

Question-1: Actual mark calculation

```
SELECT
    es.user_id,
    e.exam_name,
    es.session_id,
    (es.total_correct_answers * e.each_ques_mark)
    - (es.total_false_answers * e.per_ques_negative_marking) AS actual_mark
FROM
    `bi-assessment-project.anything.exam_sessions` AS es
JOIN
    `bi-assessment-project.anything.exams` AS e
ON
    es.exam_id = e.exam_id;
```

Job information	Results	Chart	JSON	Execution details	Execution graph
Row	user_id	exam_name	session_id	actual_mark	
1	623ad09bfb492fa5df2dc9d4	Class 10 - Monthly MCQ Exam - ...	67c56ad455f584a4862bff7c	27.5	
2	623a4e7cfb492fa5df1515a9	Class 10 - Monthly MCQ Exam - ...	67cd98fb1ca1a4ada7cc41e5	16.25	
3	623ad09bfb492fa5df2dc9d4	Class 10 - Monthly MCQ Exam - ...	67ee631c3db3b091e19c764f	26.25	
4	623ad09bfb492fa5df2dc9d4	Class 10 - Weekly MCQ Exam - F...	67b0800e64933092bedbb048	19.0	
5	623a4e7cfb492fa5df1515a9	Class 10 - Weekly MCQ Exam - F...	67bdcde591f4ff5af1c21924	3.75	
6	623ad09bfb492fa5df2dc9d4	Class 10 - Weekly MCQ Exam - F...	67b71d1447fb3e15caedd73d	26.25	
7	623ad09bfb492fa5df2dc9d4	Class 10 - Weekly MCQ Exam - F...	67bedf9bab4fa6fb453d5d07	22.5	
8	623ad09bfb492fa5df2dc9d4	Class 10 - Weekly MCQ Exam - ...	67cc74c739f16a3bca394821	13.25	
9	623a4e7cfb492fa5df1515a9	Class 10 - Weekly MCQ Exam - ...	67cd9fef0208aa19a3ad0975	18.75	
10	623ad09bfb492fa5df2dc9d4	Class 10 - Weekly MCQ Exam - ...	67d82d0bdbda27c9426c596e	20.0	
11	623aac8dfb492fa5df282c3d	Class 10 - Weekly MCQ Exam - ...	67d6d6eadbda27c9425d0c85	22.5	
12	623ab3e3fb492fa5df295ca1	Monthly Exam 1 (MCQ)	679f6b9a3fd0b19f66c9d6f3	20.0	
13	623a42b2fb492fa5df11c4b7	Monthly Exam 1 (MCQ)	67aedbbec60cb2109946bcb9	0.0	
14	623a4e7cfb492fa5df1515a9	Monthly Exam 1 (MCQ)	679f7ff5e96e087c8b77cfd8	1.25	
15	623ad09bfb492fa5df2dc9d4	Monthly Exam 1 (MCQ)	67a23dd3fecfa4470ddcf12d	16.25	
16	623acd24fb492fa5df2d4517	Monthly Exam 1 (MCQ)	679e1a1bf35973c9132f005a	13.75	
17	623ad09bfb492fa5df2dc9d4	সাপ্তাহিক পরীক্ষা - ১	679a15fe37547cc9510ec8f2	7.5	
18	623a4e7cfb492fa5df1515a9	সাপ্তাহিক পরীক্ষা - ১	67a0c05dfecfa4470dcf6cf3	7.5	
19	623abc17fb492fa5df2aa99d	সাপ্তাহিক পরীক্ষা - ১	6794eb77ff05fd8a0857c1fe	15.0	
20	623a48d2fb492fa5df138705	সাপ্তাহিক পরীক্ষা - ১	679e19c6d73629dd27e232b8	0.0	
21	623ac604fb492fa5df2c30da	সাপ্তাহিক পরীক্ষা - ১	679665da156906a399c888072	6.25	

Question-2: Pass/Fail Classification

```
SELECT
    es.user_id AS auth_user_id,
    e.exam_name,
    (es.total_correct_answers * e.each_ques_mark)
    - (es.total_false_answers * e.per_ques_negative_marking) AS actual_mark,
    e.pass_mark,
    IF(
        (es.total_correct_answers * e.each_ques_mark)
        - (es.total_false_answers * e.per_ques_negative_marking) >= e.pass_mark,
        'Pass',
        'Fail'
    ) AS result_status
FROM
    `anything.exam_sessions` AS es
INNER JOIN
    `anything.exams` AS e
ON
    es.exam_id = e.exam_id;
```

Query results

Job information Results Chart JSON Execution details Execution graph

Row	auth_user_id ▼	exam_name ▼	actual_mark ▼	pass_mark ▼	result_status ▼
1	623ad09bfb492fa5df2dc9d4	Class 10 - Monthly MCQ Exam - ...	27.5	12	Pass
2	623a4e7cfb492fa5df1515a9	Class 10 - Monthly MCQ Exam - ...	16.25	12	Pass
3	623ad09bfb492fa5df2dc9d4	Class 10 - Monthly MCQ Exam - ...	26.25	12	Pass
4	623ad09bfb492fa5df2dc9d4	Class 10 - Weekly MCQ Exam - F...	19.0	10	Pass
5	623a4e7cfb492fa5df1515a9	Class 10 - Weekly MCQ Exam - F...	3.75	12	Fail
6	623ad09bfb492fa5df2dc9d4	Class 10 - Weekly MCQ Exam - F...	26.25	12	Pass
7	623ad09bfb492fa5df2dc9d4	Class 10 - Weekly MCQ Exam - F...	22.5	10	Pass
8	623ad09bfb492fa5df2dc9d4	Class 10 - Weekly MCQ Exam - ...	13.25	10	Pass
9	623a4e7cfb492fa5df1515a9	Class 10 - Weekly MCQ Exam - ...	18.75	10	Pass
10	623ad09bfb492fa5df2dc9d4	Class 10 - Weekly MCQ Exam - ...	20.0	10	Pass
11	623aac8dfb492fa5df282c3d	Class 10 - Weekly MCQ Exam - ...	22.5	10	Pass
12	623ab3e3fb492fa5df295ca1	Monthly Exam 1 (MCQ)	20.0	12	Pass
13	623a42b2fb492fa5df11c4b7	Monthly Exam 1 (MCQ)	0.0	12	Fail
14	623a4e7cfb492fa5df1515a9	Monthly Exam 1 (MCQ)	1.25	12	Fail
15	623ad09bfb492fa5df2dc9d4	Monthly Exam 1 (MCQ)	16.25	12	Pass
16	623acd24fb492fa5df2d4517	Monthly Exam 1 (MCQ)	13.75	12	Pass
17	623ad09bfb492fa5df2dc9d4	সাপ্তাহিক পরীক্ষা - ১	7.5	8	Fail
18	623a4e7cfb492fa5df1515a9	সাপ্তাহিক পরীক্ষা - ১	7.5	8	Fail
19	623abc17fb492fa5df2aa99d	সাপ্তাহিক পরীক্ষা - ১	15.0	8	Pass
20	623a48d2fb492fa5df138705	সাপ্তাহিক পরীক্ষা - ১	0.0	8	Fail
21	623ac604fb492fa5df2c30de	সাপ্তাহিক পরীক্ষা - ১	6.25	8	Fail

Question-3: Top Performers

```
WITH marks_calculated AS (  
  SELECT  
    es.user_id AS auth_user_id,  
    e.exam_name,  
    (es.total_correct_answers * e.each_ques_mark)  
      - (es.total_false_answers * e.per_ques_negative_marking) AS actual_mark  
  FROM  
    `bi-assessment-project.anything.exam_sessions` AS es  
  JOIN  
    `bi-assessment-project.anything.exams` AS e  
  ON  
    es.exam_id = e.exam_id  
)
```

Rank students per exam based on their actual marks

```
ranked_students AS (SELECT  
  exam_name,auth_user_id,actual_mark,  
  RANK() OVER (PARTITION BY exam_name ORDER BY actual_mark DESC) AS rank  
FROM marks_calculated)
```

Return top 5 students per exam

```
SELECT exam_name,auth_user_id, actual_mark,rank  
FROM ranked_students  
WHERE rank <= 5  
ORDER BY exam_name,rank;
```

Query results

Job information		Results	Chart	JSON	Execution details	Execution graph
Row	auth_user_id ▼	exam_name ▼	actual_mark ▼	rank ▼		
1	623ad1befb492fa5df2df54d	Class 10 - Weekly MCQ Exam - F...	25.0	1		
2	623ad09bfb492fa5df2dc9d4	Class 10 - Weekly MCQ Exam - F...	23.75	2		
3	623a7385fb492fa5df1dc1c8	Class 10 - Weekly MCQ Exam - F...	23.75	2		
4	623ad09bfb492fa5df2dc9d4	Class 10 - Weekly MCQ Exam - F...	22.5	4		
5	623acd24fb492fa5df2d4517	Class 10 - Weekly MCQ Exam - F...	22.5	4		
6	623aada9fb492fa5df285b20	Class 10 - Weekly MCQ Exam - F...	22.5	4		
7	623ab51afb492fa5df298ed5	Class 10 - Weekly MCQ Exam - F...	22.5	4		
8	623aa09afb492fa5df262d0e	Class 10 - Weekly MCQ Exam - ...	15.0	1		
9	623a7385fb492fa5df1dc1c8	Class 10 - Weekly MCQ Exam - ...	15.0	1		
10	623ac942fb492fa5df2caf3e	Class 10 - Weekly MCQ Exam - ...	15.0	1		
11	623ab493fb492fa5df2978dc	Class 10 - Weekly MCQ Exam - ...	15.0	1		
12	623ab2d8fb492fa5df2931b1	Class 10 - Weekly MCQ Exam - ...	15.0	1		
13	623a3c81fb492fa5df0fe0dd	Class 10 - Weekly MCQ Exam - ...	15.0	1		
14	623a318cfb492fa5df0c2456	Class 10 - Weekly MCQ Exam - ...	15.0	1		
15	623aa54ffb492fa5df26f883	Class 10 - Weekly MCQ Exam - ...	15.0	1		
16	623a318efb492fa5df0c24df	Class 10 - Weekly MCQ Exam - ...	15.0	1		
17	623a4d1afb492fa5df14b55d	Class 10 - Weekly MCQ Exam - ...	15.0	1		
18	623aa068fb492fa5df26247d	Class 10 - Weekly MCQ Exam - ...	15.0	1		
19	623a4e17fb492fa5df14fa5b	সাপ্তাহিক পরীক্ষা - ১	20.0	1		
20	623a4aadb492fa5df140b79	সাপ্তাহিক পরীক্ষা - ১	20.0	1		
21	623a318efb492fa5df0c24df	সাপ্তাহিক পরীক্ষা - ১	20.0	1		

Question- 4: Performance Trend per Student Across Exams

```
WITH marks AS (  
  SELECT  
    es.user_id AS auth_user_id,  
    e.exam_name,  
    es.user_exam_starts_at,  
    (es.total_correct_answers * e.each_ques_mark)  
      - (es.total_false_answers * e.per_ques_negative_marking) AS actual_mark  
  FROM  
    `bi-assessment-project.anything.exam_sessions` AS es  
  JOIN  
    `bi-assessment-project.anything.exams` AS e  
  ON  
    es.exam_id = e.exam_id  
)  
  
SELECT  
  auth_user_id,  
  exam_name,  
  user_exam_starts_at,  
  actual_mark,  
  LAG(actual_mark) OVER (  
    PARTITION BY auth_user_id  
    ORDER BY user_exam_starts_at  
  ) AS previous_actual_mark,  
  CASE  
    WHEN LAG(actual_mark) OVER (PARTITION BY auth_user_id ORDER BY user_exam_starts_at) IS NULL  
  THEN NULL  
    WHEN actual_mark > LAG(actual_mark) OVER (PARTITION BY auth_user_id ORDER BY  
user_exam_starts_at) THEN 'Improved'  
    WHEN actual_mark < LAG(actual_mark) OVER (PARTITION BY auth_user_id ORDER BY  
user_exam_starts_at) THEN 'Declined'  
    ELSE 'Same'  
  END AS performance_trend  
FROM  
  marks  
ORDER BY  
  auth_user_id,  
  user_exam_starts_at;
```

Query results

Job information Results Chart JSON Execution details Execution graph							
Row	auth_user_id ▼	exam_name ▼	user_exam_starts_at ▼	actual_mark ▼	previous_actual_...	performance_trend ▼	
1	623a46d7fb492fa5df12fa61	Class 10 - Weekly MCQ Exam - F...	2025-02-27 06:48:48.105000 UTC	1.25	null	null	
2	623a46d7fb492fa5df12fa61	Class 10 - Monthly MCQ Exam - ...	2025-03-01 12:49:02.774000 UTC	25.0	1.25	improved	
3	623a46d7fb492fa5df12fa61	Class 10 - Weekly MCQ Exam - ...	2025-03-15 12:45:28.319000 UTC	18.75	25.0	declained	
4	623a46d7fb492fa5df12fa61	Class 10 - Monthly MCQ Exam - ...	2025-03-22 13:29:14.017000 UTC	18.75	18.75	Same	
5	623a46d7fb492fa5df12fa61	Class 10 - Weekly MCQ Exam - ...	2025-04-12 12:48:36.377000 UTC	23.75	18.75	improved	
6	623a46d7fb492fa5df12fa61	Class 10 - Weekly MCQ Exam - ...	2025-04-19 15:52:43.297000 UTC	6.25	23.75	declained	
7	623a46d7fb492fa5df12fa61	Class 10 - Weekly MCQ Exam - ...	2025-04-26 13:15:47.949000 UTC	6.25	6.25	Same	
8	623a4e50fb492fa5df1509dc	সাপ্তাহিক পরীক্ষা - ১	2025-01-25 12:36:11.902000 UTC	15.0	null	null	
9	623a4e50fb492fa5df1509dc	সাপ্তাহিক পরীক্ষা - ১	2025-01-30 02:30:37.262000 UTC	16.25	15.0	improved	
10	623a4e50fb492fa5df1509dc	Monthly Exam 1 (MCQ)	2025-02-01 12:38:56.899000 UTC	22.5	16.25	improved	
11	623a4e50fb492fa5df1509dc	Monthly Exam 1 (MCQ)	2025-02-04 14:11:06.314000 UTC	23.75	22.5	improved	
12	623a4e50fb492fa5df1509dc	Class 10 - Weekly MCQ Exam - F...	2025-02-08 14:32:56.910000 UTC	16.25	23.75	declained	
13	623a4e50fb492fa5df1509dc	Class 10 - Weekly MCQ Exam - F...	2025-02-15 13:01:03.454000 UTC	26.25	16.25	improved	
14	623a4e50fb492fa5df1509dc	Class 10 - Weekly MCQ Exam - F...	2025-02-22 13:00:14.623000 UTC	13.0	26.25	declained	
15	623a4e50fb492fa5df1509dc	Class 10 - Monthly MCQ Exam - ...	2025-03-01 12:45:55.955000 UTC	26.25	13.0	improved	
16	623a4e50fb492fa5df1509dc	Class 10 - Weekly MCQ Exam - ...	2025-03-08 15:15:09.712000 UTC	22.5	26.25	declained	
17	623a4e50fb492fa5df1509dc	Class 10 - Weekly MCQ Exam - ...	2025-03-15 12:57:04.159000 UTC	22.5	22.5	Same	
18	623a4e50fb492fa5df1509dc	Class 10 - Monthly MCQ Exam - ...	2025-03-22 13:24:35.765000 UTC	26.25	22.5	improved	
19	623a4e50fb492fa5df1509dc	Class 10 - Weekly MCQ Exam - ...	2025-04-14 17:26:02.034000 UTC	9.5	26.25	declained	
20	623a4e50fb492fa5df1509dc	Class 10 - Weekly MCQ Exam - ...	2025-04-19 15:53:16.818000 UTC	0.0	9.5	declained	
21	623a44c3fb492fa5df126066	সাপ্তাহিক পরীক্ষা - ১	2025-01-27 03:58:05.908000 UTC	7.5	null	null	

- **To see from BigQuery:**

Link: <https://console.cloud.google.com/bigquery?project=bi-assessment-project&ws=!1m0>