



DEPARTMENT OF COMPUTER
SCIENCE & ENGINEERING IN
ASSOCIATION
WITH



ORGANIZES
"ONLINE EXPERT SESSION ON
SOFTWARE ENGINEERING"

WITH
PROF. RAJIB MALL
IIT, KHARAGPUR

3RD SEPTEMBER
2022

10 AM ONWARDS



Convenor:
Prof. Amit Thakkar

Co-ordinator:
Bela Shah

Student Co-ordinator:
Meghal Shah



"Online Expert session on Software Engineering" By Prof. Rajib Mall

Introduction:

The Computer Science and Engineering Department, CSPIT in association with IEEE CSPIT Student Branch conducted a successful expert session on Software Testing and career opportunities in the arena of Software Engineering having Prof. Rajib Mall as the honorable speaker.

About the Event:

Date: 3rd September, 2022

Time: 10:00 AM to 12:15 PM

Mode of Conduct: Zoom Meet

Number of Attendees: 250

About the speaker:

Prof. Rajib Mall pursued his B.E, M.E and PhD from Indian Institute of Science(IISc), Bangalore. He is currently a professor at CSE Department, Indian Institute of Technology(IIT) Kharagpur where he has been with for over 20 years. He has authored or coauthored over 150 research papers in various referred journals, international conferences, and national conferences. He has also authored four books on the areas of software

engineering, software project management, real-time systems, and mobile communications.

Content:

This Expert Session aimed to spread knowledge about the prospect and scope of Software Testing in the present-day industry. The session was tailored in such a way that the attendees comprehended how Software Engineering deals with the design, development, testing, and maintenance of software applications. Besides the students of CSPIT, the session was attended by teachers and students from different universities of Gujarat. Prof. Rajib Mall's articulate and conversational style of conducting the session made it interactive and interesting. He delivered the concept in a fluent and epigrammatic manner by sharing relevant comic strips, flowcharts and visual models. Furthermore, he discussed the stereotypes and perception of testing, how testing was traditionally viewed as uncomplicated and undemanding but over the years it has taken the center stage of all types of innovations and software development. There were quiz questions through the session to keep engagement.

Discussion:

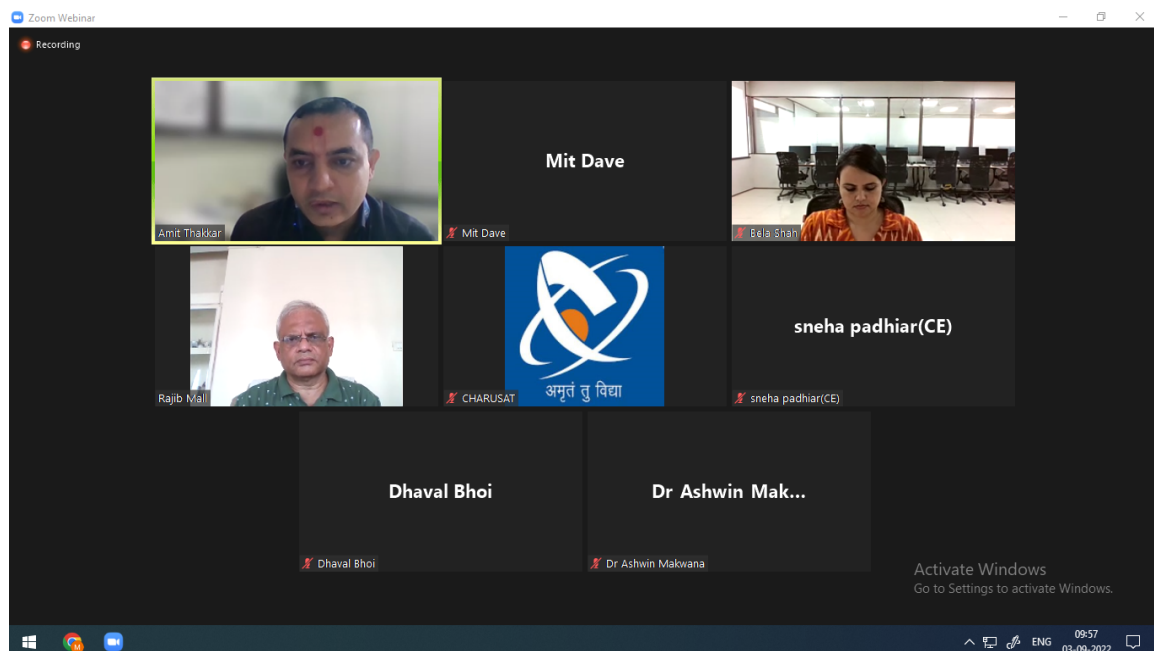
Topics discussed and covered in this expert session include bugs in programming, how to reduce them, how to test the program, testing facts, testing levels, testing types, faults, failures and errors, verification versus validation, pesticide effect, Caper Jones Rule of Thumb, Test data versus

test cases, design of test cases, test execution and result analysis, evolution of testing technology from manual test design and execution to automated testing, various testing tools, Black-box testing, equivalence partitioning.

Conclusion:

To summarize, it was a wonderful and sagacious session. We acquired knowledge about Software Testing with his expertise, how Software Testing is getting more complex and sophisticated every year with newer testing techniques and automation. There is a potential progression in the testing careers. The expert talk helped many students decipher their career paths, catalyze their interest in the domain and pave the way for future development.

Glimpses of the event:





You are viewing Rajib Mall's screen. View Options



Software Testing

Rajib Mall

**Professor, CSE Department
IIT KHARAGPUR**

Audio Settings



Chat



Raise Hand



Q&A

Leave

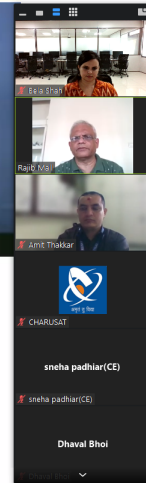
Recording...



Some bugs can be costly...



- Ariane 5 rocket self-destructed 37 seconds after launch



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Zoom Webinar

You are viewing Rajiv Nigam's screen

View Options

Beia Shah

Rajiv Nigam

Armit Thakkar

CHARUSAT

sneha padhiar(CE)

Dhaval Bhoi

Testing Facts

- Testing is getting more complex and sophisticated every year.
 - Larger and more complex programs
 - Newer programming paradigms
 - Newer testing techniques
 - Test automation

Participants (215)

Attendees (207)

Q Search

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- 20CE016 KRUTIK DADHANIVA
- 20CE020 Aksh
- 20ce023
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- 20CE029
- 20CE039
- 20ce062
- 20CE074
- 20ce080
- 20CE081 Gaurang Patel
- 20CE086 Kashyap Patel
- 20ce092 Meshv Patel
- 20CE104 SHYA PATEL
- 20ce106_TishaPatel
- 20CE108 Liday
- 20CE119 DIPKUMAR RUPARARA
- 20ce126
- 20CE127 HET SHAH
- 20ce128 Jay Shah

Lower All Attendees' Hands

End

33°C Haze 10:19 09-09-2022

Zoom Webinar

Participants (225)

Verification	Validation
Are you building it right?	Have you built the right thing?
Checks whether an artifact conforms to its previous artifact.	Checks the final product against the specification.
Done by developers.	Done by Testers.
Static and dynamic activities: reviews, unit testing.	Dynamic activities: Execute software and check against requirements.

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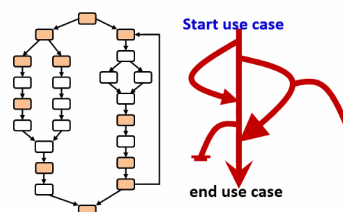
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Zoom Webinar

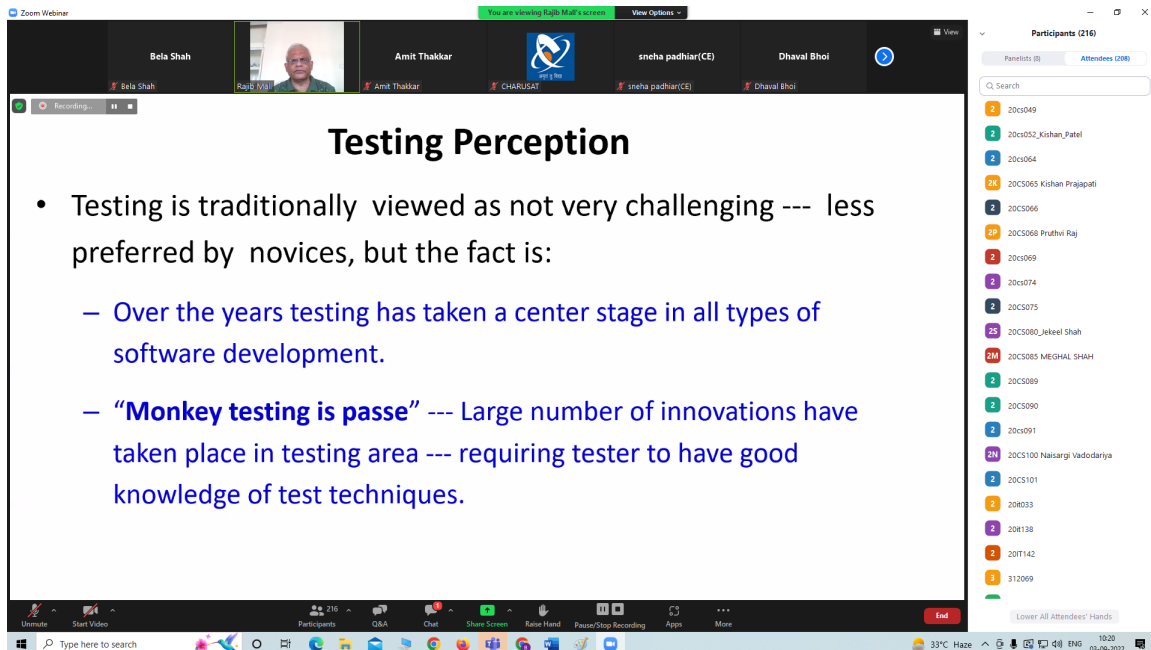
Participants (196)

Equivalence Class Partitioning

- The input values to a program:
 - Partitioned into **equivalence classes**.
- Partitioning is done such that:
 - Program behaves in similar ways to every input value belonging to an equivalence class.**



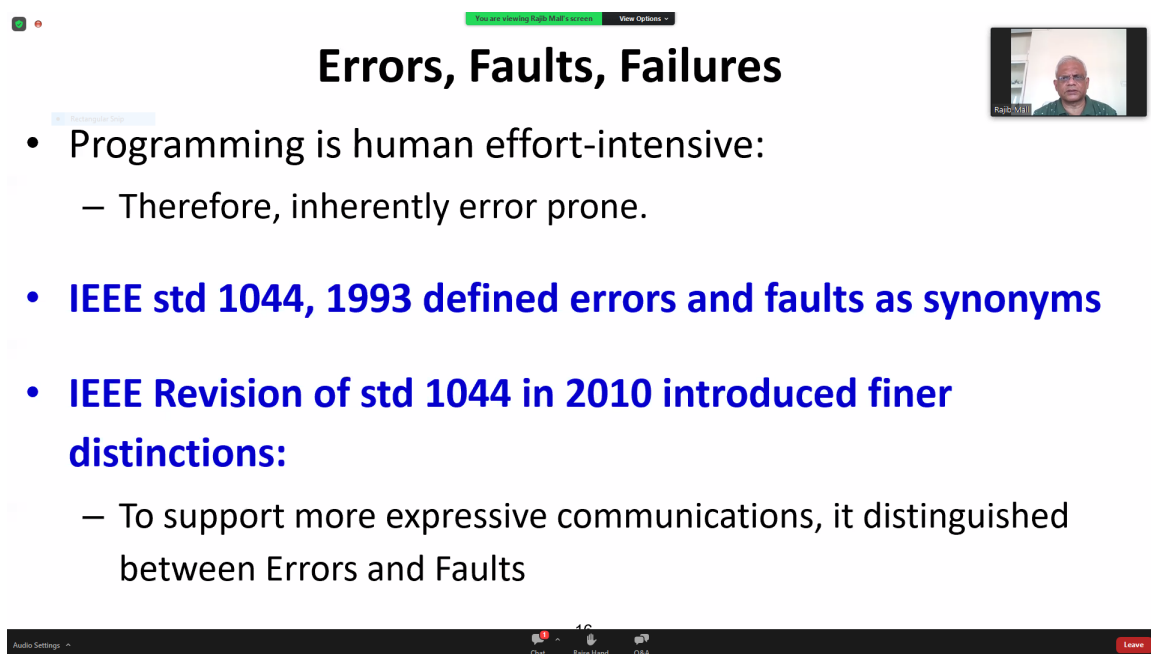
34°C Light rain



The image shows a Zoom Webinar interface. At the top, there are participant names: Bela Shah, Amit Thakkar, sneha padhiar(CE), and Dhaval Bhoi. The main content area displays a presentation slide titled "Testing Perception". The slide contains a bulleted list. To the right of the slide, there is a "Participants (216)" panel showing a list of attendees with their names and IDs. At the bottom of the Zoom window, there is a toolbar with various icons for video, chat, and other functions. The Windows taskbar is visible at the very bottom.

Testing Perception

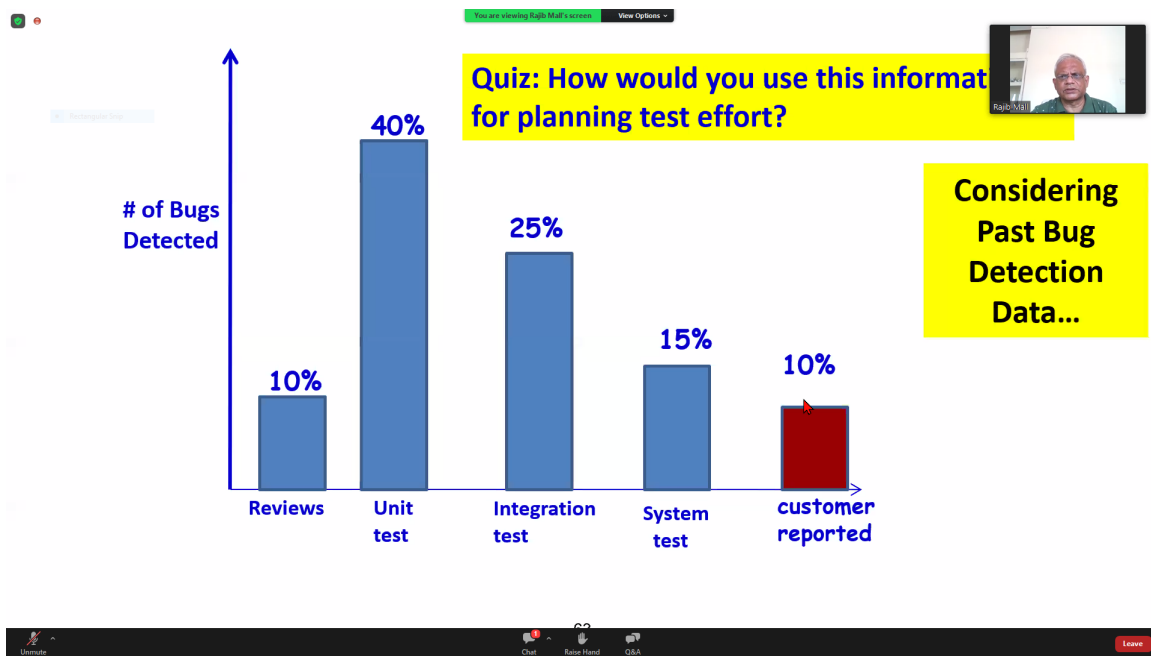
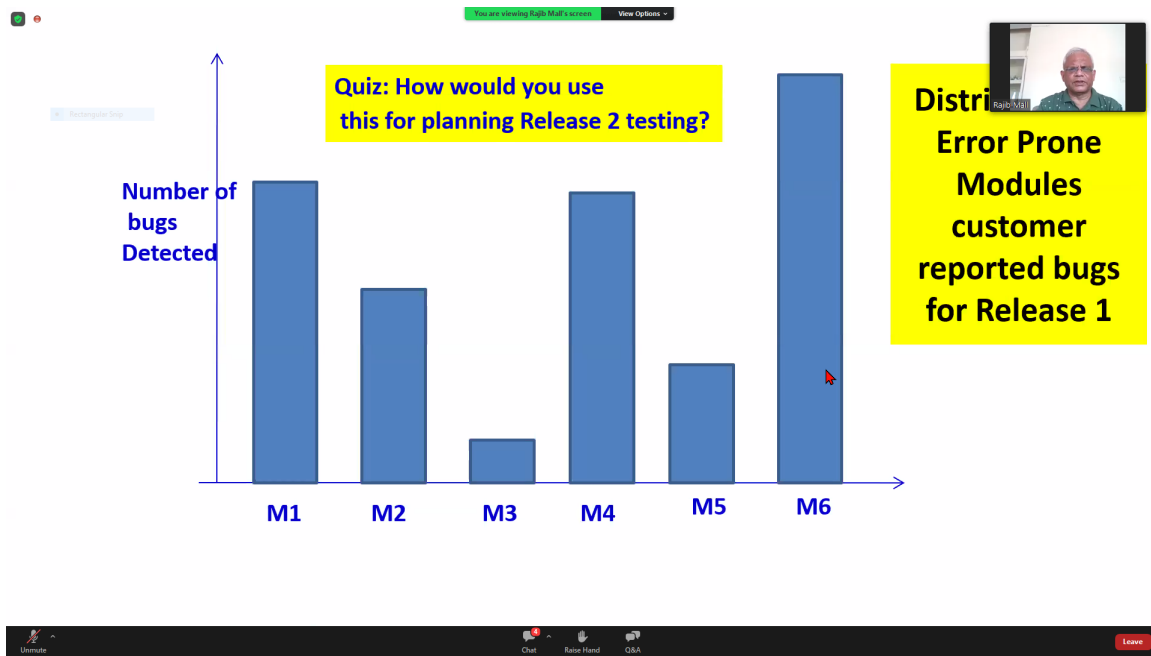
- Testing is traditionally viewed as not very challenging --- less preferred by novices, but the fact is:
 - Over the years testing has taken a center stage in all types of software development.
 - **“Monkey testing is passe”** --- Large number of innovations have taken place in testing area --- requiring tester to have good knowledge of test techniques.



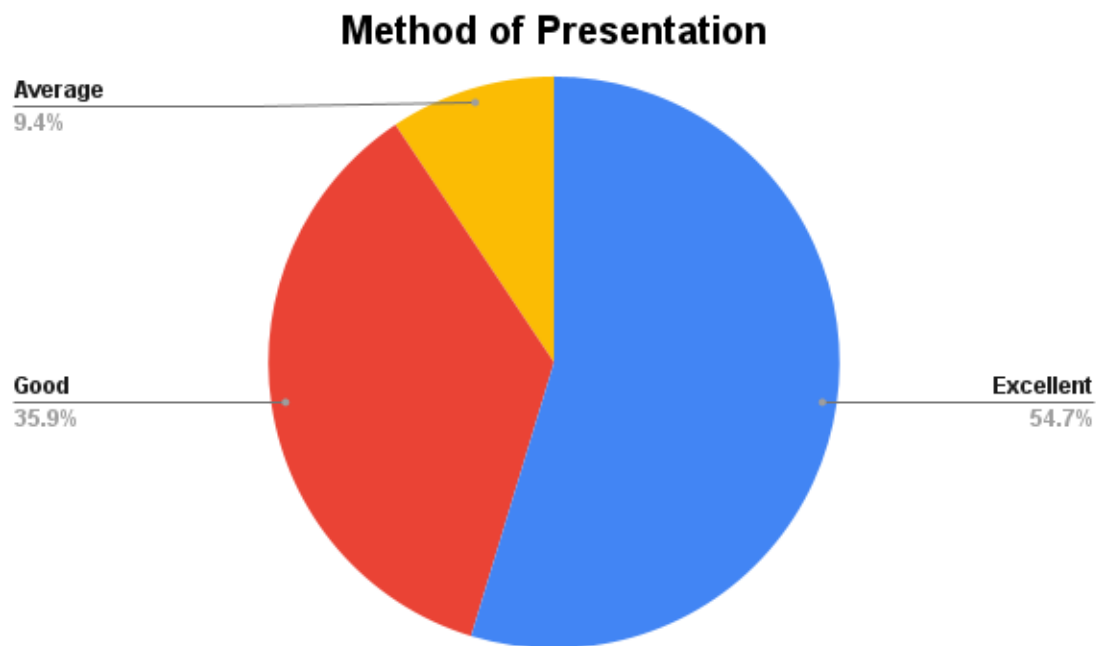
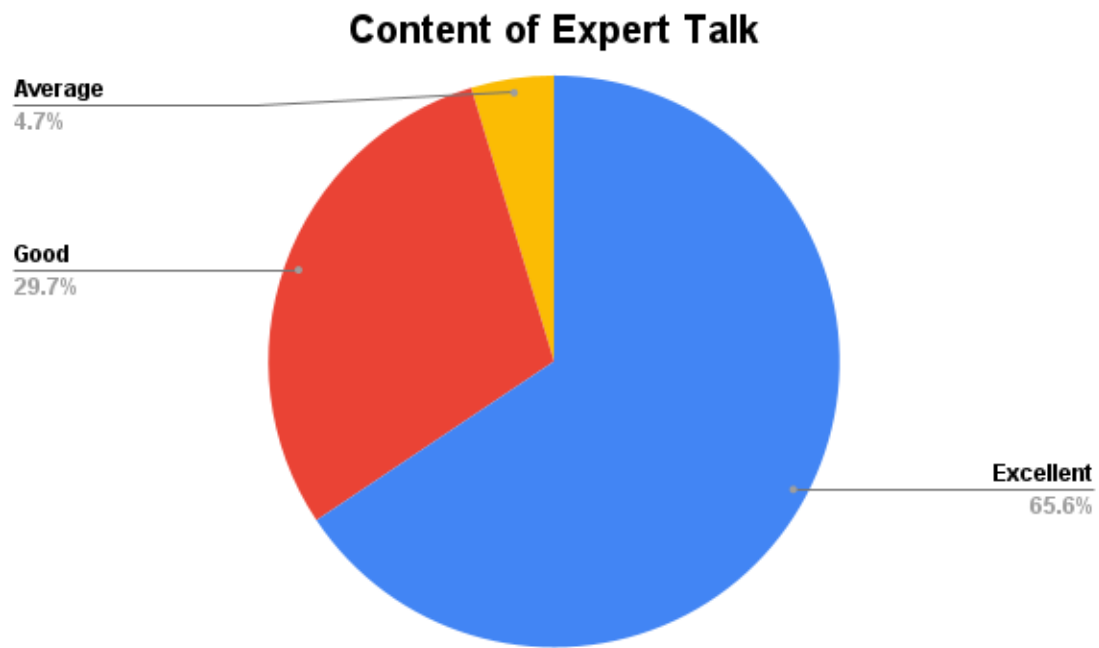
The image shows a Zoom Webinar interface. At the top, there is a participant name: Bela Shah. The main content area displays a presentation slide titled "Errors, Faults, Failures". The slide contains a bulleted list. To the right of the slide, there is a "Participants (216)" panel showing a list of attendees with their names and IDs. At the bottom of the Zoom window, there is a toolbar with various icons for video, chat, and other functions. The Windows taskbar is visible at the very bottom.

Errors, Faults, Failures

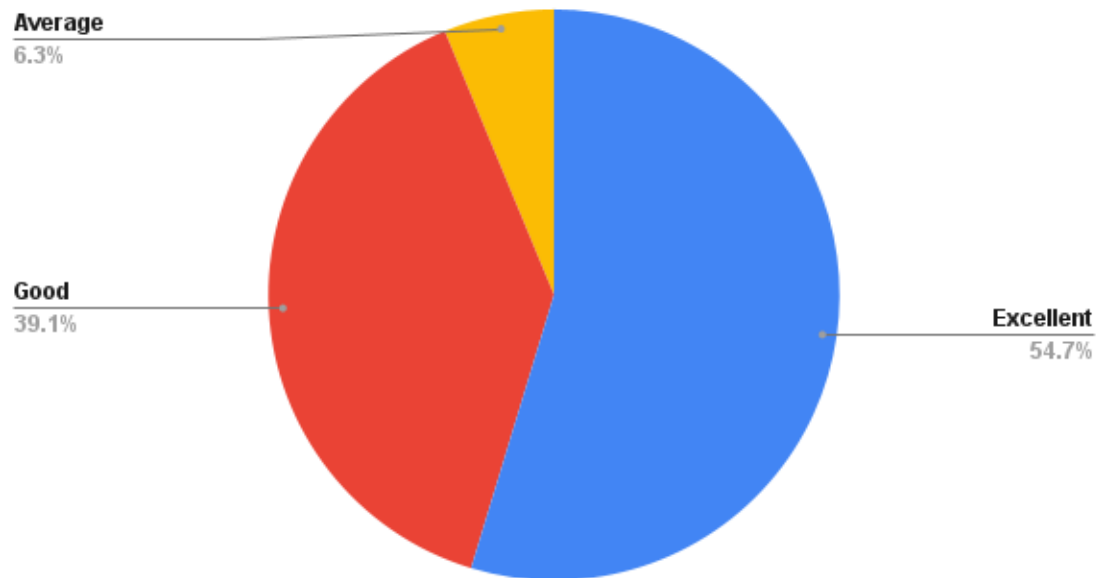
- Programming is human effort-intensive:
 - Therefore, inherently error prone.
- **IEEE std 1044, 1993 defined errors and faults as synonyms**
- **IEEE Revision of std 1044 in 2010 introduced finer distinctions:**
 - To support more expressive communications, it distinguished between Errors and Faults



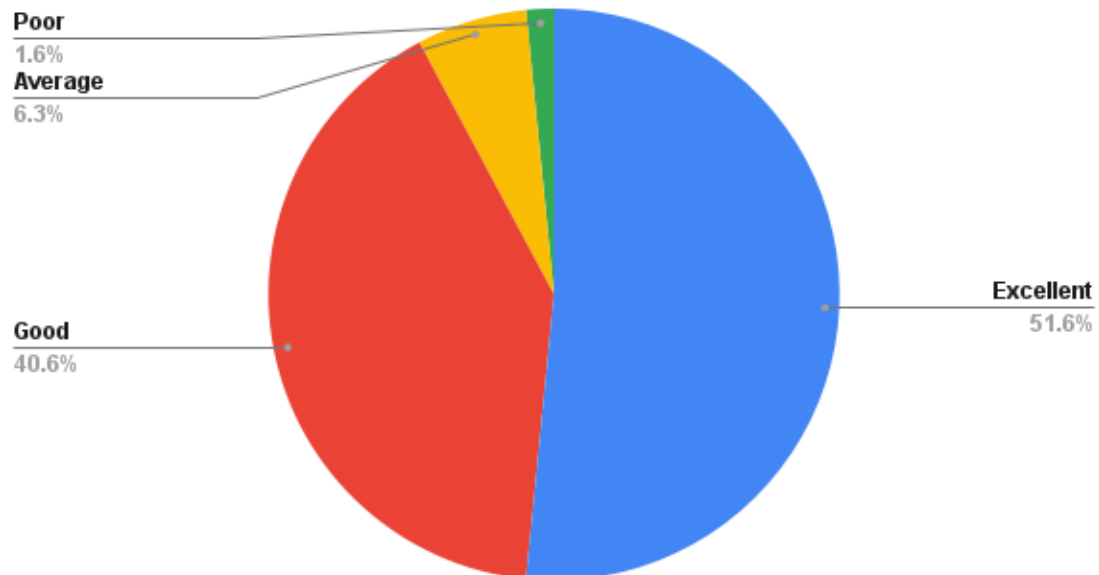
Feedback:



Response to Questions/Queries by Expert



Innovativeness in the Expert Talk



Overall Impact of the Expert Talk

