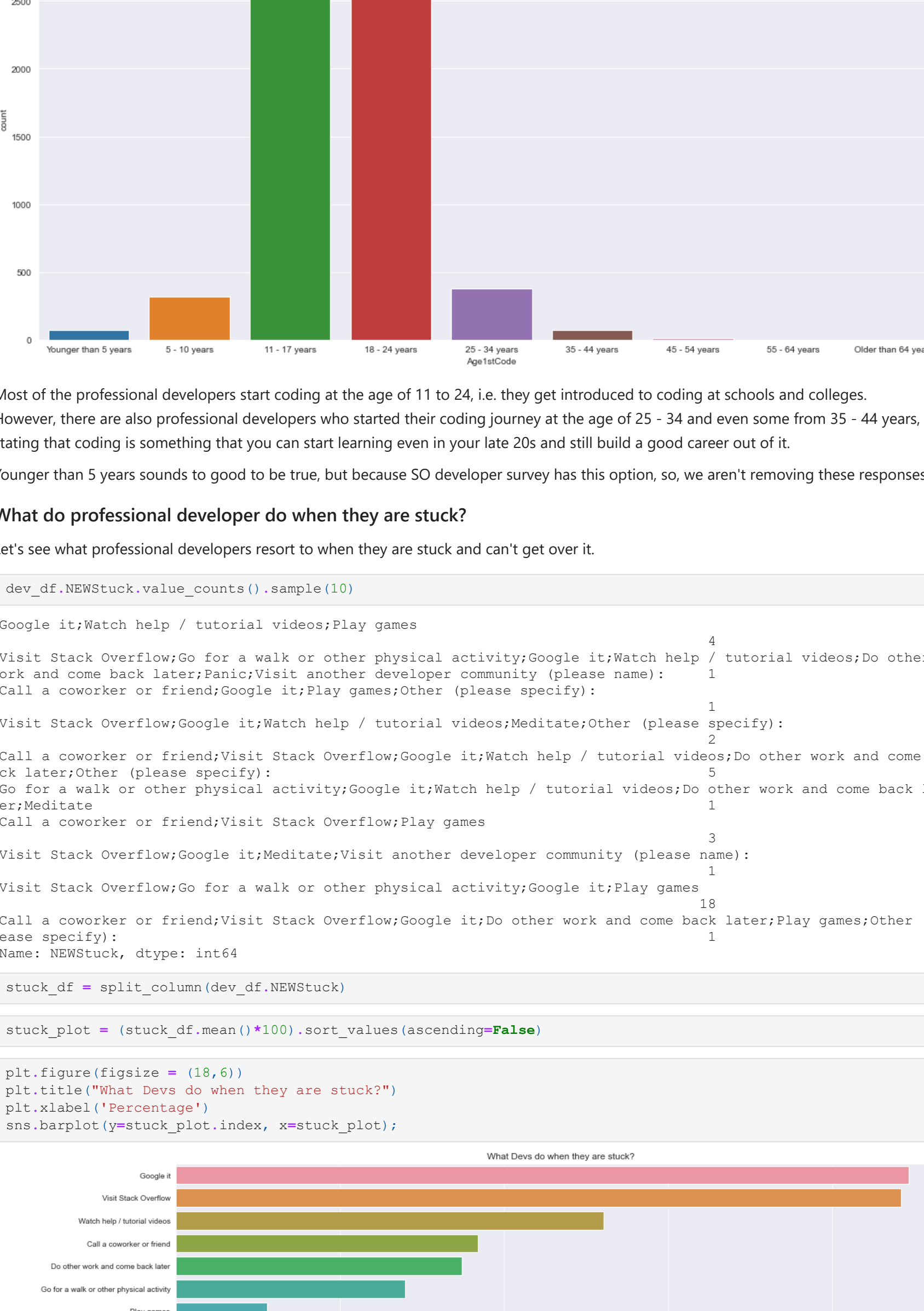
Let's now see if the languages taught in schools are upto date with the requirements of the industry.



Well, as per the survey, Indian education system, in terms of coding, is actually quite good. JavaScript lags behind a bit. A bit more attention to JS might help students just out of schools and colleges to get into good jobs. C++ and C are way up in the bar graph, though they are not extremely popular among developers here. But, these languages though not used by developers, are like the basic languages of coding. So, it gets a green flag here.

### Years of Professional Coding Required for Job Roles in India

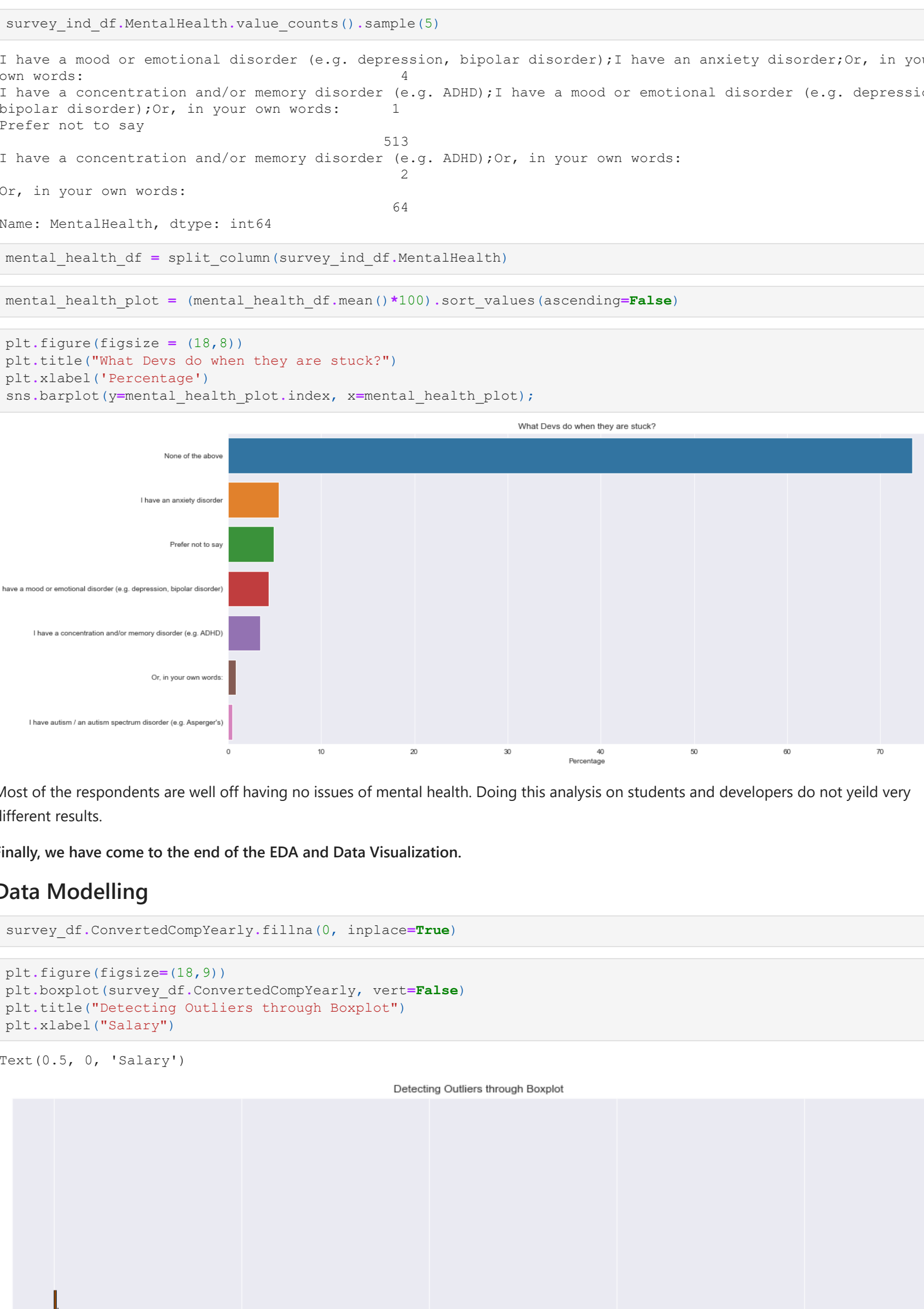
How many years of professional coding are needed for various jobs?



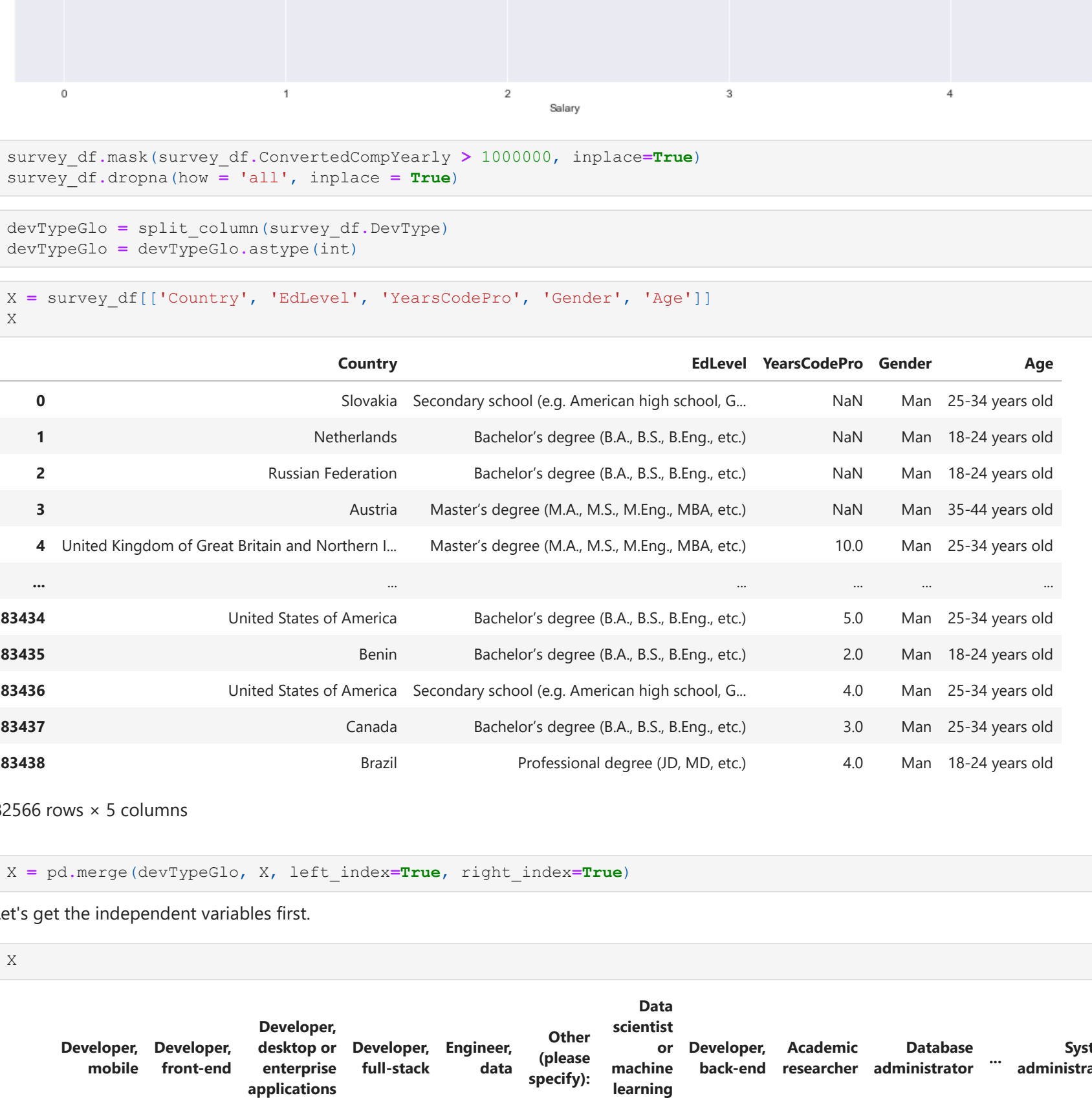
We can infer that Managerial positions (like Engineering Manager, Product Manager) require the most amount of professional coding experience, followed by Educators. Senior Executive could have been the most demanding of professional coding experience, but sadly we do not have any Senior Executive respondents from India.

### Operation System widely used by developers and students

Let's see which operating systems are widely used around here.



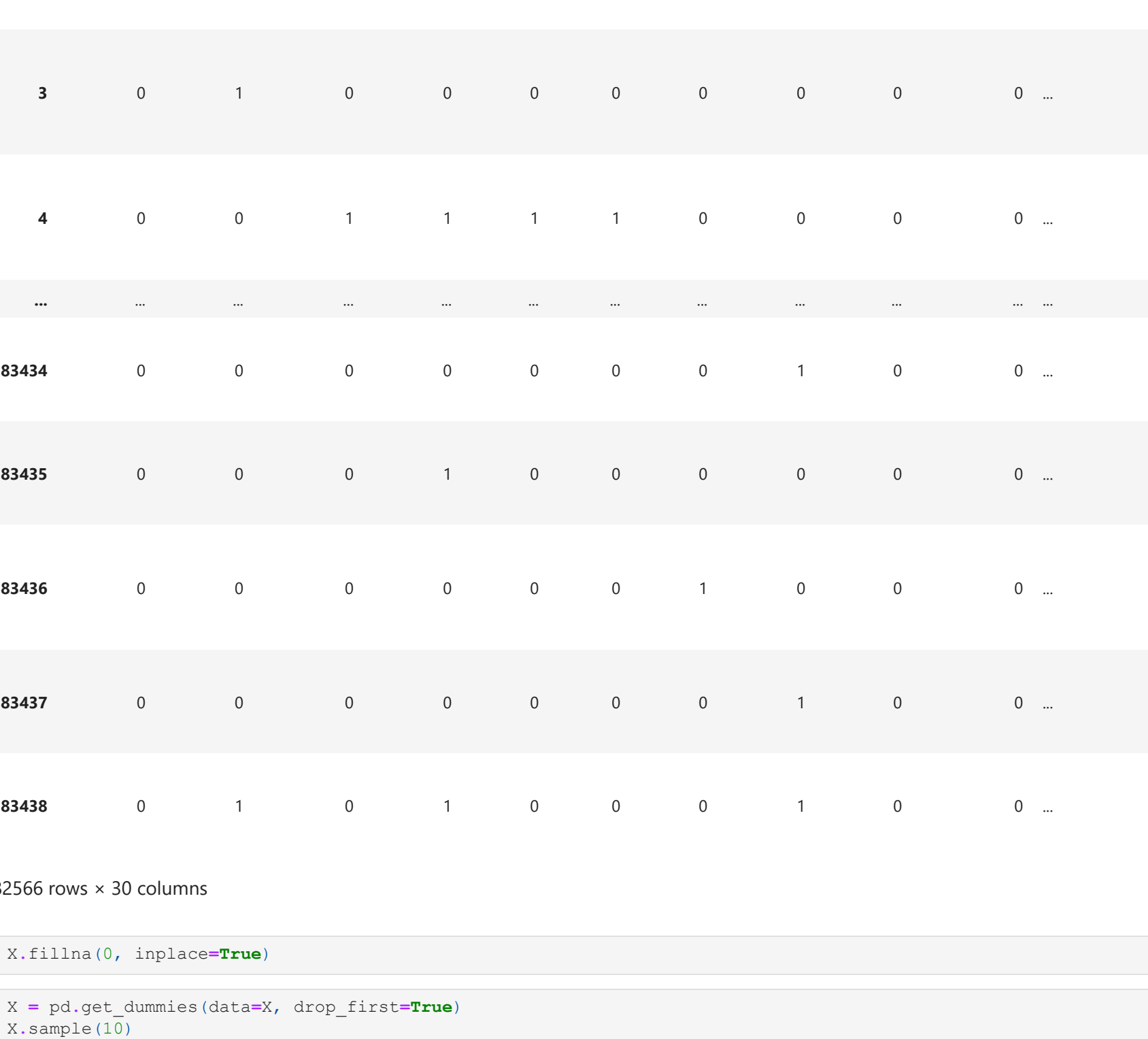
Windows alone beats the sum totals of all other OS used by people. But can we get some other results if we categorize the userbase? Let's do the same analysis for students and professional developers.



Windows is the most used operation system among both students and professional developers. But if we sum up all the linux based OS such as Linux, BSD, MacOS, also WSL we can see that Linux-based Operating Systems are more used than Windows in case of developers. Hence, Developers prefer Linux based OS than Windows.

### When should you start coding to be a professional developer?

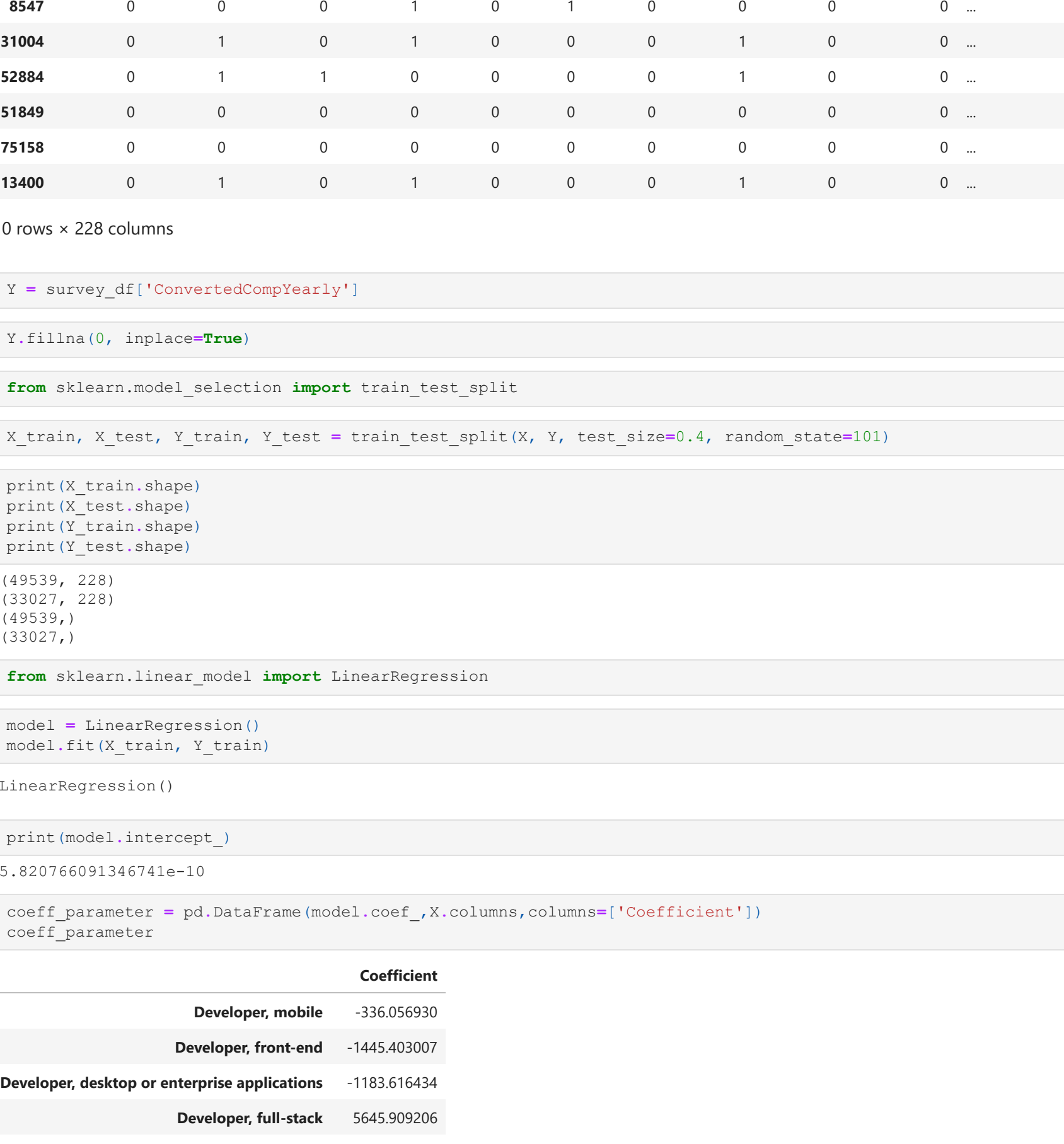
Let's see how age of 1st coding and developer are related.



Most of the professional developers start coding at the age of 11 to 24, i.e. they get introduced to coding at schools and colleges. However, there are also professional developers who started their coding journey at the age of 25 - 34 and even some from 35 - 44 years, stating that coding is something that you can start learning even in your late 20s and still build a good career out of it. Younger than 5 years sounds to good to be true, but because SO developer surveys has this option, so, we aren't removing these responses.

### What do professional developer do when they are stuck?

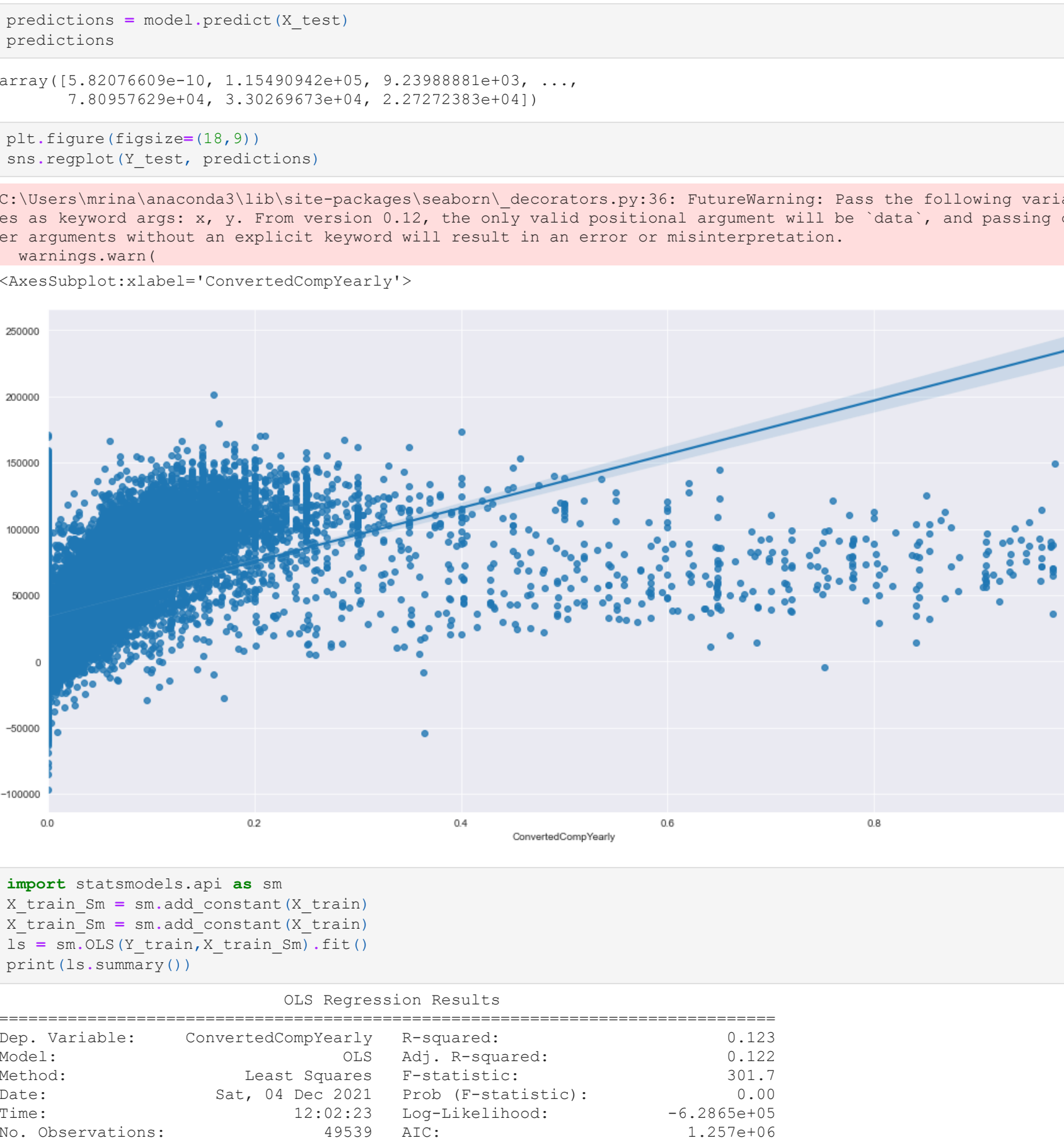
Let's see what professional developers resort to when they are stuck and can't get over it.



Googling the problem and visiting stack overflow are the most widely used methods of finding a solution. Devs when stuck on something, they tend to solve it asap rather than taking a break, going for a walk, playing games or meditating.

### Mental Health Issues

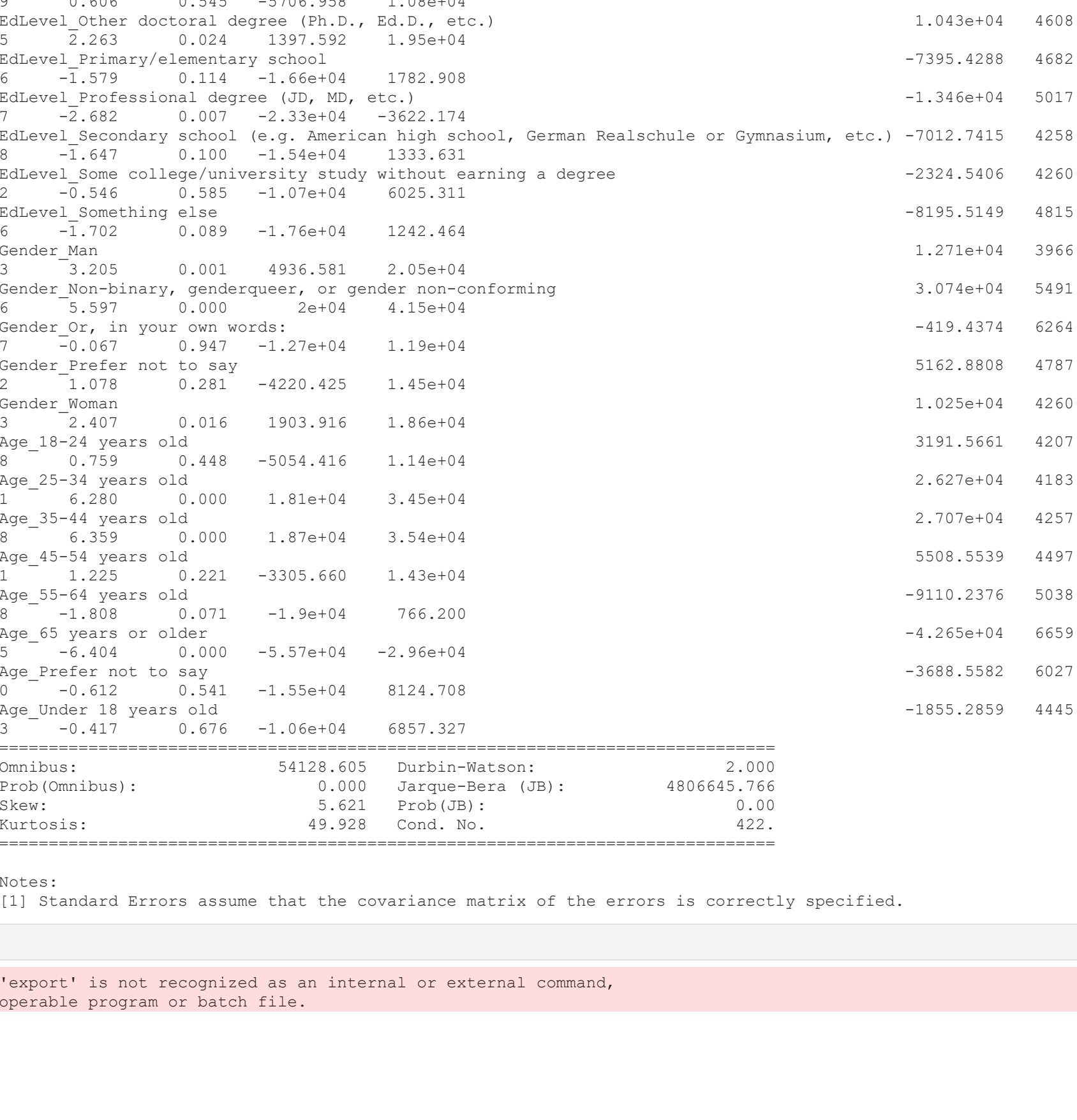
Let's see the mental healths faced by people in India.



Most of the respondents are well off having no issues of mental health. Doing this analysis on students and developers do not yield very different results.

Finally, we have come to the end of the EDA and Data Visualization.

### Data Modelling





## Inference and Conclusions of Stack Overflow Developer Survey 2021

1. India and USA respondents from around one-fourth of the total survey respondents. People from India and USA are also more likely to respond to the survey as the survey is available only in English. There are total 180 countries in the survey responses.

Now, let's see some India specific stats :-

1. There is very less representation from the females and the other (non-binary, genderqueer and gender non-conforming) genders. The field is male dominated.
2. In India, there are very few non-binary gender people according to the survey and a lot of people who are not comfortable to share their gender (as compared to the world). Hence, the third gender concept is still quite alien in India and because people from other genders do not accept them easily.
3. We can safely assume that college students and job freshers and trainees visit stack overflow for solving their problems (or, that young people are more likely to take surveys than middle aged and old people).
4. People in India had a later exposure to the internet and related stuff.
5. With the years of professional coding increasing, we can clearly see that people with more coding experience visit SO less frequently.
6. Few decades back, there weren't many woman or non binary gender in the community. It used to be a male dominated community. But slowly the representation of the other genders are getting better, especially in the last 2 decades.
7. The unemployed people in India are majorly Bachelor degree holder or those who have completed secondary school. Even after Masters degree, it seems people are still struggling to get into jobs.
8. It is better to go for a professional degree than masters or associate degree if a person is looking for a job after the degree's completion.
9. As SO is mainly a forum for develop related stuff, we expected to see a high percentage of developers.
10. JavaScript, HTML/CSS and Python are the most worked with languages of 2020 in India and as well as worldwide. COBOL is the least worked with language worldwide, but across India, it is more used than languages like F#, Delphi, etc. JS, Python and HTML/CSS are again the languages people wanna work with.
11. Rust is the most loved language globally and also in India.
12. The most worked with database of the year 2020 is MySQL both across India and Worldwide. The three out of the top four database suites are SQL-based. Only the second is a NoSQL i.e. MongoDB. Globally, PostgreSQL is the database people wanna work with the most. But, in India, people are looking forward to work with MongoDB, which is third on the list globally. NoSQL is gaining attention in India.
13. Globally and in India, people are loving Redis.
14. AWS is the most loved Cloud Platforms which is quite expected, IBM Cloud or Watson is the most dreaded Cloud platform, globally as well as across India.
15. Python is a general purpose language which suits the needs of the hobbyist, without any tradeoffs as it is a very powerful and versatile language.
16. JS, HTML/CSS, SQL form the top three languages used by professional developers in the year 2020. Python isn't used as extensively as we may have assumed having seen its popularity, still it makes to the top five. Java is still in use and more than Python
17. Students learn or are taught Python, HTML/CSS, JS, C++, C, Java and SQL.
18. We can see that people prefer Biggs and Tutorial's video to Coding Bootcamps and Certification Courses.
19. Indian education system, in terms of coding, is actually quite good. JavaScript lags behind a bit. A bit more attention to JS might help students just out of schools and colleges to get into good jobs.
20. Managerial positions (like Engineering Manager, Product Manager) require the most amount of professional coding experience, followed by Educators.
21. Developers prefer Linux based OS than Windows.
22. Most of the professional developers start coding at their teen. However, there are also professional developers who started their coding journey at an older age. Therefore, coding is something that you can start learning even in your late 20s and still build a good career out of it.
23. Googling the problem and visiting stack overflow are the most widely used methods of finding a solution when they are stuck.
24. Most of the respondents are well off having no issues of mental health.

### The Way Forward

- Web Frameworks, Collaboration tools, etc can be analysed for for Web Frameworks loved, Collaboration tools Loved, etc.
- The Language of the Hobbists, Professional Developers and Students can be repeated on Cloud Platforms, Web Frameworks, Collaboration Tools, DBMS, etc. to get more results.
- Compensation can be compared for every country and every profession.
- Like Gender, Sexuality may be compared.
- Years of professional coding may be compared with Compensation.

### End of Project : Exploratory Data Analysis Using Python