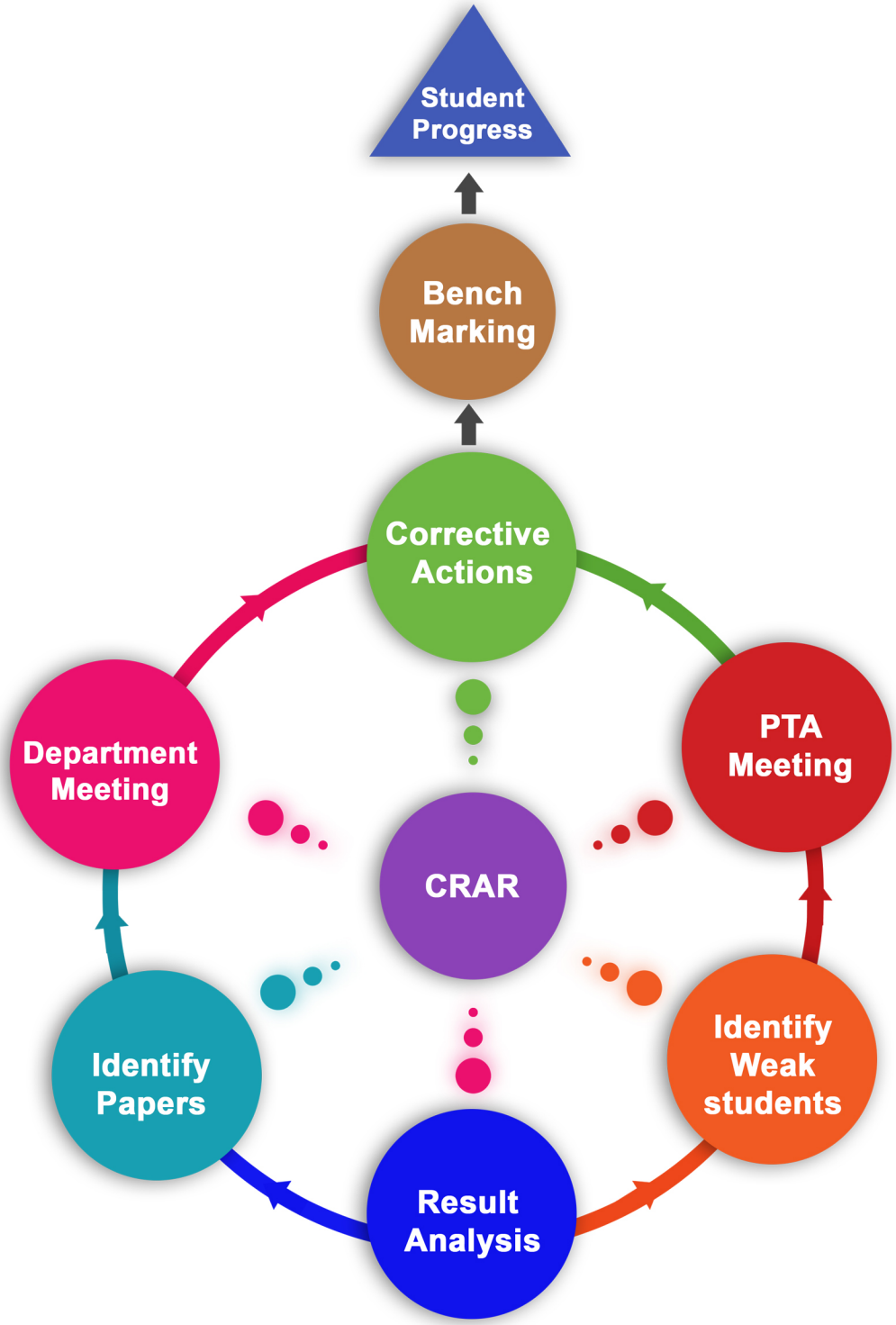
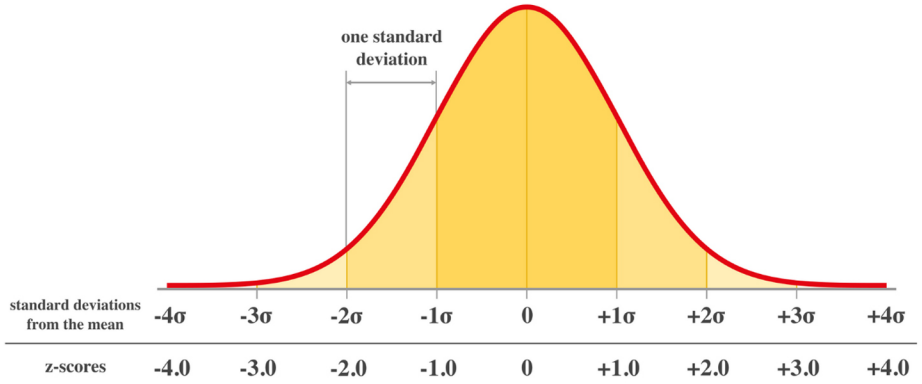
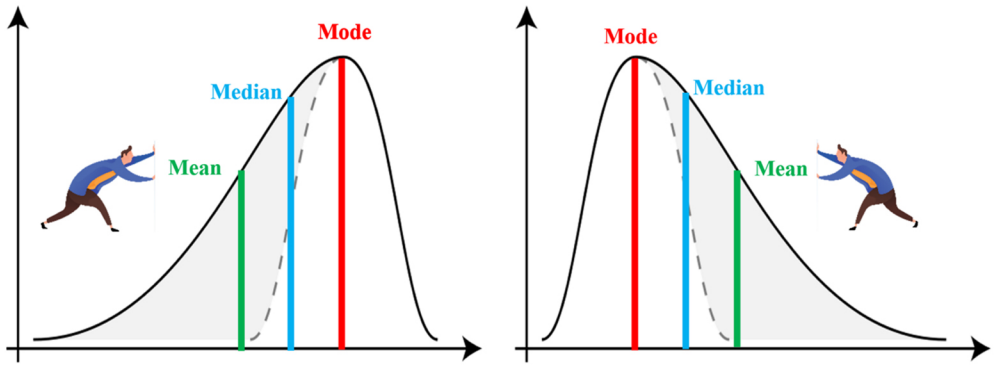
CHRIST
COLLEGE (AUTONOMOUS)
IRINJALAKUDA, KERALA

UNIQUE INITIATIVE- 2
CHRIST OPENCOURSEWARE

IQAC,
Christ College (Autonomous), Irinjalakuda


Student Progress
Bench Marking
Corrective Actions
PTA Meeting
Department Meeting
CRAR
Identify Papers
Identify Weak students
Result Analysis


one standard deviation
standard deviations from the mean
-4σ -3σ -2σ -1σ 0 +1σ +2σ +3σ +4σ
z-scores
-4.0 -3.0 -2.0 -1.0 0 +1.0 +2.0 +3.0 +4.0


Mode
Median
Mean
Mode
Median
Mean

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CRAR (Comprehensive Result Analysis & Review)

Introduction

Results Analysis helps to understand how students are learning, and how they **have** performed in each area of the programme. Result analysis report can be used to identify areas of strength and weakness of a student. It also reveals the quality of teaching and the areas to be focused. The detailed analysis of examination results was started from 2017 onwards.

Immediately after the publication of end semester results, the data analysis team downloads the result in excel format. Analysis is done using the excel templates. Reports are prepared and send to HoD/ Programme Coordinator for review and corrective actions. The reports are also presented in the IQAC meeting.

Comprehensive result analysis:

Detailed analysis of exam results is needed for effective corrective actions. A poor exam result may be due to several issues like a) Inadequate question paper b) Poor teacher performance c) Poor student performance to name a few. Digging the data and proper interpretation is essential to list out the reasons. The CRAR is a project initiated by IQAC to understand the real reason behind the exam results.

Reports generated from CRAR project report will enable the Head of the Department/Programme Coordinator to make additional efforts to upgrade the results.

Objectives

- Identify / select courses in which students are showing weak performance
- Set benchmarks for each year for continuous growth
- Corrective measures for each paper
- Identify weakness of each student and take corrective measures
- Alert students about their performance and inform parents

Methodology

All the calculations were done in Microsoft excel sheets. The master calculation sheet is shared to data analysis team who performs the calculations downloaded from ERP software.

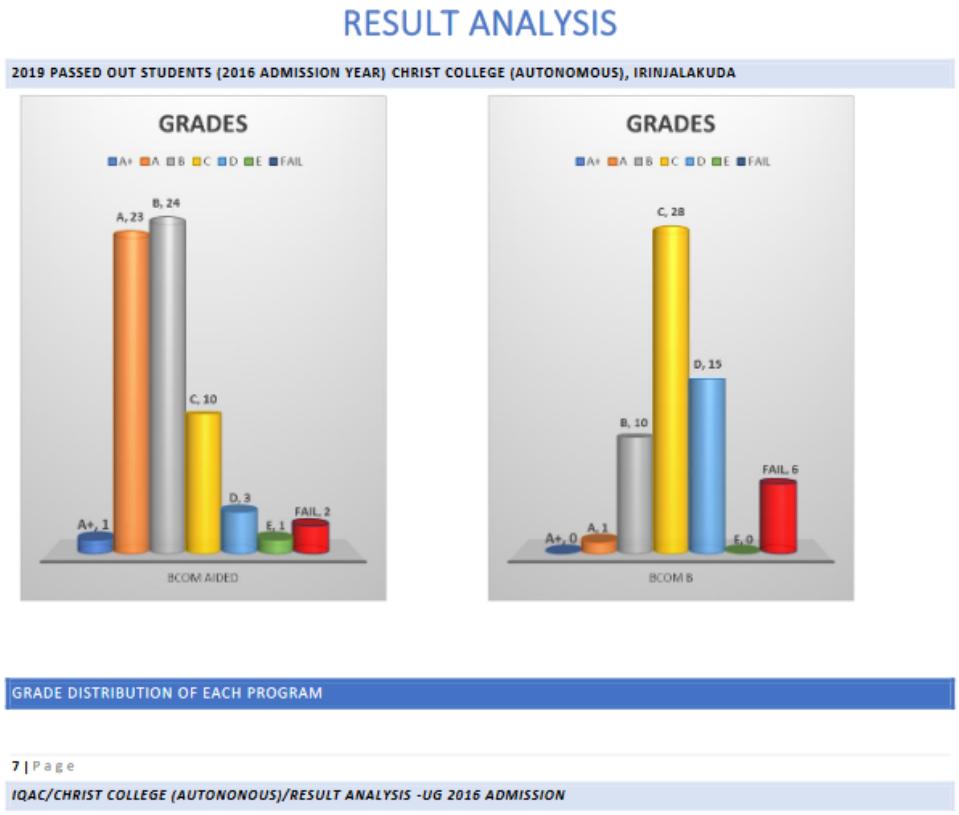
Our result analysis consists of three parts

- Results of Class (Programme)
- Results of a course (paper)
- Results of Individual student

Part A: Results of Class

This section of the report highlights the performance of any batch. Percentage of pass, grades give a rough idea about the performance of the batch

Fig.



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B

-

of

1. Grade and Pass Percentage of each program.

Part B: Results of a Course (Paper)

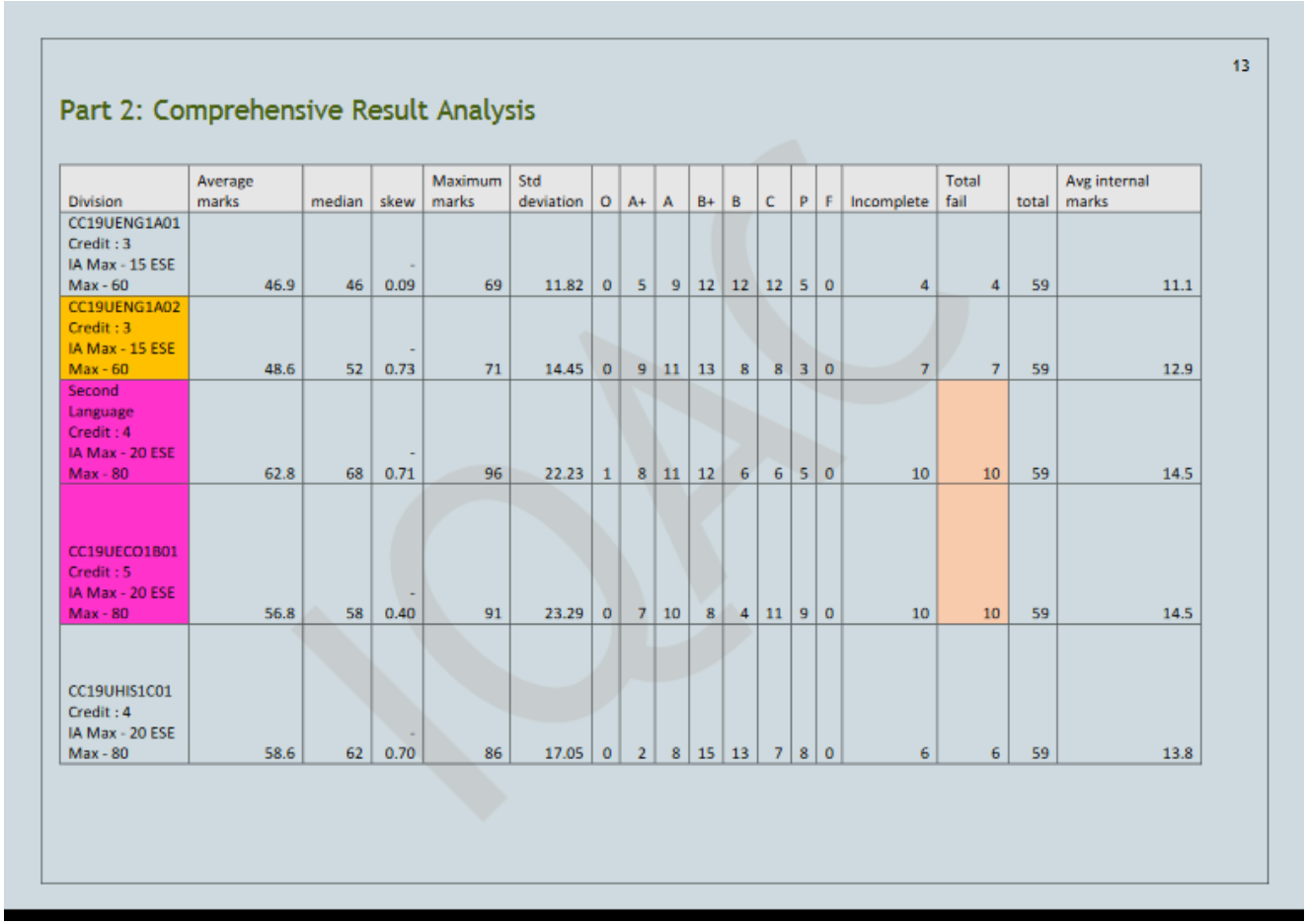
Following key factors are measured from results of each paper

Pass Percentage

Grade Distribution- No of students who gained different grades in each A+, A, B+, etc.

Mean, Median, Skewness, Std deviation each course (paper)

The detailed analysis gives an idea of the course which is an outlier.



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Part 2: Comprehensive Result Analysis

Division	Average marks	median	skew	Maximum marks	Std deviation	O	A+	A	B+	B	C	P	F	Incomplete	Total fail	total	Avg internal marks
CC19UENG1A01 Credit : 3 IA Max - 15 ESE Max - 60	46.9	46	-0.09	69	11.82	0	5	9	12	12	12	5	0	4	4	59	11.1
CC19UENG1A02 Credit : 3 IA Max - 15 ESE Max - 60	48.6	52	-0.73	71	14.45	0	9	11	13	8	8	3	0	7	7	59	12.9
Second Language Credit : 4 IA Max - 20 ESE Max - 80	62.8	68	-0.71	96	22.23	1	8	11	12	6	6	5	0	10	10	59	14.5
CC19UECO1B01 Credit : 5 IA Max - 20 ESE Max - 80	56.8	58	-0.40	91	23.29	0	7	10	8	4	11	9	0	10	10	59	14.5
CC19UHIS1C01 Credit : 4 IA Max - 20 ESE Max - 80	58.6	62	-0.70	86	17.05	0	2	8	15	13	7	8	0	6	6	59	13.8

Fig. 2. Comprehensive analysis of a paper

The courses are selected statistically using the following criteria of Fail%, Skewness, Average marks, Std dev and Max. marks (of top performing student)

Targets

- Average marks greater than 70 with a negative skew
- Maximum marks above 85
- Standard deviation less than 18
- Pass percentage- above 80

Selection criteria

Papers were identified and selected to x, y, z categories based on the following table.

Selection criteria of courses					
Category	Fail %	skewness	Avg marks (%)	Std dev	Max marks (%)
z	>10	> + 0.5	<55	>18	<80
y	>10	> + 0.5	<55	>18	
x	>10	> + 0.5			

Fig 3. Selection criteria of courses

Remedial measures are suggested for statistically selected papers

Category	Actions
z	syllabus modifications
	additional crash course towards the beginning of exam
	make compulsory - anwering of previous question papers
	special coaching to weak learners
y	make compulsory - anwering of previous question papers
	special coaching to weak learners
x	special coaching to weak learners

Fig. 4 remedial measures for each paper

Part C: Results of Individual Student

Result of each student is analysed based on z-score and relative progress.

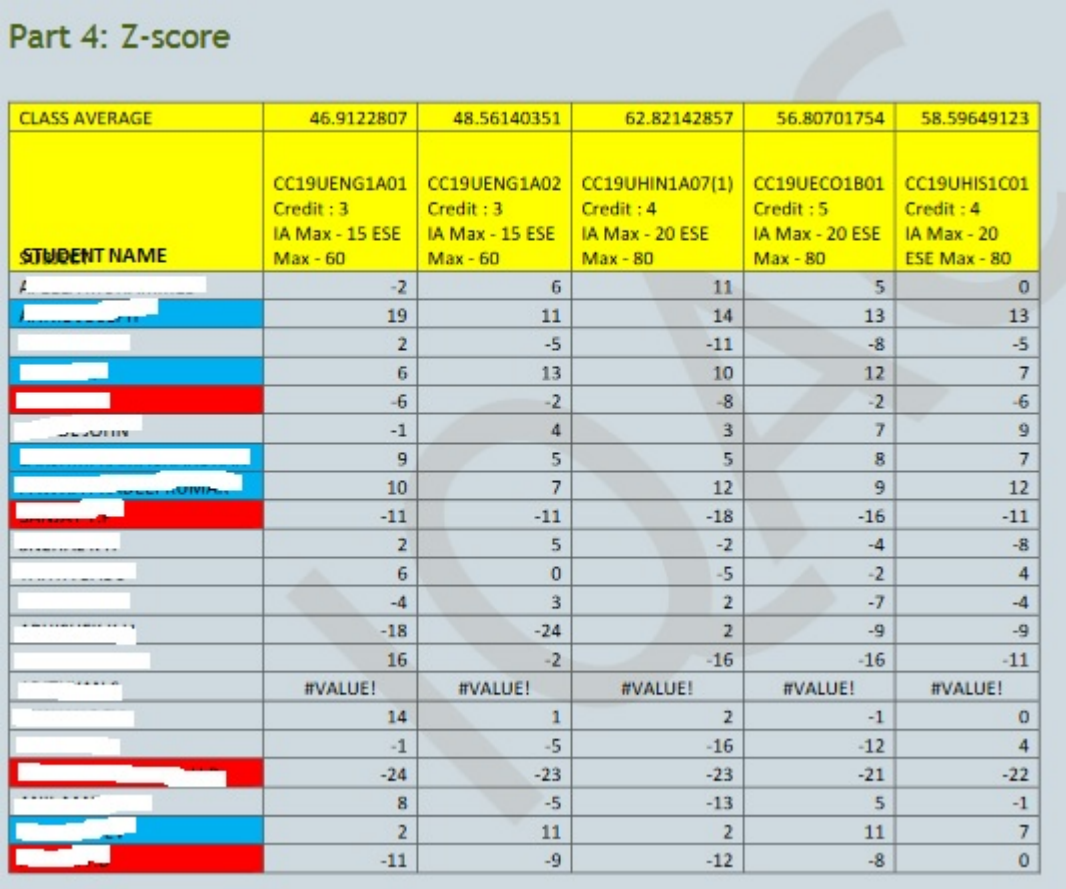
z-SCORE analysis:

The z-score of each student was calculated in all examinations to review the progress of student in each subject. This enables the mentor to identify the weakness of mentee and suggest corrective actions. HODs / Programme Coordinators can arrange remedial classes based on the z score. Class teachers can arrange Detailed

analysis of exam results which gives the performance of the class in each subject.

Fig. 5 z- score table*

*Student names are masked



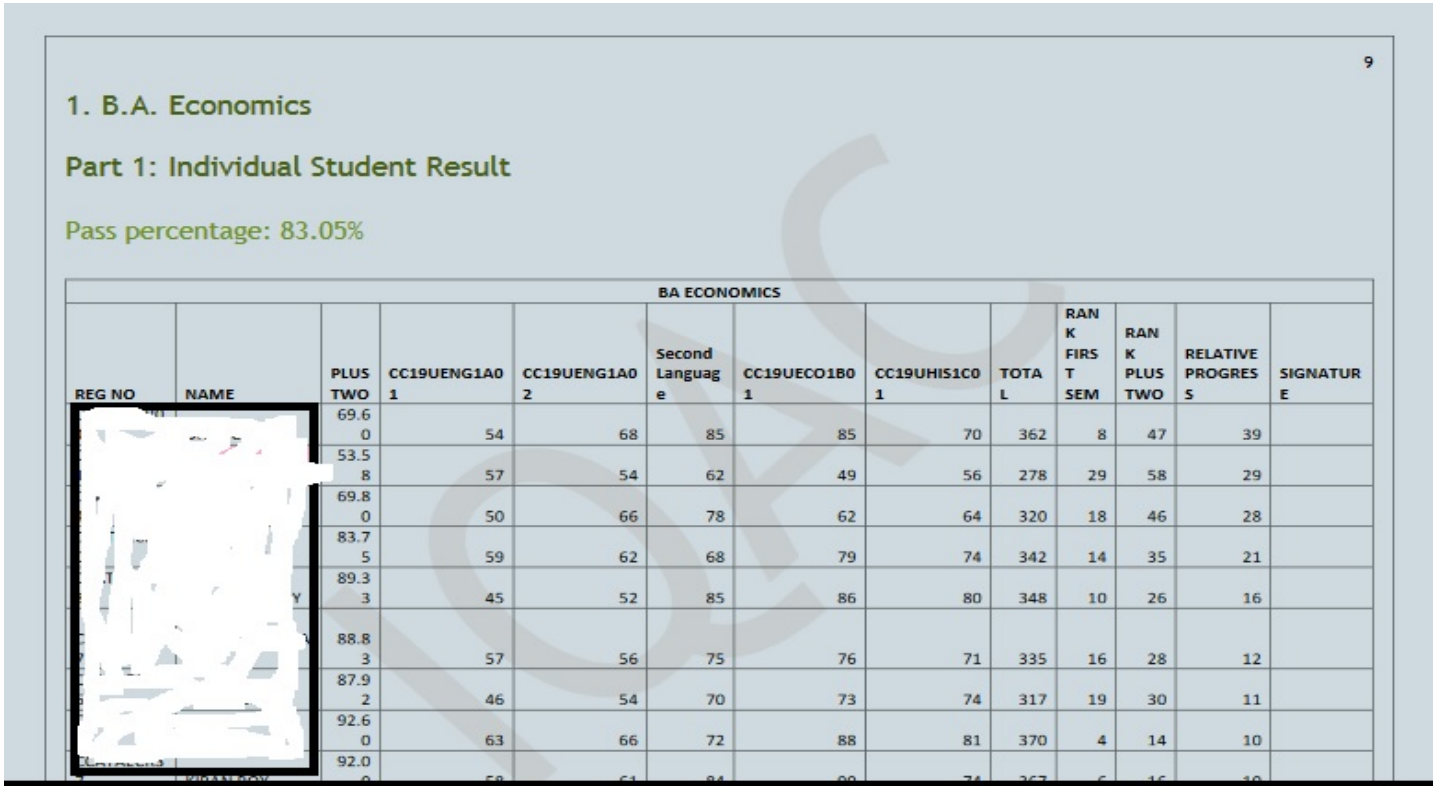
Part 4: Z-score

CLASS AVERAGE	46.9122807	48.56140351	62.82142857	56.80701754	58.59649123
STUDENT NAME	CC19UENG1A01 Credit : 3 IA Max - 15 ESE Max - 60	CC19UENG1A02 Credit : 3 IA Max - 15 ESE Max - 60	CC19UHIN1A07(1) Credit : 4 IA Max - 20 ESE Max - 80	CC19UECO1B01 Credit : 5 IA Max - 20 ESE Max - 80	CC19UHIS1C01 Credit : 4 IA Max - 20 ESE Max - 80
[redacted]	-2	6	11	5	0
[redacted]	19	11	14	13	13
[redacted]	2	-5	-11	-8	-5
[redacted]	6	13	10	12	7
[redacted]	-6	-2	-8	-2	-6
[redacted]	-1	4	3	7	9
[redacted]	9	5	5	8	7
[redacted]	10	7	12	9	12
[redacted]	-11	-11	-18	-16	-11
[redacted]	2	5	-2	-4	-8
[redacted]	6	0	-5	-2	4
[redacted]	-4	3	2	-7	-4
[redacted]	-18	-24	2	-9	-9
[redacted]	16	-2	-16	-16	-11
[redacted]	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
[redacted]	14	1	2	-1	0
[redacted]	-1	-5	-16	-12	4
[redacted]	-24	-23	-23	-21	-22
[redacted]	8	-5	-13	5	-1
[redacted]	2	11	2	11	7
[redacted]	-11	-9	-12	-8	0

Relative progress:

The relative progress is measured comparing the semester rank with the plus two rank of the student. This gives an idea on the relative progress of student with respect to his incoming quality.

Fig 6. Relative progress of each student in relation with plus two marks



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1. B.A. Economics

Part 1: Individual Student Result

Pass percentage: 83.05%

BA ECONOMICS												
REG NO	NAME	PLUS TWO	CC19UENG1A01	CC19UENG1A02	Second Language	CC19UECO1B01	CC19UHIS1C01	TOTAL	RANK FIRST SEM	RANK PLUS TWO	RELATIVE PROGRESS	SIGNATURE
[redacted]		69.60	54	68	85	85	70	362	8	47	39	
		53.58	57	54	62	49	56	278	29	58	29	
		69.80	50	66	78	62	64	320	18	46	28	
		83.75	59	62	68	79	74	342	14	35	21	
		89.33	45	52	85	86	80	348	10	26	16	
		88.83	57	56	75	76	71	335	16	28	12	
		87.92	46	54	70	73	74	317	19	30	11	
		92.60	63	66	72	88	81	370	4	14	10	
		92.00	58	61	84	88	74	367	6	16	10	

Sample Reports

Sample reports are available in College e-repository

Outcomes

- The results were discussed with parents during the open house.
- Students who were showing a downward trend in academics were alerted.
- The results were discussed in the department meetings which resulted in corrective measures.
- Parents appreciated the result analysis in the PTA meeting as they are aware about students' progress in every year.
- Management offered fee concession and Pragathi Samman awards to students who show positive progression.
- The pass percentage of outgoing students are progressing.

Data Analysis Team

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Viji Rajesh (HOD, Department of Computer Science)

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Siji C L (Assistant Professor, Department of Commerce-self)

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Glossary

Average (Mean)

The **Arithmetic Mean** is the average of the numbers: a calculated "central" value of a set of numbers.

To calculate it:

• add up all the numbers,

• then divide by how many numbers there are.

Median

The median is the middle number in a sorted, ascending or descending, list of numbers and can be more descriptive of that data set than the average.

The median is sometimes used as opposed to the mean when there are outliers in the sequence that might skew the average of the values.

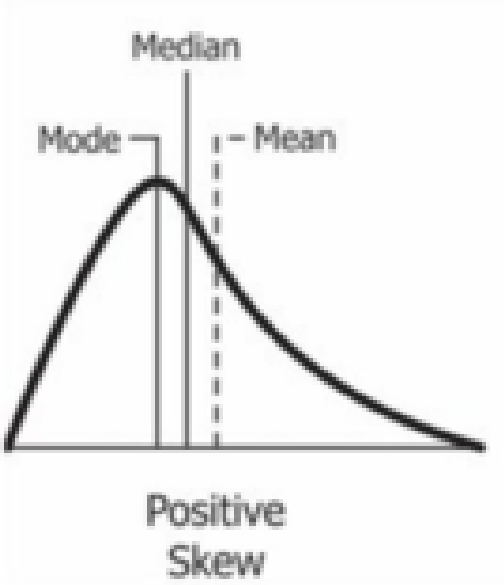
Skewness

Skewness refers to distortion or asymmetry in a symmetrical bell curve, or normal distribution, in a set of data. If the curve is shifted to the left or to the right, it is said to be skewed.

Skewness can be quantified as a representation of the extent to which a given distribution varies from a normal distribution.

Positive skewness

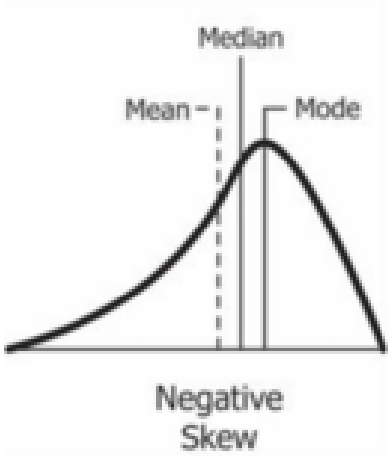
Mean (average) marks greater than median- more number of students are having less marks



Positive skew values are not good

Negative skewness

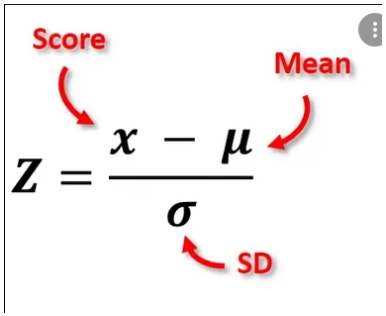
Mean (average) marks less than median- more number of students are having high marks



Negative skew values are good

Z-Score

The value of the z-score tells you how many standard deviations you are away from the mean. If a z-score is equal to 0, it is on the mean. A positive z-score indicates the raw score is higher than the mean average. For example, if a z-score is equal to +1, it is 1 standard deviation above the mean.



In the present report the calculated z score are multiplied by 10 for aesthetic purpose.

Students who show positive and negative z scores are highlighted for easy identification.