COURSE-EPC-3 (1.4 EPC3)

# CRITICAL UNDERSTANDING OF ICT

## Engagement with Field

# PRACTICUM-01

## TOPIC-05

# PROJECT TO CREATING MARKSHEET USING MICROSOFT OFFICE(2007)

**Presented By:-NAME OF THE STUDENT TEACHER**

**Registration No:-**

**Roll No:-**

NAME OF THE INSTITUTE:-PURNADISHA JOYCHANDI TEACHER TRAINING COLLEGE

Session:-2023-2025

# Objectives

- To learn the use of MS Excel for educational record-keeping.
- To create an automated marksheet for students.
- To apply formulas and functions for calculating total, percentage, and grade.
- To understand the role of ICT in assessment and evaluation.

# Materials and Tools Used

- **Computer system** with MS Office 2007 installed
- **MS Excel 2007** (for creating the marksheet)
- **PowerPoint Presentation** (for explaining process to students)
- **Smart Board** (for live demonstration)
- **LCD Projector** (for classroom presentation)
- **Camcorder** (to record the session for ICT-based learning material)

# Marksheet Format in Excel

Every organization nowadays, whether it is any multinational company, small proprietorship, school or college, etc., uses MS Excel to maintain their data and analyze the data for taking decisions. In schools, there are more than 1000 students in various standards and divisions. It is difficult to maintain their data manually in registers. That is why the management of schools uses MS Excel to maintain data of students. In the excel marksheet, we have to manipulate the marks of students in various ways to evaluate their performance and give the result.

Let us understand how to create marksheet in excel.
Suppose, we have following data for marks scored in various subjects by 150 students.

| | A | B | C | D | E | F | G | H | I | J | K | L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | XIIth Standard | | | | | | | | | | | |
| 2 | Sr. No. | Division | Roll No | Name | Accountancy | English | Maths | Economics | Business Studies | Total | Average | Grade |
| 3 | 1 | A | 1 | Akhilesh | 97 | 36 | 47 | 13 | 34 | | | |
| 4 | 2 | A | 2 | Ruchi | 69 | 85 | 86 | 51 | 53 | | | |
| 5 | 3 | A | 3 | Bhawna | 19 | 72 | 41 | 53 | 40 | | | |
| 6 | 4 | A | 4 | Isha | 76 | 68 | 46 | 11 | 22 | | | |
| 7 | 5 | A | 5 | Chetan | 55 | 31 | 56 | 99 | 93 | | | |
| 8 | 6 | A | 6 | Neeti | 84 | 57 | 68 | 30 | 31 | | | |
| 9 | 7 | A | 7 | Chanchal | 18 | 46 | 51 | 63 | 22 | | | |
| 10 | 8 | A | 8 | Preeti | 93 | 93 | 31 | 93 | 20 | | | |
| 11 | 9 | A | 9 | Richa | 33 | 89 | 55 | 46 | 69 | | | |
| 12 | 10 | A | 10 | Manish | 21 | 27 | 84 | 82 | 96 | | | |
| 13 | 11 | A | 11 | Karun | 13 | 48 | 27 | 26 | 38 | | | |

We want to find the total marks scored, an average of marks (this will also help us to give students grade) and result that whether the student is passed or failed.

# #1 – SUM Function

To find out the total, we will use the SUM

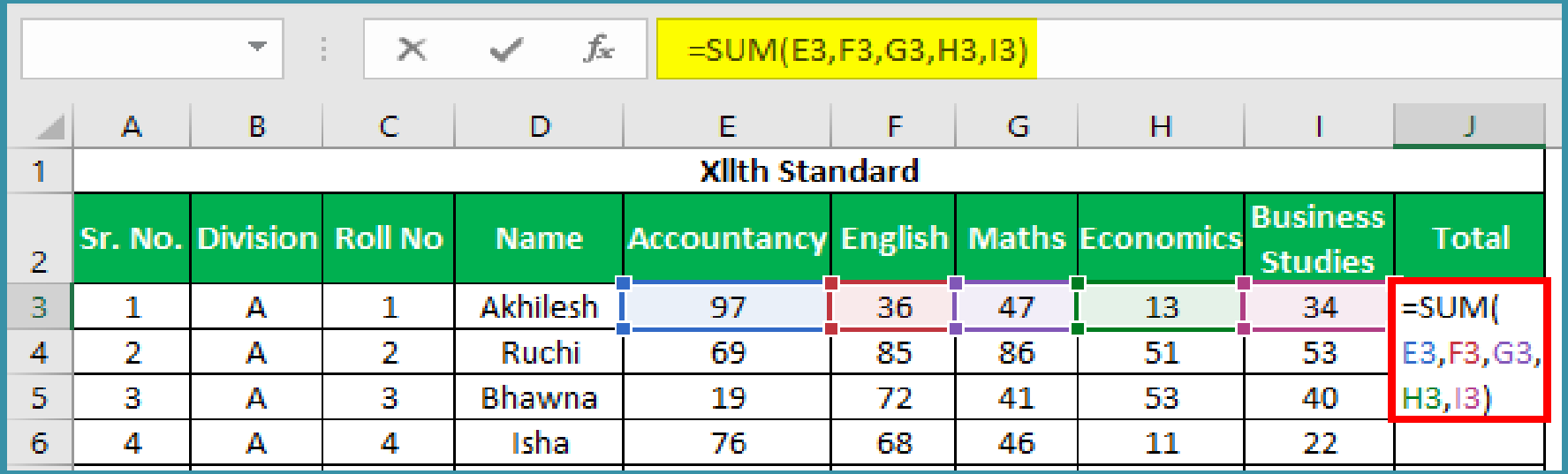
The syntax for the SUM function is as follows:


This function takes 255 numbers in this way to add. But we can also give the range for more than 255 numbers too as an argument for the function, to sum up.

There are various methods to specify numbers as follows:

## #1 – Comma Method

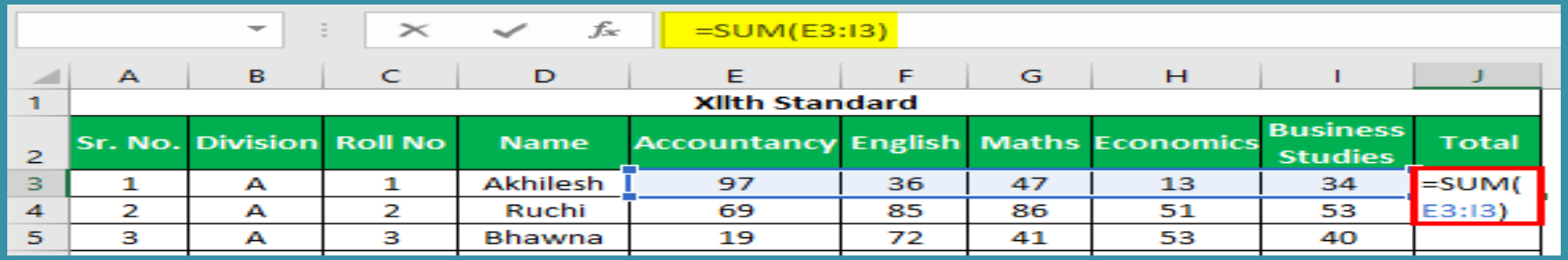
In this method, we use commas for specifying and separating the arguments. We have specified or selected various cells with commas.



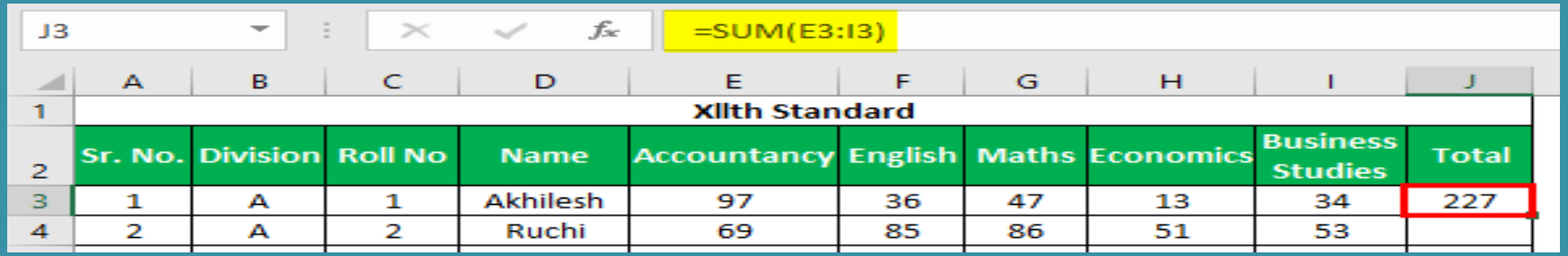

| | A | B | C | D | E | F | G | H | I | J |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | XIIth Standard | | | | | | | | | |
| 2 | Sr. No. | Division | Roll No | Name | Accountancy | English | Maths | Economics | Business Studies | Total |
| 3 | 1 | A | 1 | Akhilesh | 97 | 36 | 47 | 13 | 34 | =SUM( |
| 4 | 2 | A | 2 | Ruchi | 69 | 85 | 86 | 51 | 53 | E3,F3,G3, |
| 5 | 3 | A | 3 | Bhawna | 19 | 72 | 41 | 53 | 40 | H3,I3) |
| 6 | 4 | A | 4 | Isha | 76 | 68 | 46 | 11 | 22 | |

## #2 – Colon Method (Shift Method)

In this method, we have used 'Shift' key after selecting the first cell (E3) and then used the Right Arrow key to select cells till I3. We can select continuous cells or specify the range with colon manually.




Total will be –



After entering the formula for the first student, we can copy down the formula using Ctrl+D as shortcut key after selecting the range with the first cell at the top so that this formula can be copied down.

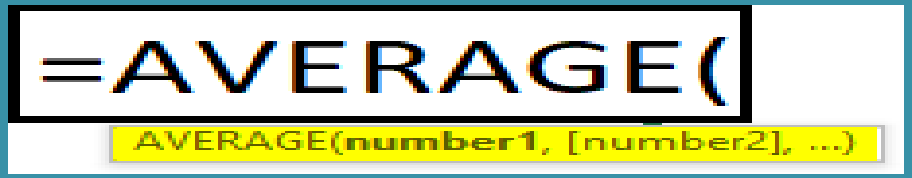
Apply the above formula to all the remaining cells. We get the following result.

J3 =SUM(E3:I3)

| | A | B | C | D | E | F | G | H | I | J |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | XIIth Standard | | | | | | | | | |
| 2 | Sr. No. | Division | Roll No | Name | Accountancy | English | Maths | Economics | Business Studies | Total |
| 3 | 1 | A | 1 | Akhilesh | 97 | 36 | 47 | 13 | 34 | 227 |
| 4 | 2 | A | 2 | Ruchi | 69 | 85 | 86 | 51 | 53 | 344 |
| 5 | 3 | A | 3 | Bhawna | 19 | 72 | 41 | 53 | 40 | 225 |
| 6 | 4 | A | 4 | Isha | 76 | 68 | 46 | 11 | 22 | 223 |
| 7 | 5 | A | 5 | Chetan | 55 | 31 | 56 | 99 | 93 | 334 |
| 8 | 6 | A | 6 | Neeti | 84 | 57 | 68 | 30 | 31 | 270 |
| 9 | 7 | A | 7 | Chanchal | 18 | 46 | 51 | 63 | 22 | 200 |
| 10 | 8 | A | 8 | Preeti | 93 | 93 | 31 | 93 | 20 | 330 |

## #2 – AVERAGE Function

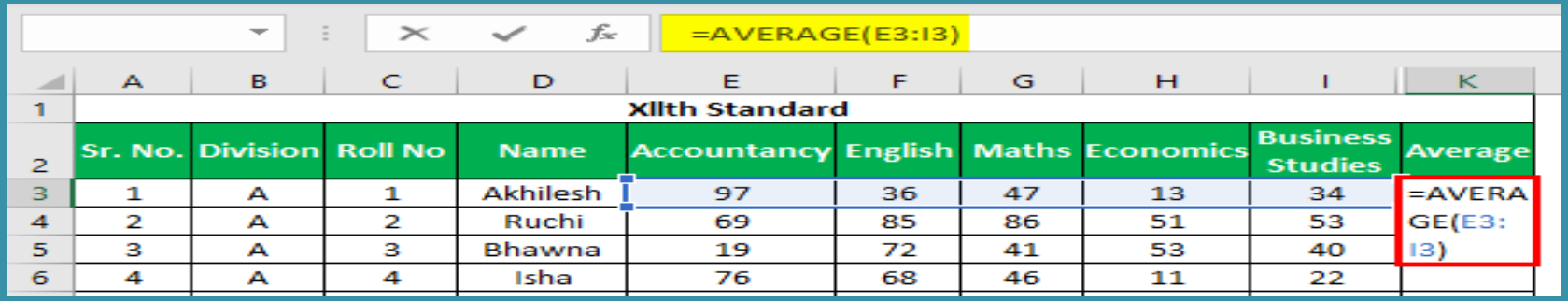
For calculating Average Marks, we will use the AVERAGE function. The syntax for the AVERAGE function is same as SUM function.




This function returns the average of its arguments.

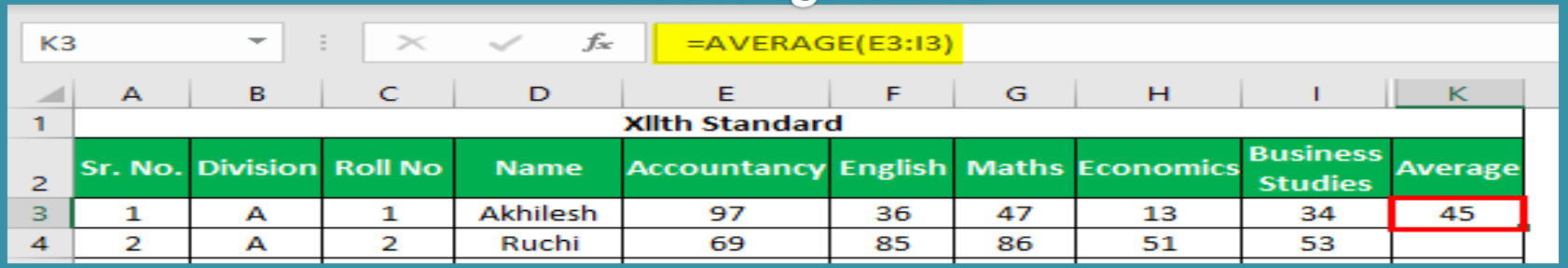
We can pass arguments to this function in the same way as we pass arguments to the SUM function.

For evaluating average in the excel marksheet, we will use AVERAGE function in the following way. We will select marks scored by a student in all 5 subjects.




| | A | B | C | D | E | F | G | H | I | K |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | XIIth Standard | | | | | | | | | |
| 2 | Sr. No. | Division | Roll No | Name | Accountancy | English | Maths | Economics | Business Studies | Average |
| 3 | 1 | A | 1 | Akhilesh | 97 | 36 | 47 | 13 | 34 | =AVERAGE(E3:I3) |
| 4 | 2 | A | 2 | Ruchi | 69 | 85 | 86 | 51 | 53 | |
| 5 | 3 | A | 3 | Bhawna | 19 | 72 | 41 | 53 | 40 | |
| 6 | 4 | A | 4 | Isha | 76 | 68 | 46 | 11 | 22 | |

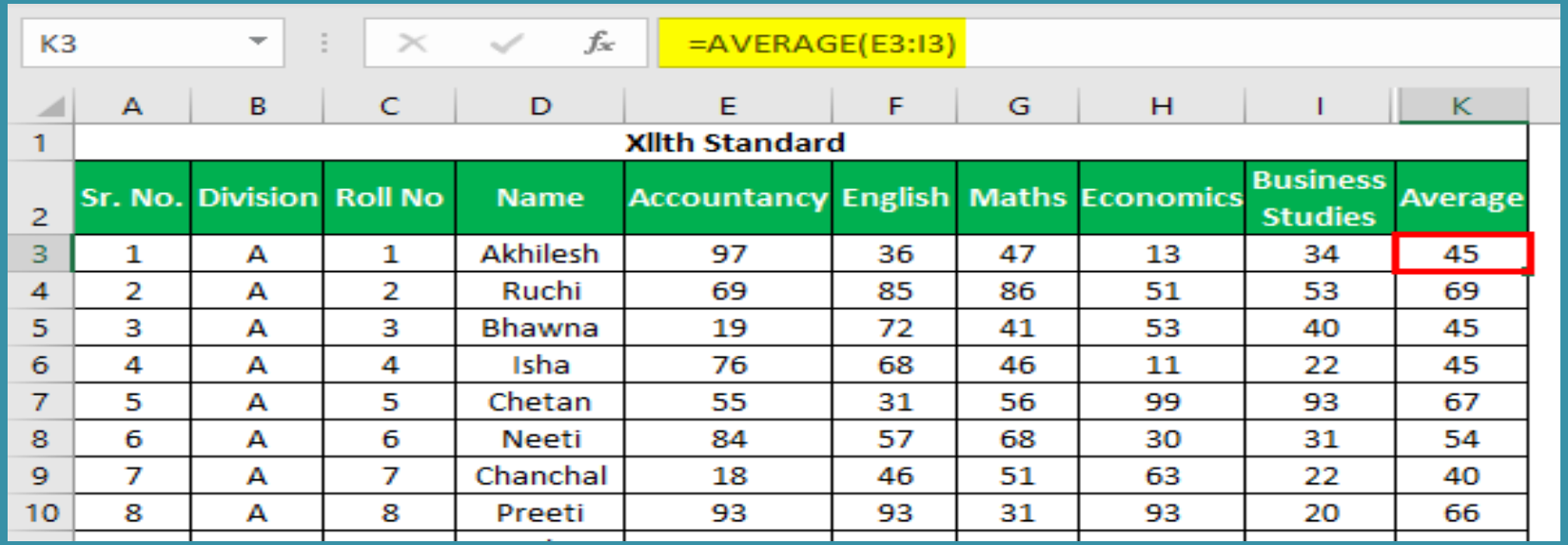
The average will be –




| | A | B | C | D | E | F | G | H | I | K |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | XIIth Standard | | | | | | | | | |
| 2 | Sr. No. | Division | Roll No | Name | Accountancy | English | Maths | Economics | Business Studies | Average |
| 3 | 1 | A | 1 | Akhilesh | 97 | 36 | 47 | 13 | 34 | 45 |
| 4 | 2 | A | 2 | Ruchi | 69 | 85 | 86 | 51 | 53 | |

We will use Ctrl+D to copy down the function.

Apply the above formula to all the remaining cells. We get the following result.



K3 =AVERAGE(E3:I3)

| | A | B | C | D | E | F | G | H | I | K |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | XIIth Standard | | | | | | | | | |
| 2 | Sr. No. | Division | Roll No | Name | Accountancy | English | Maths | Economics | Business Studies | Average |
| 3 | 1 | A | 1 | Akhilesh | 97 | 36 | 47 | 13 | 34 | 45 |
| 4 | 2 | A | 2 | Ruchi | 69 | 85 | 86 | 51 | 53 | 69 |
| 5 | 3 | A | 3 | Bhawna | 19 | 72 | 41 | 53 | 40 | 45 |
| 6 | 4 | A | 4 | Isha | 76 | 68 | 46 | 11 | 22 | 45 |
| 7 | 5 | A | 5 | Chetan | 55 | 31 | 56 | 99 | 93 | 67 |
| 8 | 6 | A | 6 | Neeti | 84 | 57 | 68 | 30 | 31 | 54 |
| 9 | 7 | A | 7 | Chanchal | 18 | 46 | 51 | 63 | 22 | 40 |
| 10 | 8 | A | 8 | Preeti | 93 | 93 | 31 | 93 | 20 | 66 |

As we can see that we have got values in decimal for average marks which doesn't look good. Now we will use the ROUND function to round the values to the nearest integer.

## #3 – ROUND Function

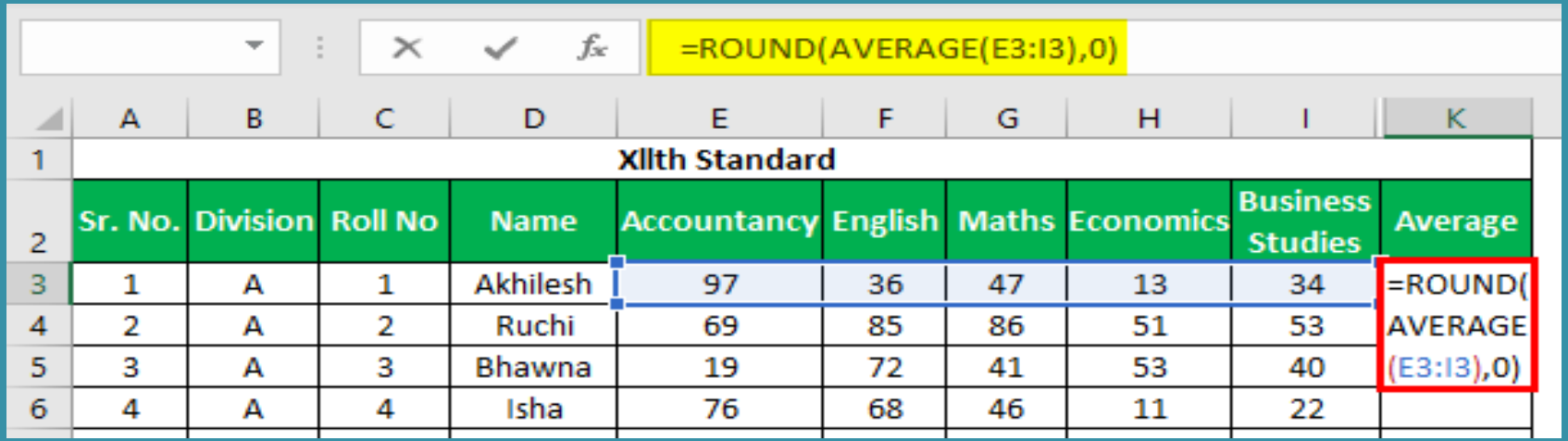
This function is used to round the values to the specified number of digits. The syntax for the ROUND function is as follows:

## Arguments Explanation

- Number: For this argument, we need to provide the number which we want to round. We can give reference to the cell containing a number or specify number itself.

- Num_digits: In this argument, we specify the number of digits which we wantafter the point in the number. If we want pure integer then we specify 0.

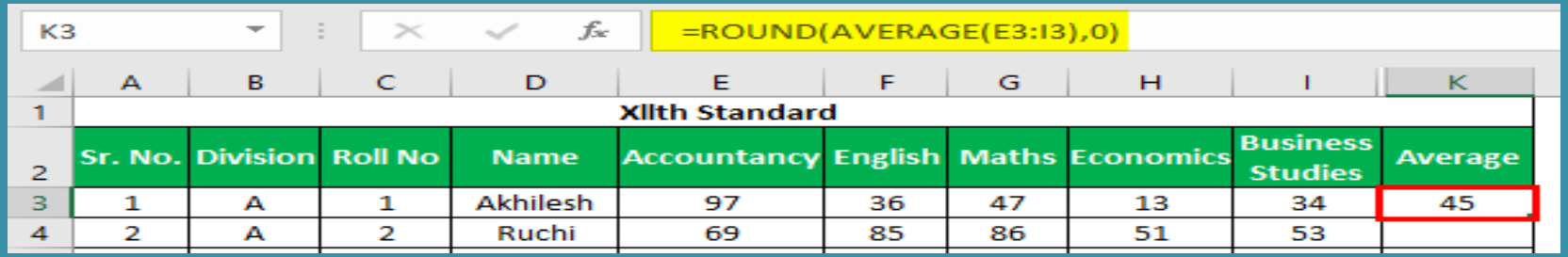
Let us use this function in excel marksheet. We will wrap up the AVERAGE function with ROUND function to round the number which will be returned by the AVERAGE function.




| | A | B | C | D | E | F | G | H | I | K |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | XIIth Standard | | | | | | | | | |
| 2 | Sr. No. | Division | Roll No | Name | Accountancy | English | Maths | Economics | Business Studies | Average |
| 3 | 1 | A | 1 | Akhilesh | 97 | 36 | 47 | 13 | 34 | =ROUND( |
| 4 | 2 | A | 2 | Ruchi | 69 | 85 | 86 | 51 | 53 | AVERAGE |
| 5 | 3 | A | 3 | Bhawna | 19 | 72 | 41 | 53 | 40 | (E3:I3),0) |
| 6 | 4 | A | 4 | Isha | 76 | 68 | 46 | 11 | 22 | |

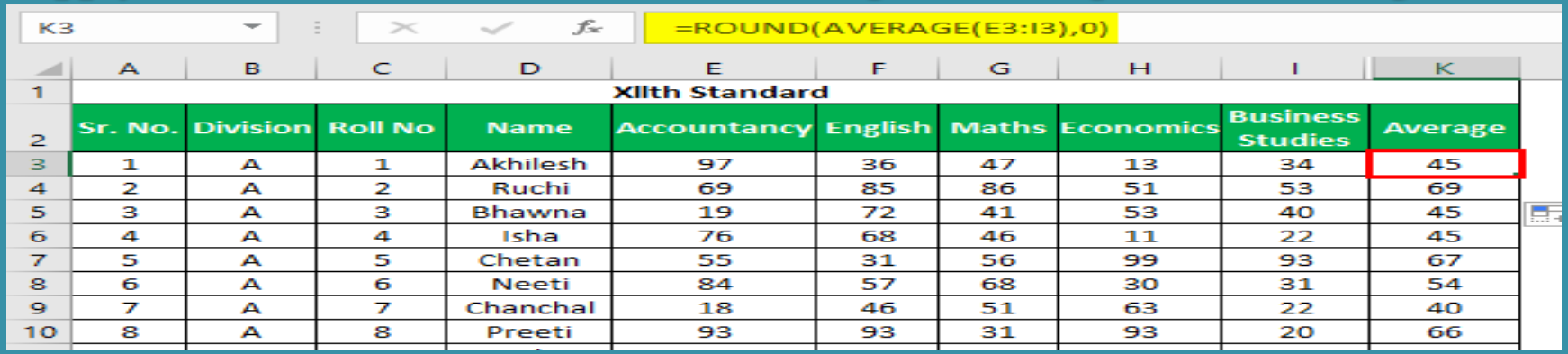
We have used the AVERAGE function for number argument and 0 for num_digits.

After pressing Enter, we will get the desired result i.e., number with no decimal digit. The average will be –




| | A | B | C | D | E | F | G | H | I | K |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | XIIth Standard | | | | | | | | | |
| 2 | Sr. No. | Division | Roll No | Name | Accountancy | English | Maths | Economics | Business Studies | Average |
| 3 | 1 | A | 1 | Akhilesh | 97 | 36 | 47 | 13 | 34 | 45 |
| 4 | 2 | A | 2 | Ruchi | 69 | 85 | 86 | 51 | 53 | |

Apply the above formula to all the remaining cells. We get the following result.




| | A | B | C | D | E | F | G | H | I | K |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | XIIth Standard | | | | | | | | | |
| 2 | Sr. No. | Division | Roll No | Name | Accountancy | English | Maths | Economics | Business Studies | Average |
| 3 | 1 | A | 1 | Akhilesh | 97 | 36 | 47 | 13 | 34 | 45 |
| 4 | 2 | A | 2 | Ruchi | 69 | 85 | 86 | 51 | 53 | 69 |
| 5 | 3 | A | 3 | Bhawna | 19 | 72 | 41 | 53 | 40 | 45 |
| 6 | 4 | A | 4 | Isha | 76 | 68 | 46 | 11 | 22 | 45 |
| 7 | 5 | A | 5 | Chetan | 55 | 31 | 56 | 99 | 93 | 67 |
| 8 | 6 | A | 6 | Neeti | 84 | 57 | 68 | 30 | 31 | 54 |
| 9 | 7 | A | 7 | Chanchal | 18 | 46 | 51 | 63 | 22 | 40 |
| 10 | 8 | A | 8 | Preeti | 93 | 93 | 31 | 93 | 20 | 66 |

## #4 – IF Function

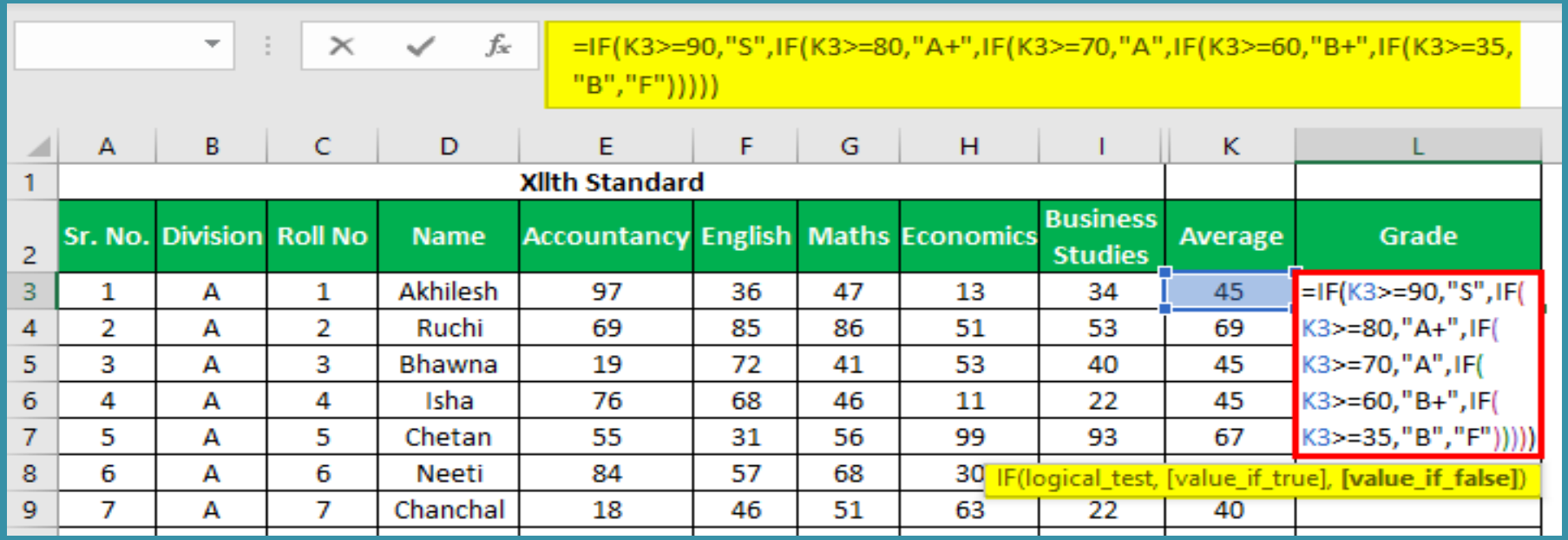
Now to find out the grade, we have the following criteria.

- If the student has scored average marks greater than or equal to 90 then Student will get grade S
- If the student has scored average marks greater than or equal to 80 then Student will get grade A+
- If the student has scored average marks greater than or equal to 70 then Student will get grade A
- If the student has scored average marks greater than or equal to 60 then Student will get grade B+
- If the student has scored average marks greater than or equal to 35 then Student will get grade B

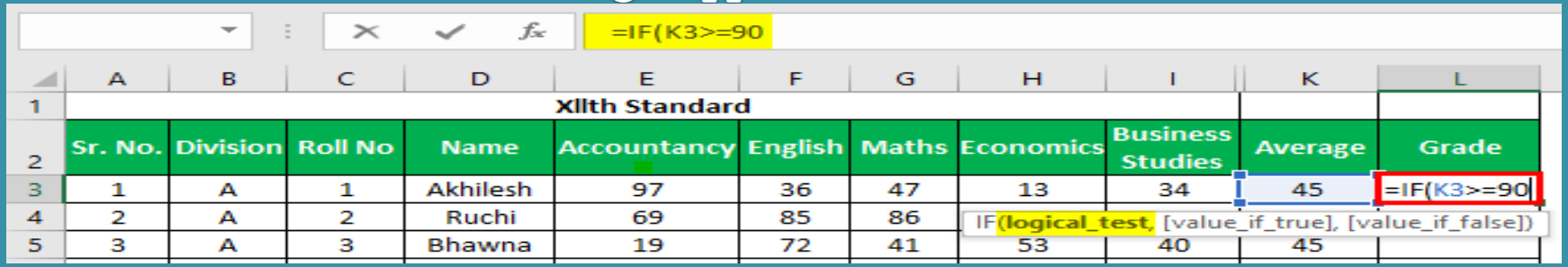
- If the student has scored average marks less than 35 then Student will get grade F.

To apply these criteria, we will use the IF function multiple times. This is called NESTED IF also as we will use IF function to give an argument to the IF function itself.

We have used the following formula to evaluate grade in excel marksheet.



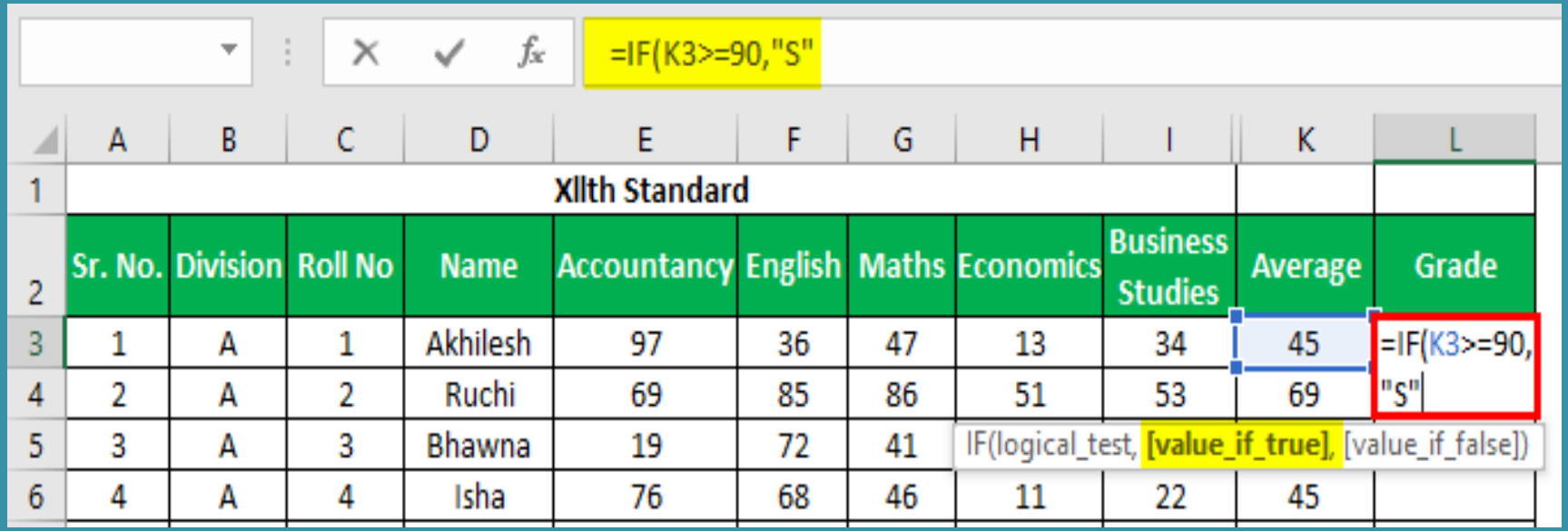
## Let us understand the logic applied in the formula.



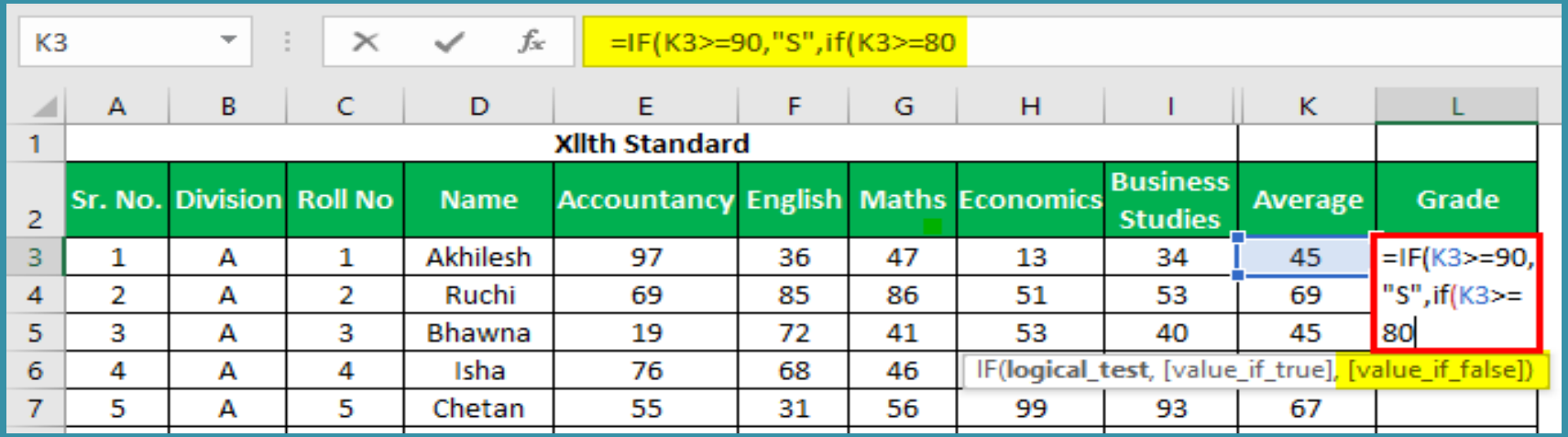

As we can see that for 'logical_test' which is the criterion, we have given reference of K3 cell containing AVERAGE of marks and have used logical operators which is 'Greater
Than' and 'Equal To' and then compared the value with 90.

It means if the average marks scored by the student is greater than or equal to 90 then write the value which we will specify in the 'value_if_true' argument and if this criterion is not satisfied by the average marks then what should be written in the cell as 'Grade', that we will specify for 'value_if_false' argument.

**For ‘value_if_true’ argument, we will specify text (Grade) within double quotes i.e., “S”.**



For ‘value_if_false’ argument, we will again start writing IF function as we have many more criteria and the corresponding grade to assign if this criterion is not satisfied.



Now we have started writing IF function again for ‘value_if_false’ argument and specified the criteria to compare average marks with 80 this time.

The result will be –

L3

=IF(K3>=90,"S",IF(K3>=80,"A+",IF(K3>=70,"A",IF(K3>=60,"B+",IF(K3>=35,"B","F")))))

| | A | B | C | D | E | F | G | H | I | K | L |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | XIIth Standard | | | | | | | | | | |
| 2 | Sr. No. | Division | Roll No | Name | Accountancy | English | Maths | Economics | Business Studies | Average | Grade |
| 3 | 1 | A | 1 | Akhilesh | 97 | 36 | 47 | 13 | 34 | 45 | B |
| 4 | 2 | A | 2 | Ruchi | 69 | 85 | 86 | 51 | 53 | 69 | |

If average marks are greater than or equal to 70 but less than 80 (first IF function criteria), then Student will get 'A' grade.

L24

```
=IF(K24>=90,"S",IF(K24>=80,"A+",IF(K24>=70,"A",IF(K24>=60,"B+",IF(K24>=35,"B","F")))))
```

| | A | B | C | D | E | F | G | H | I | K | L |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | XIIth Standard | | | | | | | | | | |
| 2 | Sr. No. | Division | Roll No | Name | Accountancy | English | Maths | Economics | Business Studies | Average | Grade |
| 24 | 22 | A | 22 | Diskha | 65 | 55 | 75 | 95 | 71 | 72 | A |
| 25 | 23 | A | 23 | Deepak | 41 | 54 | 22 | 51 | 78 | 49 | B |
| 26 | 24 | A | 24 | Chinki | 87 | 69 | 42 | 52 | 67 | 63 | B+ |
| 27 | 25 | A | 25 | Chhavi | 19 | 32 | 20 | 62 | 80 | 43 | B |
| 28 | 26 | A | 26 | Manisha | 50 | 95 | 93 | 57 | 31 | 65 | B+ |
| 29 | 27 | A | 27 | Priya | 74 | 68 | 61 | 86 | 64 | 71 | A |
| 30 | 28 | A | 28 | Seema | 87 | 60 | 62 | 100 | 54 | 73 | A |

In this way, we will apply IF function in the same formula for 5 times, as we have 6 criteria.

Make sure as we have opened brackets for, IF function 5 times, we need to close all brackets.

## # 5 – COUNTIF

For finding out Result, whether a student is “PASSED” or “FAILED”, we have to apply the following criteria.

- If the student has scored greater than 200 as total marks and scored greater than 33 in all subjects then the student is PASSED.
- If a student has scored less than 33 in 1 or 2 subjects and total marks are greater than 200 then the student has got ER (Essential Repeat).
- If the student has scored less than 33 in more than 2 subjects or less than or equalto 200 as total marks, then the student is FAILED.

As we need to evaluate a number of subjects in which student has scored less than 33, we need to use COUNTIF function which will count numbers based on the specified criterion.

The syntax for the COUNTIF function is as follows:


Arguments

- Range: Here we need to give reference to the cells containing a number to compare the criterion with.
- Criteria: To specify the criterion, we can use logical operators so that onlythose numbers will be counted which will satisfy the criterion.

## AND Function

The syntax for AND function is as follows:


In AND function, we specify the criteria. If all the criteria are satisfied, then only TRUE comes. We can specify up to 255 criteria.

=IF(AND(J3>200,COUNTIF(E3:I3,">=33")=5),"PASSED",IF(AND(COUNTIF(E3:I3,">=33")>2,J3>200),"ER","FAILED"))

| | A | B | C | D | E | F | G | H | I | J | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | XIIth Standard | | | | | | | | | | |
| 2 | Sr. No. | Division | Roll No | Name | Accountancy | English | Maths | Economics | Business Studies | Total | Result |
| 3 | 1 | A | 1 | Akhilesh | 97 | 36 | 47 | 13 | 34 | 227 | =IF(AND(J3>200, COUNTIF(E3:I3,">=33")=5),"PASSED",IF(AND(COUNTIF(E3:I3,">=33")>2,J3>200),"ER","FAILED")) |
| 4 | 2 | A | 2 | Ruchi | 69 | 85 | 86 | 51 | 53 | 344 | |
| 5 | 3 | A | 3 | Bhawna | 19 | 72 | 41 | 53 | 40 | 225 | |
| 6 | 4 | A | 4 | Isha | 76 | 68 | 46 | 11 | 22 | 223 | |
| 7 | 5 | A | 5 | Chetan | 55 | 31 | 56 | 99 | 93 | 334 | |
| 8 | 6 | A | 6 | Neeti | 84 | 57 | 68 | 30 | 31 | 270 | |
| 9 | 7 | A | 7 | Chanchal | 18 | 46 | 51 | 63 | 22 | 200 | |

As this can be seen, we have used AND function inside IF function to give multiple criteria and COUNTIF function inside AND function to count the number of subjects in which student has scored greater than or equal to 33.

The result will be –

M3

```
=IF(AND(J3>200,COUNTIF(E3:I3,">=33")=5),"PASSED",IF(
AND(COUNTIF(E3:I3,">=33")>2,J3>200),"ER","FAILED"))
```

| | A | B | C | D | E | F | G | H | I | J | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | XIIth Standard | | | | | | | | | | |
| 2 | Sr. No. | Division | Roll No | Name | Accountancy | English | Maths | Economics | Business Studies | Total | Result |
| 3 | 1 | A | 1 | Akhilesh | 97 | 36 | 47 | 13 | 34 | 227 | ER |
| 4 | 2 | A | 2 | Ruchi | 69 | 85 | 86 | 51 | 53 | 344 | |

Apply the above formula to all the remaining cells. We get the following result.

M3

=IF(AND(J3>200,COUNTIF(E3:I3,">=33")=5),"PASSED",IF(AND(COUNTIF(E3:I3,">=33")>2,J3>200),"ER","FAILED"))

| | A | B | C | D | E | F | G | H | I | J | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | XIIth Standard | | | | | | | | | | |
| 2 | Sr. No. | Division | Roll No | Name | Accountancy | English | Maths | Economics | Business Studies | Total | Result |
| 3 | 1 | A | 1 | Akhilesh | 97 | 36 | 47 | 13 | 34 | 227 | ER |
| 4 | 2 | A | 2 | Ruchi | 69 | 85 | 86 | 51 | 53 | 344 | PASSED |
| 5 | 3 | A | 3 | Bhawna | 19 | 72 | 41 | 53 | 40 | 225 | ER |
| 6 | 4 | A | 4 | Isha | 76 | 68 | 46 | 11 | 22 | 223 | ER |
| 7 | 5 | A | 5 | Chetan | 55 | 31 | 56 | 99 | 93 | 334 | ER |
| 8 | 6 | A | 6 | Neeti | 84 | 57 | 68 | 30 | 31 | 270 | ER |
| 9 | 7 | A | 7 | Chanchal | 18 | 46 | 51 | 63 | 22 | 200 | FAILED |

- Make sure to close the brackets for the IF function.
- While specifying any text in the function, please use double quotes (" ") as we have used while writing "Passed", "Failed", "ER" etc.

# Observations

✓MS Excel automatically calculated totals, percentages, and grades.
✓The use of formulas saved time and reduced human error.
✓Students showed interest in learning Excel for academic use.
✓The recorded video will be a helpful ICT resource for future training.

# Conclusion

This practicum improved my skills in using MS Excel for educational purposes. I learned to design an automated marksheet with formulas, which can be applied in schools for efficient student evaluation. ICT tools like Smart Board, Projector, and Camcorder made the presentation interactive and reusable for future teaching.

# ACKNOWLEDGMENT

Thanks to:-

Dr. Rajib Mondal, Principal , Purnadisha J.T.T. College

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Mrs. Shweta Ghosh Moulick, Faculty , Purnadisha J.T.T. College

Mr. Priya Ranjan Das , Faculty , Purnadisha J.T.T. College

Mr. Pallab Bid, Faculty , Purnadisha J.T.T. College

# RESOURCES

1.http://www.slideshare.com
2.http://www.wikihow.com
3.http://www.clker.com
4.https://exceldatapro.com

"Thank you."