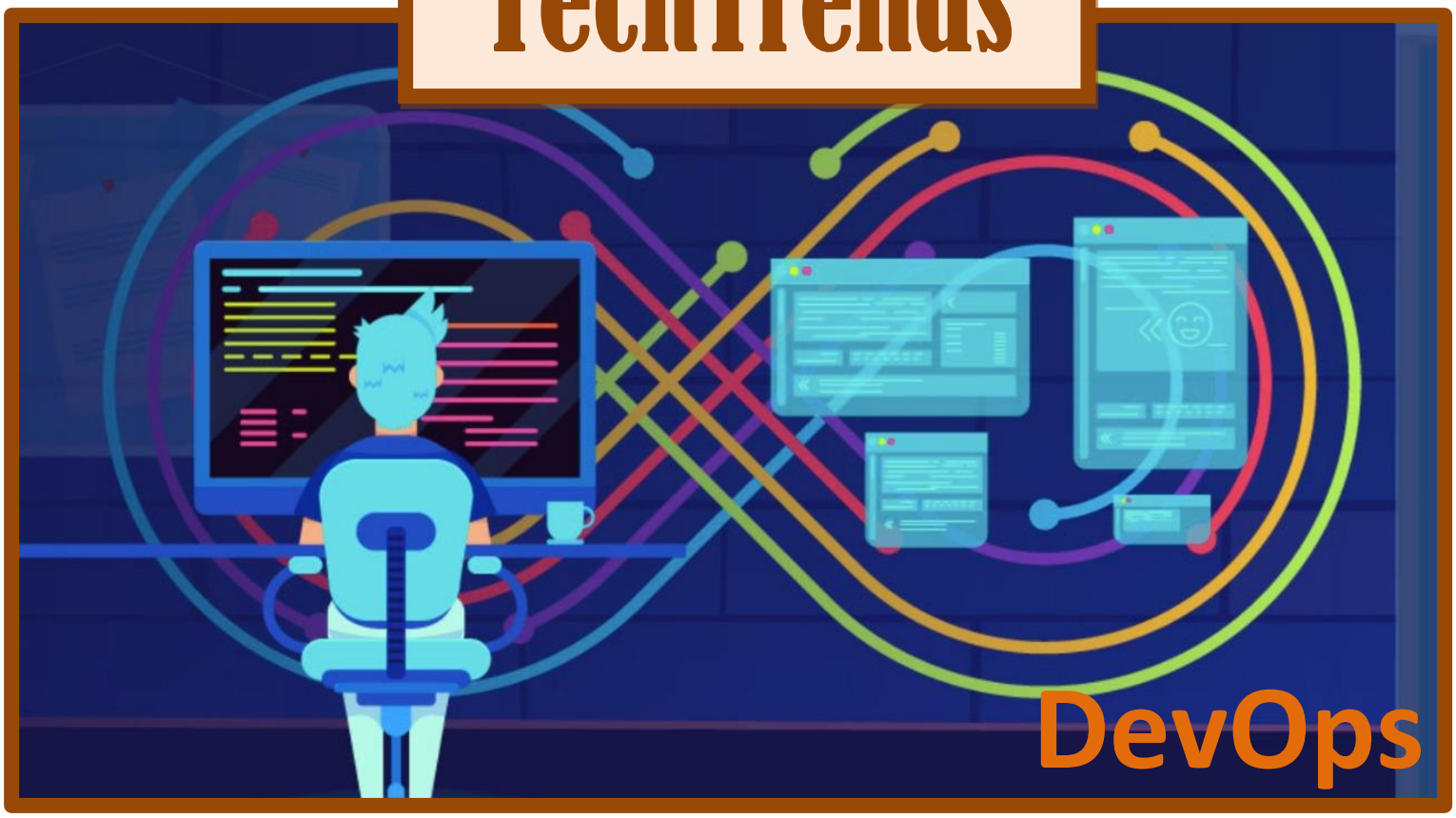
Department of Computer Engineering

Government Polytechnic for Girls, Surat

November-2020 Vol.-13

TechTrends

E-Newsletter



Vision:

To empower girls of diploma computer engineering to excel in IT Industries and serve the society.

Mission:

- To strive for academic excellence and professional competence among students and staff.
- To encourage innovative ideas among students to enhance their entrepreneurship skills.
- To provide high tech educational resources and supportive infrastructure.

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DevOps

DevOps is not a tool or a team, it is the process or a methodology of using various tools to solve the problems between Developers and Operations team, hence the term "Dev-Ops" was formed by combining "development" and "operations,".

Mrs. P. A. Mali
Lecturer,
Department of
Computer Engineering

What is DevOps?

DevOps is a methodology that brings the "**Dev**" and "**Ops**" team together. This practice aims in delivering products at a faster pace by using different automation tools. DevOps helps businesses that are keen on improving the flexibility and agility of their team.

"DevOps represents a change in IT culture, focusing on rapid IT service delivery through the adoption of agile, lean practices in the context of a system-oriented approach. DevOps emphasizes people (and culture), and seeks to improve collaboration between operations and development teams. DevOps implementations utilize technology— especially automation tools that can leverage an increasingly programmable and dynamic infrastructure from a life cycle perspective."

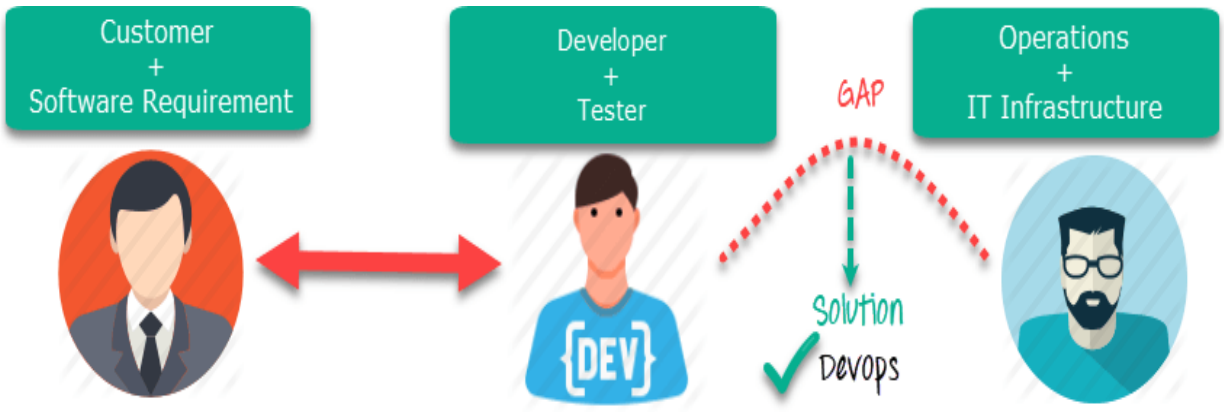
Who is a DevOps Engineer?

A DevOps Engineer is an IT professional who works with software developers, system operators, and other production IT staff to administer code releases. DevOps should have hard as well as soft skills to communicate and collaborate with development, testing, and operations teams. DevOps approach needs frequent, incremental changes to code versions, which means frequent deployment and testing regimens. A DevOps engineer will work with development team staff to tackle the coding and scripting needed to connect elements of code, like libraries or software development kits.

Why is DevOps is Needed?

Before DevOps, the development and operation team worked in complete isolation. Testing and Deployment were isolated activities done after design-build. Hence they consumed more time than actual build cycles. Without using DevOps, team members are spending a large amount of their time in testing, deploying, and designing instead of building the project.

DevOps addresses gaps in Developer and IT Operations communications



Life-Cycle of DevOps

A lot of stages help in making DevOps what it is today. It is a continuous process – continuous development, testing, integration, deployment and monitoring.

Continuous Development

The developer plans and builds the code and uploads it on to a version control system like Git which contains the source code. Even after the final release, there are feedbacks which the developer needs to incorporate in the application. Therefore, this continuous process of improving the application by the Developer is called Continuous Development.

Continuous Testing

After the code is uploaded on to the source code platform, it undergoes testing with the help of test codes. Each time the source code undergoes changes, the code also undergoes testing in a continuous fashion before passing on to production.

Continuous Integration

When one stage in the DevOps life cycle is completed, the application code has to move on to the next one. This happens with the help of integration tools. The developmental practice of continuously harmonizing the code from one stage to the next with the help of tools is called continuous integration.

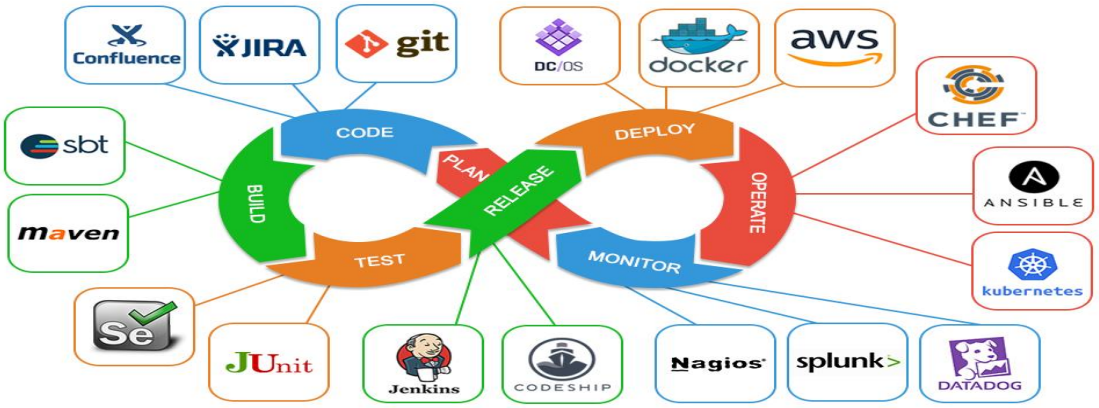
Continuous Deployment

Each addition of feature in the application, might need some modifications in the application environment. This is called Configuration Management. To achieve this, we use several deployment tools. The process of continuously changing the application environment based on addition of features is called Continuous Deployment.

Continuous Monitoring

Even after planning and testing, bugs might find their way to production. To keep a track of these bugs or any other inappropriate system behaviour or even keeping a track on feature requests, the monitoring tool continuously keeps a check as and when the application undergoes updates.

Behind every successful stage, there are a lot of tools that help in smooth working of DevOps. Here are a few important ones:



Source Code Repository

A source code repository is a place where developers check in and change code. The source code repository manages the various versions of code that are checked in. Popular source code repository tools are **Git, Subversion, Cloud force, Bit bucket and TFS**.

Build Server

The build server is an automation tool that compiles the code in the source code repository into executable code base. Popular tools are **maven, Ant , Gradle.**

Configuration Management

Configuration management defines the configuration of a server or an environment. Popular configuration management tools are **Ansible, Puppet and Chef**.

Virtual Infrastructure automation

Amazon Web Services and Microsoft Azure are examples of virtual infrastructures. Virtual infrastructures are provided by cloud vendors that sell infrastructure or platform as a service (PaaS). These infrastructures have APIs to allow you to programmatically create new machines with configuration management tools such as Puppet and Chef.

Test Automation

Test automation has been around for a long time. DevOps testing focuses on automated testing within your build pipeline to ensure that by the time that you have a deploy-able build, you are confident it is ready to be deployed. Popular tools are **Selenium and Water.**

Monitoring

It is also important to make sure people are notified when infrastructure and related services go down. Nagios is one such tool for this purpose which helps DevOps teams to find and correct problems. Tools are **Nagios, Splunk, Datadog.**

DevOps Container tools

Cloud-based micro service architecture uses containers to isolate, package, and deploy code at scale. Ex. **Docker, Kubernetes.**

Deployment Automation

Jenkins, an open source, Java-based CI/CD tool facilitates continuous integration and testing. It helps to integrate project changes more easily by quickly finding issues as soon as a built is deploy.

DevOps Training Certification

DevOps training certification helps anyone who aspires to make a career as a DevOps Engineer. Certifications are available from Amazon web services, Red Hat, Microsoft Academy, DevOps Institute.

DevOps Free courses online

Introduction to DevOps | DevOps Tutorial for Beginners | DevOps Tools | DevOps Training | Edureka
https://youtu.be/hQcFE0RD0cQ

DevOps Tutorial for Beginners | DevOps Training | Intellipaat : https://youtu.be/JHoy3IDZOfY

Companies using DevOps culture:

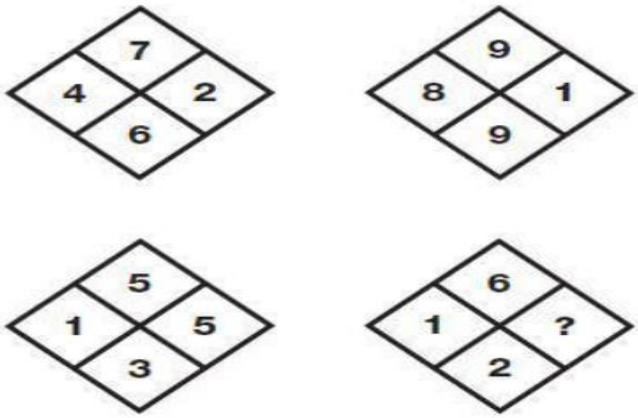
References:

1. https://azure.microsoft.com/en-in/overview/what-is-devops/#overview
2. https://newrelic.com/devops/what-is-devops
3. https://www.edureka.co/blog/companies-using-devops/

QUIZ (14)

Quiz-1

Find the missing number.



Quiz-2

One rabbit saw 6 elephants while going towards River. Every elephant saw 2 monkeys are going towards river. Every monkey holds one tortoise in their hands.

How many animals are going towards the river?

Quiz-3

Which number multiplied by itself will give the output as 12345678987654321 ?

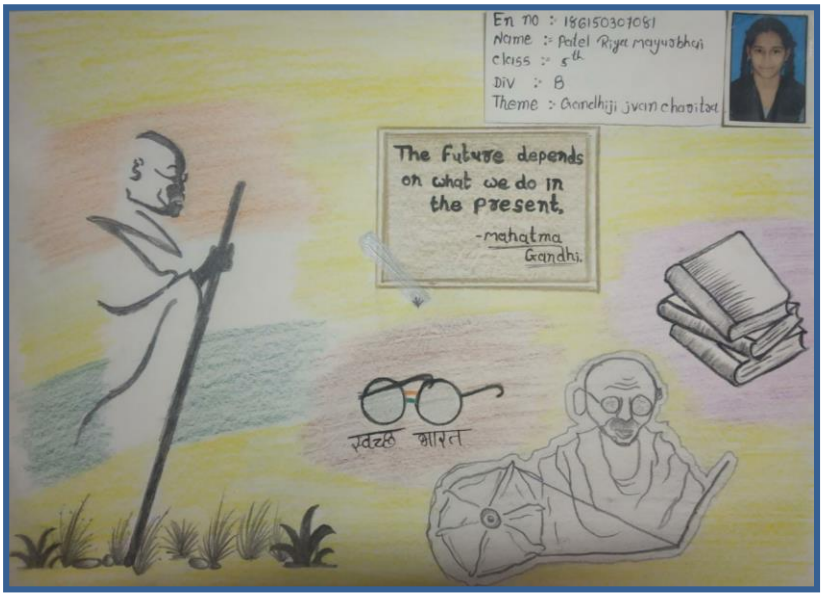
Answer of Last Quiz (13)

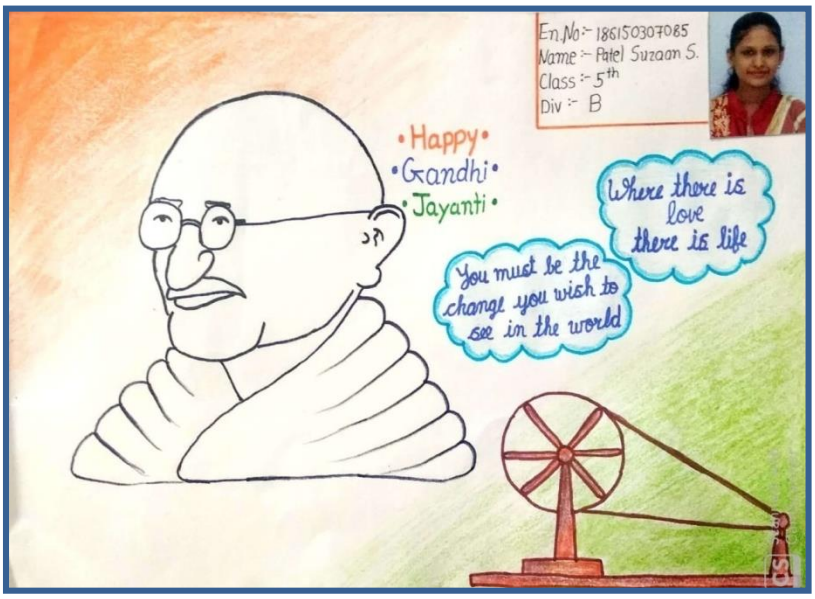
Q. 1 Option – D (Search Engine Optimization)

Q. 2 Option – C (Content Marketing)

Q. 3 Option – D (Planning)

Student Corner:





Seminar conducted : **Online**

Platform used **: Microsoft Teams**

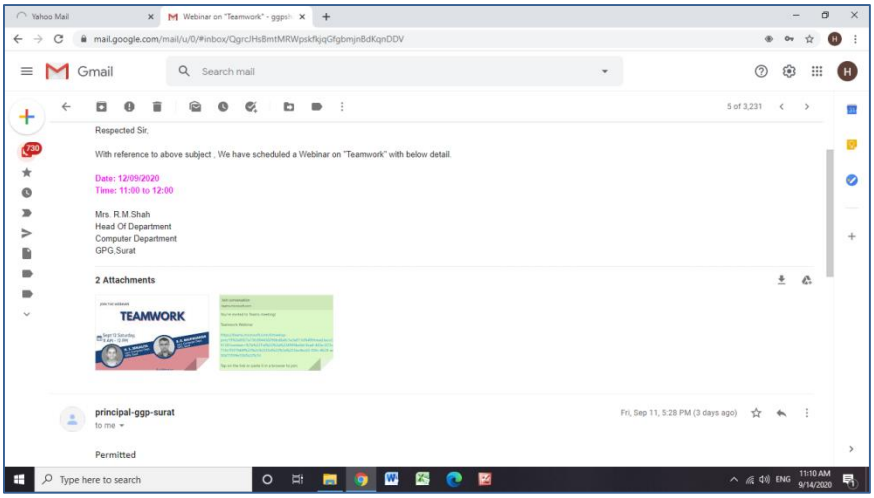
Name of expert : **Ms. Nisha S. Senjaliya & Mr. Bharat R. Mahyavanshi**

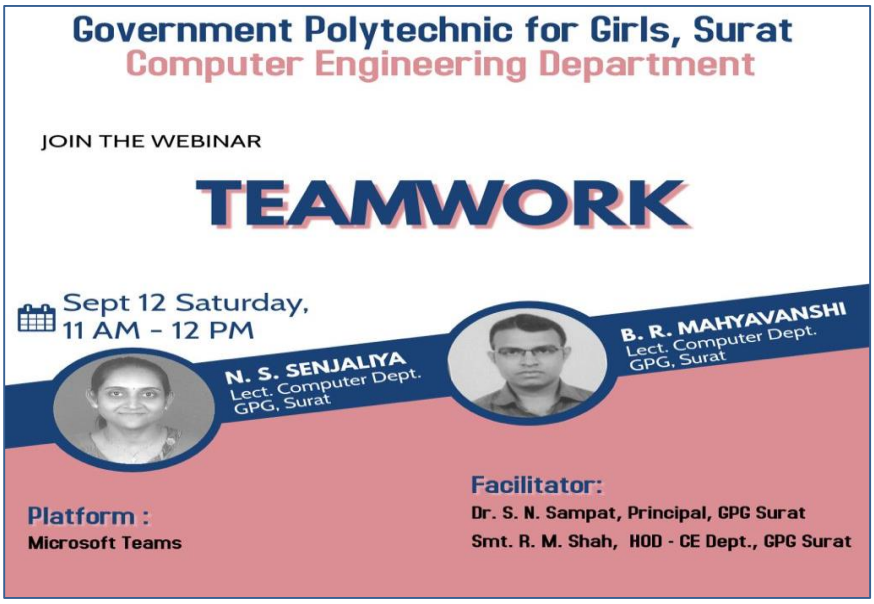
Time : **11 AM - 12 PM**

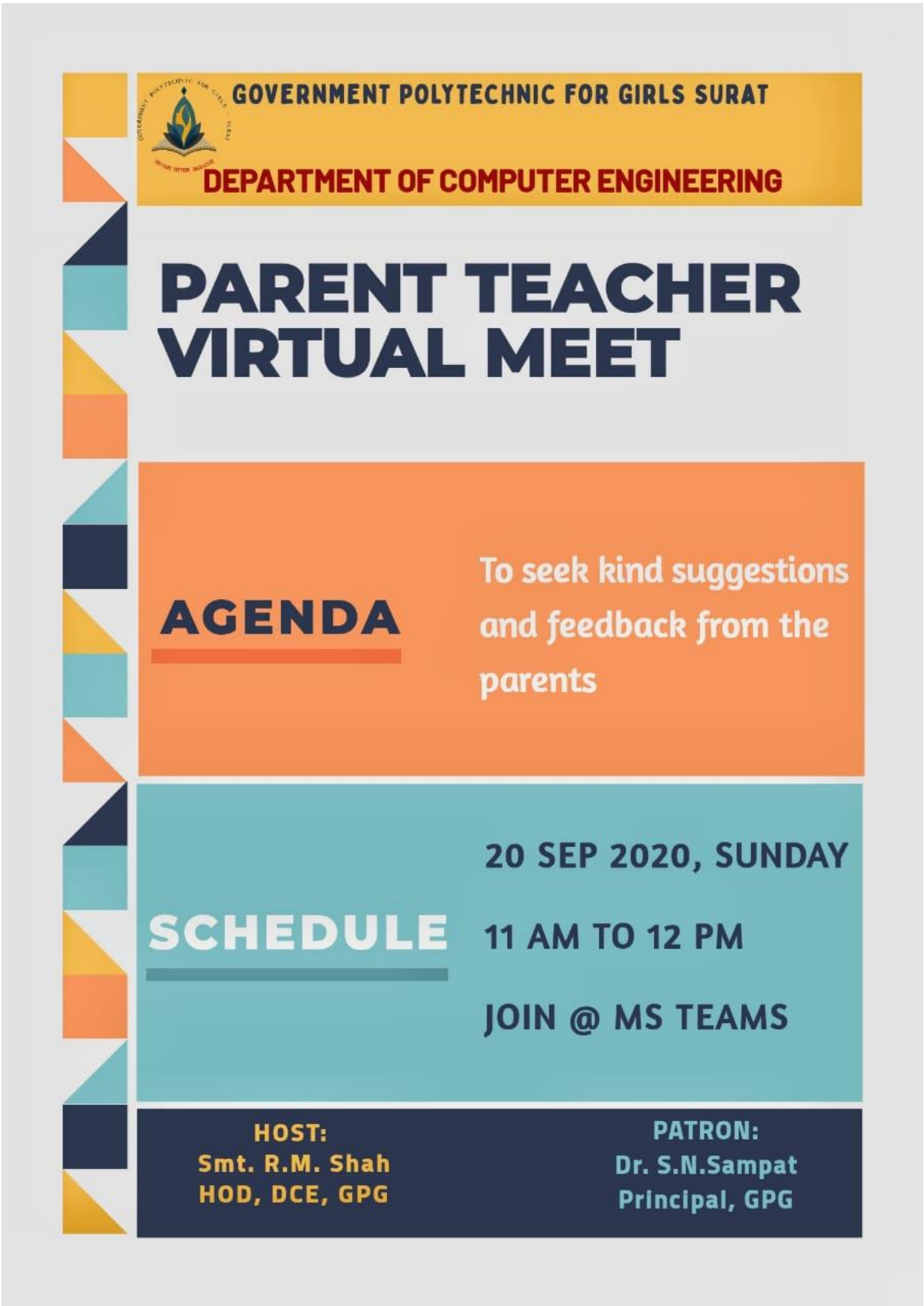
Participants : **All Faculties, 3rd and 5th Students**

Total Participant : **192**

Invitation Poster/Message/Permission:






GOVERNMENT POLYTECHNIC FOR GIRLS SURAT
DEPARTMENT OF COMPUTER ENGINEERING
PARENT TEACHER VIRTUAL MEET
AGENDA
To seek kind suggestions and feedback from the parents
SCHEDULE
20 SEP 2020, SUNDAY
11 AM TO 12 PM
JOIN @ MS TEAMS
HOST:
Smt. R.M. Shah
HOD, DCE, GPG
PATRON:
Dr. S.N.Sampat
Principal, GPG

BRIEF DETAILS

Description:

The Parent Teacher Meeting commenced at sharp 11 am. All the parents and faculties were heartily welcomed by the Principal Sh. S. N. Sampat and Head of Department Smt. Rekha M. Shah. She also informed all the parents that, if time persists, then she would ask concerned faculties to give presentation on different activities organized by computer department and institute apart from teaching during the academic year. Then Rekha Mam, insisted all the parents to share their feedback, suggestion or any question regarding online teaching without any hesitation.

Following points discussed in the meeting:

1. One of the parents appreciated the way the online teaching is conducted in computer department. He was happy to see each and every faculty of the department paying keen attention to every student of the class. He urged that, in MCQ and objective type test, scoring is very difficult, therefore he insisted to keep some subjective type questions also so that student could secure more marks, hence can get the admission in good colleges.
   HoD responded by assuring the parent that MCQ will not only be the sole criteria to secure marks in a particular subject. She explained that various other components such as viva, practical submission, assignments, attendance etc. were taken into consideration for evaluation of the student in a particular subject. Moreover, Rekha mam also cited the importance of MCQs, as during this pandemic GTU has taken MCQ based exams for all the final year students, so this MCQ based MID exam would really help the students for their final exams too.
   Then Principal Sir informed that marking system followed by government faculties is very fair and transparent, there is no pressure to give inflated marks. It will be injustice to their career to give fewer marks to the deserved student. He said that according to his experience, it's never been like that the students of Govt. colleges were behind the private college students. Lastly parent thanked Principal Sir and HoD mam for providing good learning environment and kind support to the students.

2. Another parent came forward and admired the teaching-learning process of computer department, he said that her daughter was able to score well the in the university exams without the need of taking external coaching classes as it was quite popularly seen in private colleges. Additionally, he also said that faculties of computer department were very concern about each and every student and students were able to solve the doubts freely with them.So he thanked Principal, HoD mam and all the faculties for treating their kid like their own kid.
   He insisted that as mid-Sem exam is about to arrive soon, students have not got enough time to prepare for the exams. So he urged HoD to look into this matter so that student can get proper time to learn and revise so that they can score well in exams. Then HoD replied that the Mid Sem time table is framed in a such way that there is holiday in between of the exams i.e. two exams are taken in a week followed by 2 days holiday and then again a holiday in between of 2 exams in next week. This will definitely help the students to get enough time to prepare and revise for the exams.

3. One of the parent urged that there should be company exposure of approx. 2-3 hours per week to the students from the semester 1 itself. So that students could attain around 6 months of industrial experience during academic term only. Then HoD explained initially during her academic, there was a provision of complete 6 months internship. But later on, due to large amount of private colleges penetration into the market, thousands of students were start becoming engineers, industry started to charge fee for the internship. This actually deteriorated the quality of internship offered by the companies. Later on, this scheme is revised by the university and the project work included in the course curriculum and student is allowed (only if they want to) to take the help from the industry during the project hours. In addition to, she explained that even the companies are not interested to offer internship to students at free of cost. Later, she informed that government has offered many vocational training courses, Finishing school, SSIP projects, even our college has been organizing many Industry expert lectures,webinars on latest technology and soft skills and many other steps currently have been taking place to bridge the gap between the college and industry.

4. Another parent urged to provide time to relax as there was continuous lecture taking place till 4 pm, as in other colleges lectures are scheduled till 1 pm only, due to this there was no time left to complete the homework and headache, eye straining and other health problem also started to occur because of continuous looking into the mobile phone. Moreover she also cited that the students are facing network issue while giving the online test. In response to this, HoD mam stated that parents should feel proud that we are teaching more as compared to other colleges.
   She also explained that if network issue occurred during the exam, the students will get extra time of 10 mins to send the screenshots of their answers via mail/whatsapp after the completion of the exam. Also in between the lectures, 10 mins break was given and even the lab is of 30-45 mins only, later students can leave and do their lab work. In addition to this, Principal Sir also stated to instruct the students to wash eyes frequently in between the breaks offered to avoid eye related problems.

5. One of the parents requested to provide some study material related to MCQ, so that students can get an idea of the questions to be appeared in the mid Sem paper. HoD Mam, taken her suggestion into consideration and informed all the subject faculties to provide MCQ based question within 2 days to all the students.

Finally HoD concluded the meeting that students are free to contact any faculty for solving doubts and any other queries. She assured whole department is with all the students and willing to help the students anytime. Later she thanked principal sir, parents and all the faculties for being present in the meeting.

Webinar on: Fundamentals of Digital Marketing - Date: 10-10-2020

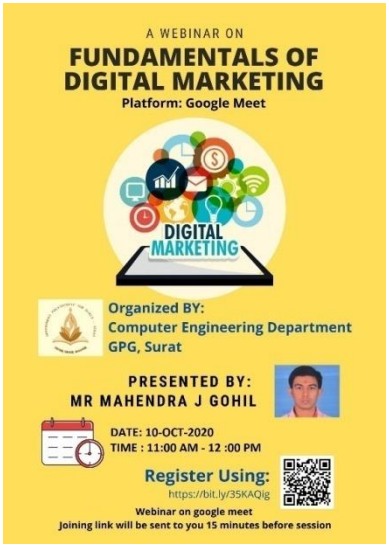
Seminar conducted : **Online**

Platform used **: Google Meet**

Name of expert : **Mr Mahendra J Gohil**

Time : **11 AM - 12 PM**

Participants : **All Faculties, 3rd and 5th Sem Students**

Total Participant : **44**

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