**Exercise 2: (SamaHub API's)**

Please review the SamaHubs [API documentation](https://docs.samasource.com/reference) and answer the following question:

1. A customer is looking to query all tasks in a given task state. Is it possible to query multiple tasks in a given task state?

Answer: Yes, Multiple tasks can be queried in a batch in the same task state. It can be obtained from endpoint named get the status of a batch creation job. This endpoint will return the number of batches of task present for a specified state. The response contains:

* The status of the batch task creation job
* A list of tasks that have not been created yet along with the corresponding task data if the task creation failed
* A count of tasks that have been successfully created
* A list of messages that have been logged while the tasks were being created

The task information for successfully created tasks is not returned by this endpoint and instead should be retrieved by making a request using the same batchId as the query parameter batch\_id to the [GET status of multiple tasks](https://docs.samasource.com/reference#multitaskstatus) endpoint. The [GET status of a single task](https://docs.samasource.com/reference#singletaskstatus) endpoint can be used to retrieve the status of a single created task.

b) A new request from the customer came in, asking to add a new API capability - a field called timestamp.

1. Which of the API calls might this field be relevant to?

## Answer: The endpoint ‘Get tasks delivered since last call to this endpoint’ might be relevant to this field.

Gets all tasks that were delivered for project with mentioned projectId since the last call to this endpoint, ordered by delivery date. An optional limit parameter (max. 1000, default value 1000) limits how many tasks are returned in a single response.

2. What questions would you ask the customer regarding this request?

Answer: I would ask the customers about the time zones, minimum values to be populated because the default is 1000 and also what all Time zones needed to be considered for the end point.

3. How would you make a case for that feature internally?

Answer: The new feature is adding a new API capability – timestamp. For this I would create a new task which would be in the ‘new’ state and it will change accordingly in future.

1. First I will define the task.
2. After this I will discuss with my project manager a task creation workflow best suited.
3. The task is created using the task creation endpoint with background processing.
4. After all we design, create and publish API we will check with whom and where it needs to be shared.
5. The body consisting task encoded in JSON. Check on the schema of the data whether is matches the previously created project schema.
6. I would look at the kinds of calls and requests that can be made using that field and also how to make them.
7. Suggested data formats that needs to be used and would look at the conventions that needs to follow.
8. Any default value that needs to be populated.

**Exercise 3: Consider the following Samasource project:**

* 50,000 production tasks to be completed by Samasource agents
* Effort is 5 min per task
* Our internal hourly cost per agent is: $5.25/hour
* Assume 7 project manager hours per week at an internal cost of $45/hour
* Based on experience on this type of task, 10 business days of training will be required for the agents. This means 2 weeks of the timeline are dedicated exclusively to training and we won't be working on production tasks.
* Client wants to get project done in 16 weeks
* No work on weekends § Assume we bill for 8 hours in a day but that we're only producing output (productive hours) for 7 hours in a day
* How many agents must be staffed to complete this project?
* What is the total internal cost of the project excluding Project Management?
* What is the total internal cost including Project Management?
* What would be the hourly billing rate we charge to the customer, per agent hour, if we want to be at 35% margin?
* What would be the per task cost to the customer at 35% margin?
* Answer questions 1 - 5 above assuming the timeline is 2 months instead of 4
* Please be prepared to present your analysis and share your calculations above.

Solution:

Given:

Number of tasks= 50,000

Effort = 5 mins / task

Total number of efforts = 5\* 50,000 = 2,50,000 mins

Internal hourly cost = $5.25

Number of project managers = 7

Internal cost = $45/ hour

Training days for agents = 10 (2 weeks)

Timeline for training = 2 weeks

Production timeline/ Total time = 16 weeks

= 16\*5 = 80 days

Total hours = 8 \* 80 = 640 hrs.

Hrs. for training = 10 \* 8 = 80 hrs.

Remaining time for production

8\*5\*14 = 70 \* 8 = 560 hrs.

Production hrs. = 7 \* 70(14\*5) = 490 hrs.

* + 490\*60
  + 29400 mins
* Question 1: How many agents must be staffed to complete this project?
  + 250000/ 29400 = 9 Agents
* What is the total internal cost of the project excluding Project Management?
  + 640\*9\*5.25
  + $30,240(training included)
  + 560\*9\*5.25
  + $26,460 (training excluded)

1 week PM hrs = 7

1 week cost = 7\*45 = $315

* What is the total internal cost including Project Management?
  + (315\*16) + 30240
  + 5040 +30240
  + $35280
* What would be the hourly billing rate we charge to the customer, per agent hour, if we want to be at 35% margin?
  + 35/100 \* 5.25
  + 1.8375
  + Total = 5.25+1.8375 = $7.0875 \agent hr
* What would be the per task cost to the customer at 35% margin?
  + 35280 \* 1.35/ 50000 = $ 0.95256

**Calculating by assuming the timeline to be 2 months instead of 4 months**

Total time = 8 weeks = 8\*5 = 40 days

Total hours = 8\*40 = 320 hrs.

Hrs. for training = 10(days) \* 8 = 80 hrs.

Remaining time for production = 320-80 = 240 hrs.

Productive hrs. = 6\*7\*5 = 1260 mins

* Question 1: How many agents must be staffed to complete this project?
  + 250000/ 12600 = 19.8 = 20 Agents
* What is the total internal cost of the project excluding Project Management?
  + 320\*20\*5.25
  + $33600(training included)

Now,

1 week PM hrs = 7

1 week cost = 7\*45 = $315

* What is the total internal cost including Project Management?
  + (315\*8) + 33600
  + $36120
* What would be the hourly billing rate we charge to the customer, per agent hour, if we want to be at 35% margin?
  + 35/100 \* 5.25
  + 1.8375
  + Total = 5.25+1.8375 = $7.0875 \agent hr
* What would be the per task cost to the customer at 35% margin?
  + 36120 \* 1.35/ 50000 = $ 0.97524