



**Visvesvaraya Technological University**  
“Jnana Sangama”, Belagavi-590018 Karnataka



**Ref: CPC Drive – 2018/ 111**

**Date: 4<sup>th</sup> August, 2018**

**Opening for  
BE/ B.Tech/ ME/  
M.Tech/MCA/  
MSc)**

**2019 YOP**

**VTU CPC**

**Supports the\*  
Recruitment drive  
For TCS**

**TATA**  
TATA CONSULTANCY SERVICES

**DRIVE  
111**

### **Company Profile:**

**Tata Consultancy Services Limited (TCS)** is an Indian multinational information technology (IT) service, consulting and business solutions. It is a subsidiary of the Tata Group and operates in 46 countries

TCS is one of the largest Indian companies by market capitalization. TCS is now placed among the most valuable IT services brands worldwide. TCS alone generates 70% dividends of its parent company, Tata Sons. The parent group recently decided to sell stocks of TCS worth \$1.25 billion in a bulk deal. In 2015, TCS is ranked 64th overall in the Forbes World's Most Innovative Companies ranking, making it both the highest-ranked IT services company and the top Indian company. It is the world's 2nd largest IT services provider. As of 2017, it is ranked 10th on the Fortune India 500 list.

**Website :** <https://www.tcs.com>

We are happy to announce that TCS has re-looked at its Recruitment model by enabling its access to each aspiring engineering student in the country.

As you must be aware the students will get an opportunity to attend the process for two profiles

- Ninja Recruitment - 2nd/3rd Sep 2018 - 3.3LPA - 3.5LPA

- Digital Recruitment - 9th Sep 2018 - 7.0LPA - 7.3 LPA (Applicable for the toppers of Ninja Recruitment)

The registration and application of the students must be filled and submitted by **20th Aug 2018**. Only students who have completed the formalities in the given timeline can sit for the process. (Steps have been attached)

The TCS iON team will be facilitating the complete process for online test and interview process,

**Students who have registered for Codevita (registered before 15th July 18) must participate for the event**

- Start Date: 9th Aug 2018 - 3:00PM
- End Date: 10th Aug 2018 - 3:00PM

6 Problem and a window of 24 hours to crack the problem.  
Once you have logged in, your timer starts (FAQs have been attached)  
**The Codevita scores will be used for Ninja Recruitment assessment**

## **TCS National Qualifier Test**

### **Process:**

**TCS National Qualifier Test > Interview > TCS Offer**

### **Eligibility Criteria:**

### **Qualification:**

**Full Time Graduates from B.E / B.Tech / M.E / M.Tech / MCA - 2019 YOP**

### **Specialization:**

**Engineering - All Specializations**

**M.Sc - Computer Science/Information Technology and other related disciplines**

**MCA with B.Sc / BCA / B.Com / BA (with Maths/Statistics)**

### **% Criteria:**

**60% throughout Academics in X / XII / UG / Diploma / PG**

### **Backlogs:**

**Not more than 1 pending backlog at the time of appearing for the test**

### **Gap Criteria:**

**Overall Gap in Academic Career not to exceed 2 years**

### **Test Sections:**

**English, Quantitative Aptitude, Programming Language & Coding**

## **Registrations close on 20th Aug 2018**

### **How to Register?**

**Please click on the link given below & follow the instructions:**

<https://nextstep.tcs.com/campus/#/>

### **Useful link for registration**

**C:\Users\VTU\Downloads\CodeVita-7-FAQ-Plagiarism-and-attribution-of-Code-Mailer (1).gif**

**VTU CPC wishes all the candidates a prosperous career ahead.....**

\*VTU CPC is only a platform to link the recruiter and the candidates. The candidates are advised to take maximum care in selecting the recruiter and terms & conditions of appointment. VTUCPC is not responsible for any lapses in the agreement between the candidate and there recruiter.

---

**Dr. Binoy Mathew, Director, VTU-Centralized Placement Cell(CPC)**  
**Email: [placement@vtu.ac.in](mailto:placement@vtu.ac.in)**



## Recruitment Steps

tcs 50

TATA  
CONSULTANCY  
SERVICES

2019 YOP



nextstep tcs



All

News

Images

Maps

Videos

More

Settings

Tools

About 288,000 results (0.67 seconds)

## NextStep- Tata Consultancy Services



<https://nextstep.tcs.com/> ▼

TCS NextStep! Register Now. ALERTS! View More View Less. Share, Learn, Connect & Explore Career options with. Campus Commune. Take me there.

You've visited this page many times. Last visit: 21/11/17

### Forgot Password

We appreciate your interest in exploring career opportunities ...

[More results from tcs.com »](#)

### TCS NextStep Page

To access the page, please select the 'Desktop Site' in the browser ...

## India | TCS Campus Commune Home

<https://campuscommune.tcs.com/en-in/intro> ▼

Featured. Don't be Misled by Fake Offers - Validate Your TCS Offer Letter ... TCS NextStep ... VIDEO. PT Usha speaks on TCS Fit4life Campus Challenge ...

You've visited this page 2 times. Last visit: 27/5/18





**Students who have registered for  
Codevita/ Digital recruitment and  
have Reference ID  
click here**

# Welcome aboard TCS NextStep!

**Register Now >**



**Students who are registering for the  
first time click here**

# Students who are registering for the first time




## Select Category

You have a choice to apply for IT or BPS. Please note that you can register with us under only one category and registering in incorrect category may lead you to repeat the entire registration process.

**Click only on IT**



 Information Technology



 Business Process Services

# While Filling Registration Form

Institute name\*

Institute Name

Qualification\*

Select

Year of passing (for highest qualification) \*

Select

Nearest Test Location\*

Select

Enter password\* [as per TCS password policy](#)

**Please fill your correct/ registered college name Only if there is no option fill it under “Others”**

**Type the complete UG/ PG Course  
e.g. Bachelor of Engineering**

**Applicable only to 2019 batch**

**The test will be conducted according to the location that you choose**

**e.g. Tata@2018**



# After Submission of Registration Form

Thank you for registering with TCS !

Please note your Reference ID: **CT20182522409** for all further communication with TCS.

An Email with your CT/DT Reference ID and Password as entered by you has been sent to your email ID mention in the Registration Form.

Click on "Continue" and enter your password to complete Application Form and access Campus Commune.

Continue

**Please note the Reference ID highlighted in Green. Which is required for future assessment.**

**You will also get a mail on the registered mail ID**

**Refresh the page**

# After Registration

[Alerts](#)[Campus Commune](#)[TCS BUZZ](#)[Help & Support](#)[Login](#)

**Students who have registered and  
have Reference ID  
click here**

## Welcome aboard TCS NextStep!

[Register Now >](#)

# Filling application form by 17<sup>th</sup> Aug 2018

**TATA** CONSULTANCY SERVICES

Experience certainty.

NextStep



Application Form

Campus Commune

Track My Application

How To Apply

WELCOME **BNAGO (CT20182522411)**

[Home](#) [Help & Support](#) [Change Password](#) [Contact Us](#) [Logout](#)

## TCS NextStep Portal



Welcome aboard on TCS NextStep portal!

TCS NextStep Portal is the first step connecting you with TCS, Asia's leading IT services Company. A single platform that addresses all your needs interactively and simplifies the communication process, this Portal will help you in your transition from being a student on campus to exploring a dynamic career path with TCS.

From keeping you updated on TCS initiatives to answering your queries and helping you explore a world of opportunities, TCS NextStep helps bridge the distance in your journey to becoming a TCSer.

So, go ahead! Explore opportunities. Experience Certainty.

TCS NextStep Mobile App  
is available on Android!



GET IT ON Google play

# Completion of all 4 sections

WELCOME BNAGO (CT20182522411)

[Home](#) [Help & Support](#) [Change Password](#) [Contact Us](#) [Logout](#)

Application Form ✓

Personal Details ✓ Academic and Work Experience Details ✓ Other Details ✓ Application Form Preview and Declaration ✓

Test Location

Nearest Test Location: \*  [Click here to select location of Nearest Test Center](#)

**Fill in the correct details in all sections and you will get green tick on each tab**

**Post this click on Submit**

I agree\* ☒

Date:  Place:

# Apply for Drive before 20<sup>th</sup> Aug 2018

**TATA CONSULTANCY SERVICES**  
Experience certainty.

**NextStep**

WELCOME **BNAGO (CT20182522411)**

Home Help & Support Change Password Contact Us Logout

**TCS NextStep Portal**

TCS Application Status

**TCS NextStep Mobile App**  
is available on Android!

GET IT ON Google play

Only once you have filled your application form and re- login into the nextstep tcs you will get the tab “Apply for Drive”



Activity	Status	Date (DD/MM/YYYY)
Candidate Registration	Registered	07/08/2018 08:13
Application Form	Application Received	07/08/2018 08:30



# Final Step

The screenshot shows the TCS NextStep Portal interface. At the top, the TATA CONSULTANCY SERVICES logo is on the left, and the NextStep logo is on the right. Below the logo, the text 'WELCOME BNAGO (CT20182522411)' is displayed. A navigation bar contains links for Home, Help & Support, Change Password, Contact Us, and Logout. The main header is 'TCS NextStep Portal'. Below this is a large image of two people working. A red arrow points to the 'Apply for Drive' option in the left sidebar. Below the sidebar is a green banner for the TCS NextStep Mobile App, which is available on Android. Below the banner is a 'GET IT ON Google play' button.

**TATA CONSULTANCY SERVICES**  
Experience certainty.

**NextStep**

WELCOME **BNAGO (CT20182522411)**

Home Help & Support Change Password Contact Us Logout

**TCS NextStep Portal**

**Apply for Drive**

**TCS NextStep Mobile App**  
is available on Android!

GET IT ON Google play

Only once you have filled your application form and re- login into the nextstep tcs you will get the tab “Apply for Drive”



Activity	Status	Date (DD/MM/YYYY)
Candidate Registration	Registered	07/08/2018 08:13
Application Form	Application Received	17/08/2018 08:30
Drive	Applied for Drive	10/08/2018 08:45



# Codevita Round 1

- Test Date: 9<sup>th</sup> Aug 2018 from 3:00PM to 10<sup>th</sup> Aug 2018 3:00PM – 24hours window
- In Codevita if the student solves 1 problem correctly out of 6 cases will be invited to TCS for 7.0LPA Digital role
- Students will have two opportunities to attempt TCS process
  - Codevita (9<sup>th</sup>/ 10<sup>th</sup> Aug 2018)
  - Ninja Recruitment (2<sup>nd</sup>/3<sup>rd</sup> Sep 2018)
- Codevita scores will be used for Ninja recruitment selection
- Codevita is applicable to all students who have registered for it before 15<sup>th</sup> July
- Wishing you all the best!!!!

## Some Tips for handling different status messages in Code Vita.

### 1. Compile Time Error:

A successful compilation simply returns silently. Hence your aim should be that your program is so agreeable with the compiler that the compiler happily returns silently.

If you get a CTE, do as follows

1. First and foremost you have to ensure that you use the same versions of compilers that the server-side uses. A list of compilers is provided [here](#).
2. If you are using the same compiler, then mentally you have to treat Warnings as errors because warnings prevents the compilers from returning silently. So get rid of all Warnings in your compilation process.
3. If you have meticulously followed the above, it is highly unlikely that you will get CTE from the Code Vita judge
4. In extremely rare case, a negligibly small possibility exists that under heavy load, the servers and hence the compilers malfunction and hence your compilation fails. The probability of this happening is less than 0.01% because Code Vita engineering is now mature enough to handle thousands of concurrent compilations. In your thinking you should simply discount the possibility that the compiler has malfunctioned, but if you have a good enough reason to suspect that this is what might have happened, then simply resubmit the code after some time. This kind of behavior is temporal and the probability of CTE vanishing on its own is pretty high.
5. Finally, whenever a CTE occurs the Code Vita Judge provides the exact error message that the compiler has produced. Using this message as a clue you should be able to troubleshoot past your compilation problems.

### 2. Runtime Error (RTE):

A Runtime error is caused because either your program or the runtime has thrown some exception. Since RTE could be caused because of N number of reasons it is difficult to pin-point and hence provide a crisp error message unlike CTE.

Let us divide RTE into two parts

- 1) Systemic Faults and
- 2) Submitted Program Faults.

**Systemic Faults:** Systemic Faults can give rise to RTE if the Judge is not properly configured to evaluate submissions. In most cases the configurations are on a per-language basis. However systemic faults exhibit binary behavior i.e. either it will work for all submissions in a

given language or it may work for none of the submissions in that given language. It cannot be that some programs in a given language receive RTE and some don't. If this happens to be the case then it is almost always Submitted Program Fault.

It is also possible that one language is configured properly, but some other isn't. Let's say that C is properly configured and Java is not properly configured. In this case all the C submissions will be devoid of Systemic Faults whereas all the Java programs will be susceptible to Systemic Faults. Faults in configuration of one language does not have an impact on behavior of other language. It is the duty and task of Code Vita Engineering team that systemic faults are eliminated before the Judge is thrown open to Code Vita participants. Unlike CTE, RTE is not a transient fault and does not change behavior even under load.

**Submitted Program Faults:** In 99.99% of cases, RTE is caused by Submitted Program Faults. Very rarely, and I don't recollect any instance in past 4 seasons of Code Vita that a Systemic Fault causing RTE has ever been exposed in Live Rounds. Submitted Program Faults could be caused because of any reasons, but not limited to those stated below.

- Failure to adhere to input and output specifications is the number one cause of RTE.
- Known programming violations like Illegal memory access or Null Pointer Exception etc. result in RTE
- RTE are more common to languages like C and C++ where static type checking is lenient and hence faults manifest only at runtime.
- Any logical mistake that leads to throwing an exception receives an RTE

If you have participated in previous seasons of Code Vita, request you share your stories on how you got past RTEs.

### **3. Time Limit Exceeded (TLE):**

In automated code evaluation environments optimal utilization of shared resources such as CPU and memory are key to delivering good performance. However no matter how well a platform is engineered, performance can deteriorate if submitted code is a CPU or Memory hog. So one poorly written program can affect the evaluation times of several others. In such situations platforms, including Code Vita have no choice but to abort the rogue program. The threshold when this behavior kicks in, in Code Vita, is different for different questions.

For example, if a problem is purely compute-intensive i.e. has CPU-affinity then the programs may have a smaller threshold, say 1 second. Likewise, if a program requires lot of memory

accesses to be performed, it may have slightly higher threshold, say 2 seconds. In Code Vita, these limits will be implicit. What this means is that it will not be explicitly spelled out what is the Time Limit for each question. However, an intelligent reader will have already figured out that the moment this status message is received, one has to minimize the runtime of the program.

To cite a contextual example, let's say a question in Code Vita requires you to sort millions of elements. If you implement a naive algorithm like Bubble Sort whose Order complexity is  $O(n^2)$  you are almost certain to receive a TLE. A solution to get past TLE, would be to implement a better sorting algorithm, say Quick Sort whose Order complexity is  $O(n \log n)$ . This will drastically reduce the sorting time and the program can finish within thresholds.

Now that we have seen what a TLE is and why it occurs and how system responds to it, let's see some of the ways in which you can overcome TLE

- It is a good practice to insert timestamps in your code to know how much time is spent in different parts of your code. So in case you get a TLE, you already know where your bottlenecks are.
- Your choice of data structure and algorithm plays a critical role in assessing whether you will or will not receive a TLE
- Keep a profiler handy and more importantly know how to use it so that in case of TLE you may get insights on runtime of your code.
- With TLE, some good programmers have a reverse gripe i.e. they write so optimized code that they feel that the thresholds are too lenient. Such programmers are advised to have patience. May be with a few questions, few programmers can get away even with sub-optimal code but it cannot happen always. Keep up the good habit of writing optimized code. There will come a question where only optimal code will pass and rest will receive TLE. It's just that, not all questions are geared towards figuring out if the participant can write optimal code. Also, finally if all others things are equal, and two teams are tied for the last spot, then Code Efficiency which is one of the governing parameter, will kick in and the more efficient code will win. So please don't be too hung up if you have written a  $(n^2)$  complexity algorithm and your friend's  $(n^3)$  implementation also passes the evaluation.
- So all the best to you all and let there be no more TLEs.
- Sophisticated programmers use many brilliant techniques, like commenting certain sections of the code and figure out the bottlenecks if a TLE status gets converted into Wrong Answer status.

#### 4. Memory Limit Exceeded (MLE):

Just like TLE appears due to longer than allowed runtime execution times, MLE occurs due to higher than permissible memory utilization. More memory utilization is a function of two things - the language of your choice and how you handle memory allocation / deallocation in your code.

**Memory footprint of languages:** Standalone languages like C and C++ have better memory footprint than managed runtime languages like Java and C#. Interpreted languages like Perl, Python, Ruby etc. are somewhere in between. Code Vita systems are 64-bit and we calibrate the footprint of languages before setting memory limits on them. It can be safely said for the kind of problems that are asked in Code Vita, the memory footprint of language runtimes far exceed the amount of memory that a program may possibly need to use to arrive at the correct solution. Hence MLE status is almost always due to poor memory management strategy implemented in the program.

**Memory Management in own code:** Statically allocating large chunks of memory or speculatively allocating memory based on own understanding of questions is usually the main reason for MLE. Other than that poor data structures and algorithms also cause more than permissible usage of memory. In Code Vita, memory footprint of every process is tracked and rogue processes using more memory are terminated and a status of MLE is returned to the submitter of that program. There are no general rules on how to reduce memory utilization. The rules are language and context dependent. So ensure that you are aware of how to techniques to reduce memory utilization in language of your choice.

#### 5. Wrong Answer:

Wrong Answer is caused because your program didn't give the same output as expected for 1 or more test cases.

Whatever questions are being asked in Code Vita goes through thorough testing. So even if your program executes successfully on your system, that does not indicate its correctness. It should pass through all the private test cases of our problem. So before raising any queries, verify your program thoroughly.

#### 6. Accepted:

Accepted status comes when your program have passed all the test cases i.e it provided the same output as expected.

If your program shows this status, your problem is solved and you should move on to next problem.

## 7. Presentation Error:

Presentation Error status comes when your program output differs from the expected output by a whitespace character.

Even If your program shows this status, your problem is considered as solved. So don't try to get it in Accepted status and move on to next problem.

## 8. Difference between Accepted and Presentation Error:

Both Accepted and Presentation Error status are same. If either of these two statuses come while evaluating your program, consider it as solved and move on to next problem.

## 9. Public Test Case Vs Private Test Case:

While submitting solutions on CodeVita site, On clicking on **Compile and Run** button, The program gets evaluated for public testcases **only** which are given in problem text.

Getting Presentation Error or Accepted status here only means that your program is compiling and executing successfully against public testcases.

Simply executing Compile and Run is not enough . In order to run private testcases against programs one needs to Click on **Go to Submit page** button, then click on Submit button to evaluate program.

This submission will be considered for Ranking. This can end up in any of the 8 statuses.

Also, getting Accepted or Presentation Error while Compile and Run does not guarantee that the same status will appear after Submit functionality.

As described above, this is because Compile and Run is run against public testcases while Submit is run against private testcases.

Public testcases are those testcases which are present in problem text whereas private testcases are hidden.



