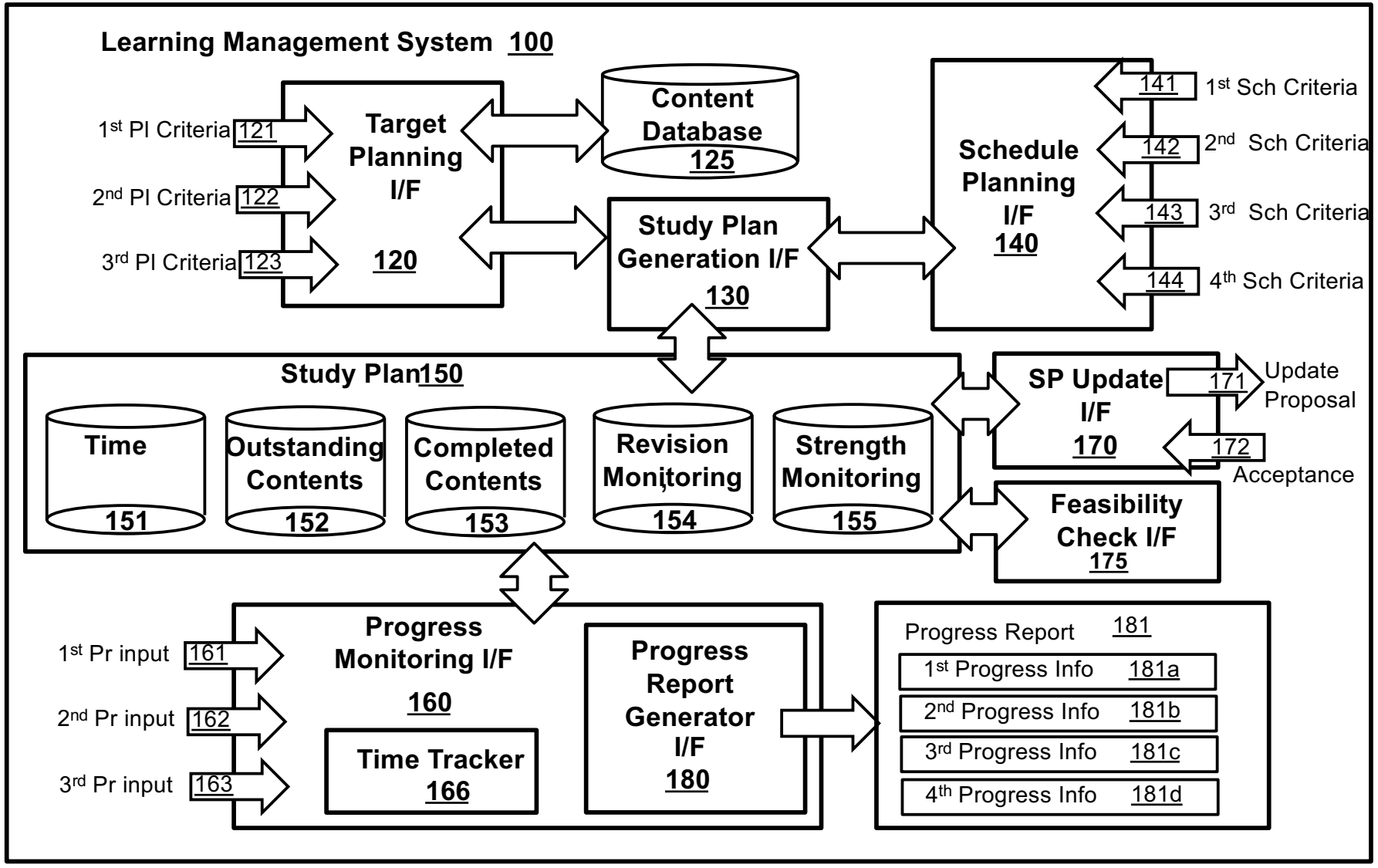
Learning Management System 100
1st PI Criteria 121
2nd PI Criteria 122
3rd PI Criteria 123
Target Planning I/F 120
Content Database 125
Study Plan Generation I/F 130
Schedule Planning I/F 140
141 1st Sch Criteria
142 2nd Sch Criteria
143 3rd Sch Criteria
144 4th Sch Criteria
Study Plan 150
Time 151
Outstanding Contents 152
Completed Contents 153
Revision Monitoring 154
Strength Monitoring 155
SP Update I/F 170
171 Update Proposal
172 Acceptance
Feasibility Check I/F 175
1st Pr input 161
2nd Pr input 162
3rd Pr input 163
Progress Monitoring I/F 160
Time Tracker 166
Progress Report Generator I/F 180
Progress Report 181
1st Progress Info 181a
2nd Progress Info 181b
3rd Progress Info 181c
4th Progress Info 181d

FIG. 1

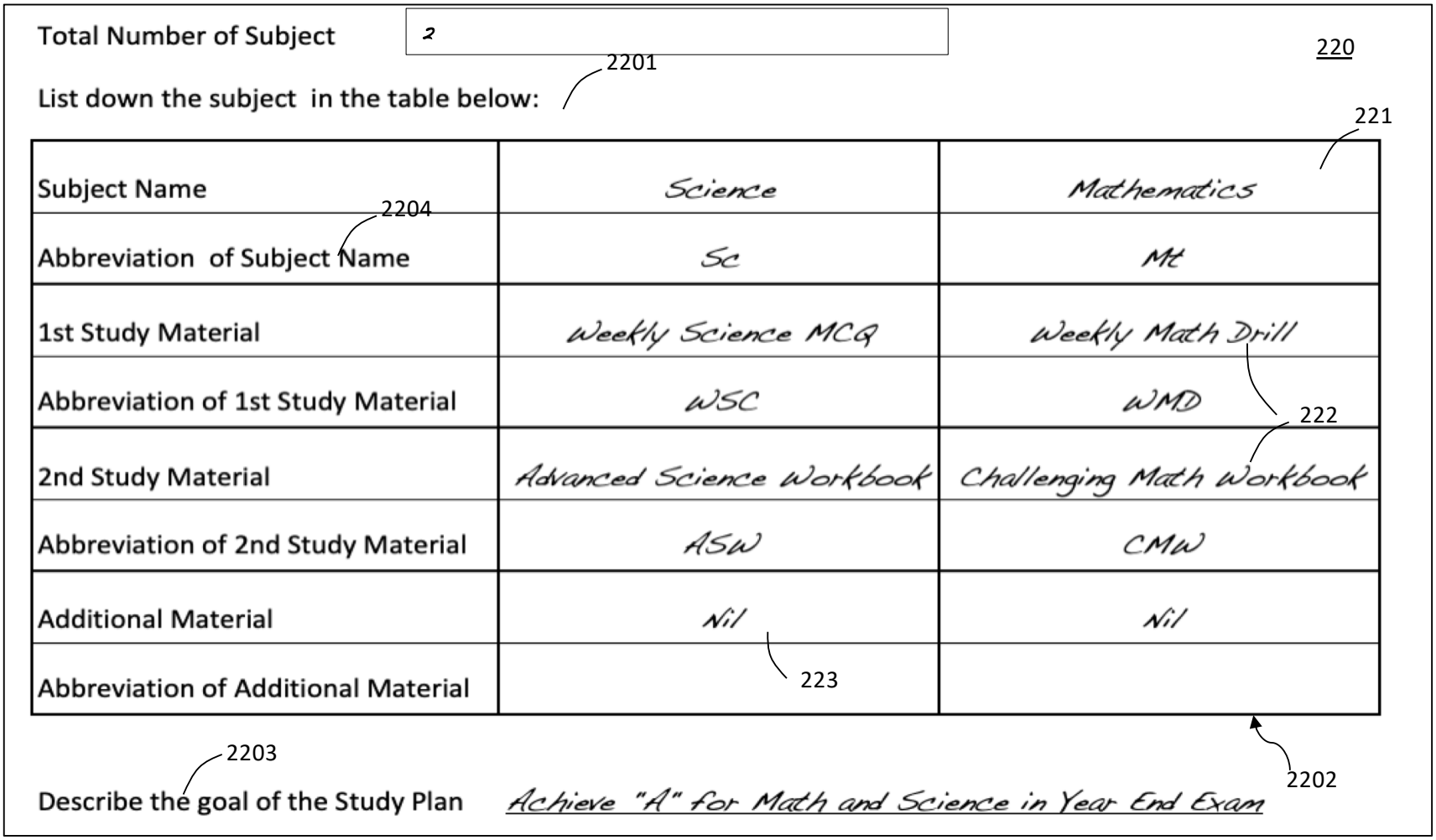
Total Number of Subject
2
220
2201
List down the subject in the table below:
221
Subject Name
Science
Mathematics
2204
Abbreviation of Subject Name
Sc
Mt
1st Study Material
Weekly Science MCQ
Weekly Math Drill
Abbreviation of 1st Study Material
WSC
WMD
222
2nd Study Material
Advanced Science Workbook
Challenging Math Workbook
Abbreviation of 2nd Study Material
ASW
CMW
Additional Material
Nil
Nil
Abbreviation of Additional Material
223
2203
2202
Describe the goal of the Study Plan
Achieve "A" for Math and Science in Year End Exam

FIG. 2A

Level	Subject	Name	Abbreviation	Overall Popularity	Use percentage by Top 10%*	Use % by students with similar background*	Estimated Hours Needed
Primary 6	Science	Weekly Science MCQ	WSC	20%	90%	20%	30
Primary 6	Science	Advanced Science Workbook	ASW	30%	60%	20%	50
Primary 6	Science	Comprehensive Science	CS	50%	5%	40%	35
Primary 6	Science	Complete Science Strategy	CSS	46%	3%	50%	38
...	...	...	...	...	...	...	...

Select/Filter percentage criteria*							
top	*Yes*	bottom		middle		Percentage:	*10*
Similar Background Criteria**							
Country	*Yes*	State	*Yes*	School Type	*Yes*	Age	*Yes*
Strength:	*Similar*	Show %	*No*	Interest	*No*	Ambition	*No*

FIG. 2B

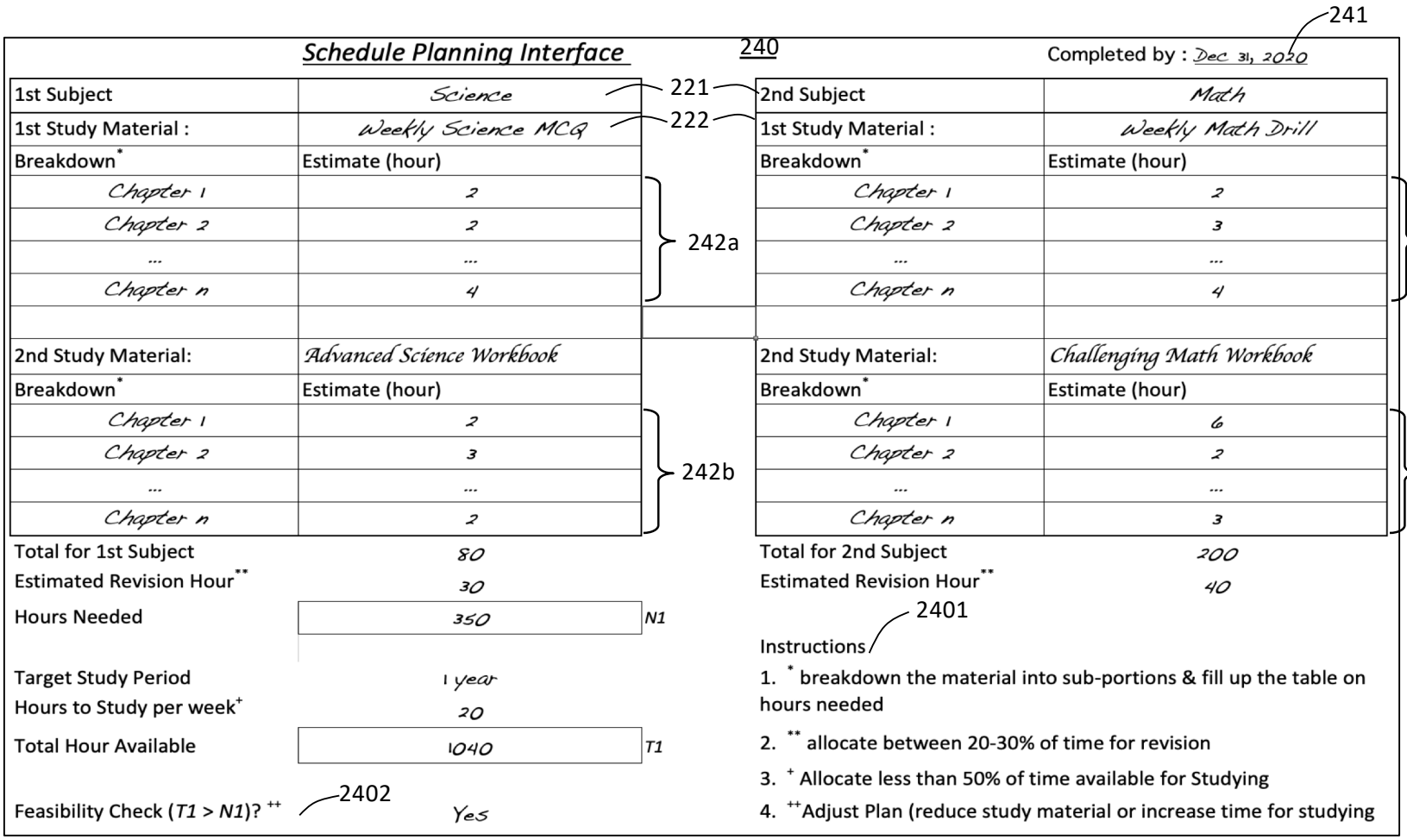
Schedule Planning Interface
240
241
Completed by : Dec 31, 2020
1st Subject
Science
221
2nd Subject
Math
1st Study Material :
Weekly Science MCQ
222
1st Study Material :
Weekly Math Drill
Breakdown*
Estimate (hour)
Breakdown*
Estimate (hour)
Chapter 1
2
Chapter 1
2
Chapter 2
2
Chapter 2
3
...
...
...
...
Chapter n
4
Chapter n
4
242a
242c
2nd Study Material:
Advanced Science Workbook
2nd Study Material:
Challenging Math Workbook
Breakdown*
Estimate (hour)
Breakdown*
Estimate (hour)
Chapter 1
2
Chapter 1
6
Chapter 2
3
Chapter 2
2
...
...
...
...
Chapter n
2
Chapter n
3
242b
242d
Total for 1st Subject
80
Total for 2nd Subject
200
Estimated Revision Hour**
30
Estimated Revision Hour**
40
Hours Needed
350
N1
2401
Instructions
Target Study Period
1 year
Hours to Study per week+
20
Total Hour Available
1040
T1
1. * breakdown the material into sub-portions & fill up the table on hours needed
2. ** allocate between 20-30% of time for revision
3. + Allocate less than 50% of time available for Studying
4. ++Adjust Plan (reduce study material or increase time for studying
Feasibility Check (T1 > N1)? ++
2402
Yes

FIG. 2C

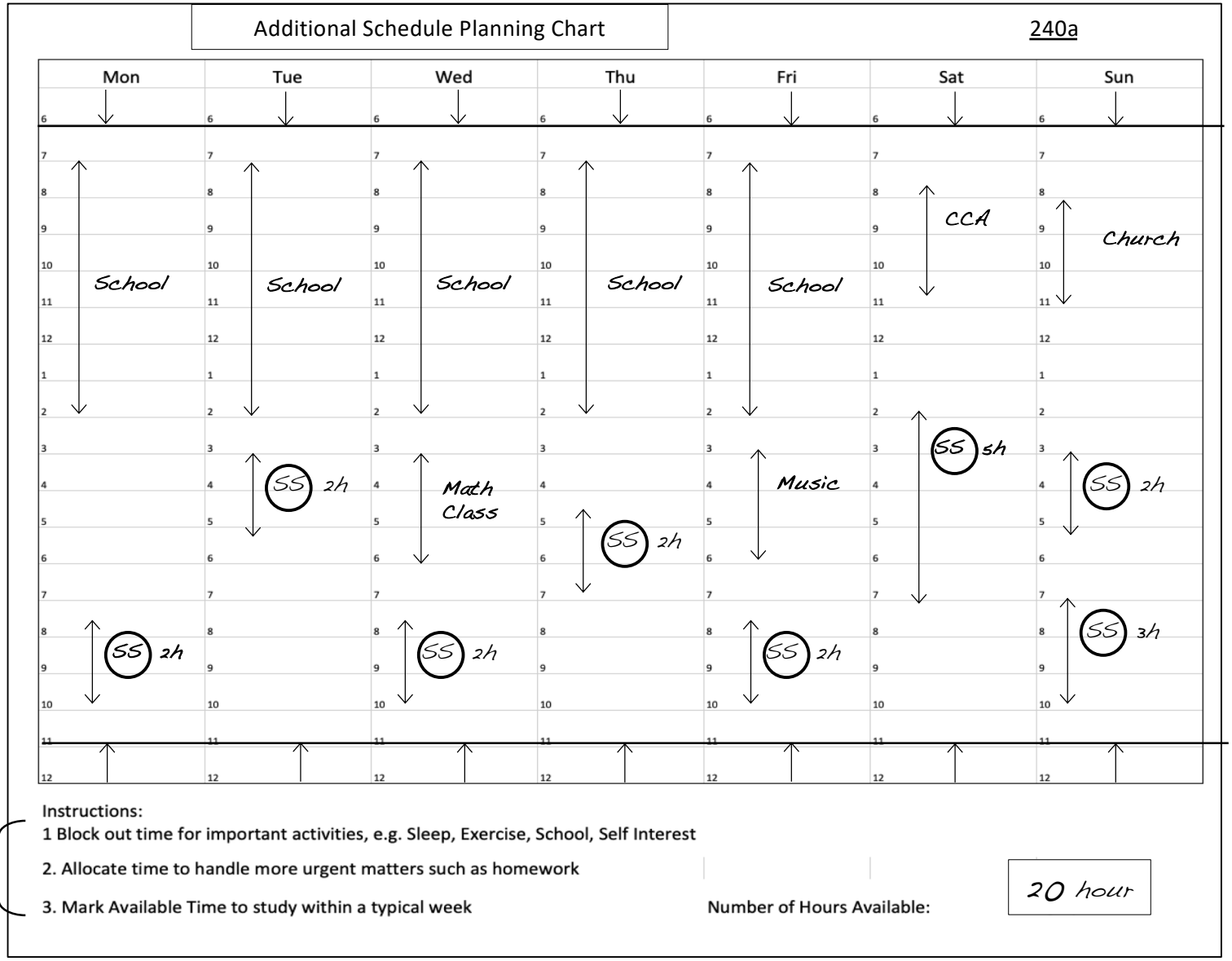
Additional Schedule Planning Chart
240a
Mon
Tue
Wed
Thu
Fri
Sat
Sun
School
School
School
School
School
CCA
Church
SS 2h
Math Class
SS 2h
Music
SS 5h
SS 2h
SS 2h
SS 2h
SS 2h
SS 3h
Instructions:
1 Block out time for important activities, e.g. Sleep, Exercise, School, Self Interest
2. Allocate time to handle more urgent matters such as homework
3. Mark Available Time to study within a typical week
Number of Hours Available:
20 hour
2403

FIG. 2D

1st Subject	Science
1st Study Material :	Weekly Science MCQ
Breakdown*	Estimate (hour)
~~Chapter 1~~	2
~~Chapter 2~~	2
~~Chapter 3~~	2
~~Chapter 4~~	2
~~Chapter 5~~	2
Chapter 6	2
Chapter 7	2
Chapter 8	2
Chapter 9	2
Chapter 10	2

1st Subject	Science
2nd Study Material:	Advanced Science Workbook
Breakdown*	Estimate (hour)
~~Chapter 1~~	2
~~Chapter 2~~	2
~~Chapter 3~~	2
~~Chapter 4~~	2
~~Chapter 5~~	2
~~Chapter 6~~	2
~~Chapter 7~~	1
~~Chapter 8~~	1
Chapter 9	2
Chapter 10	4

260

Instruction: Strike out when a chapter is completed 2601

FIG. 2E

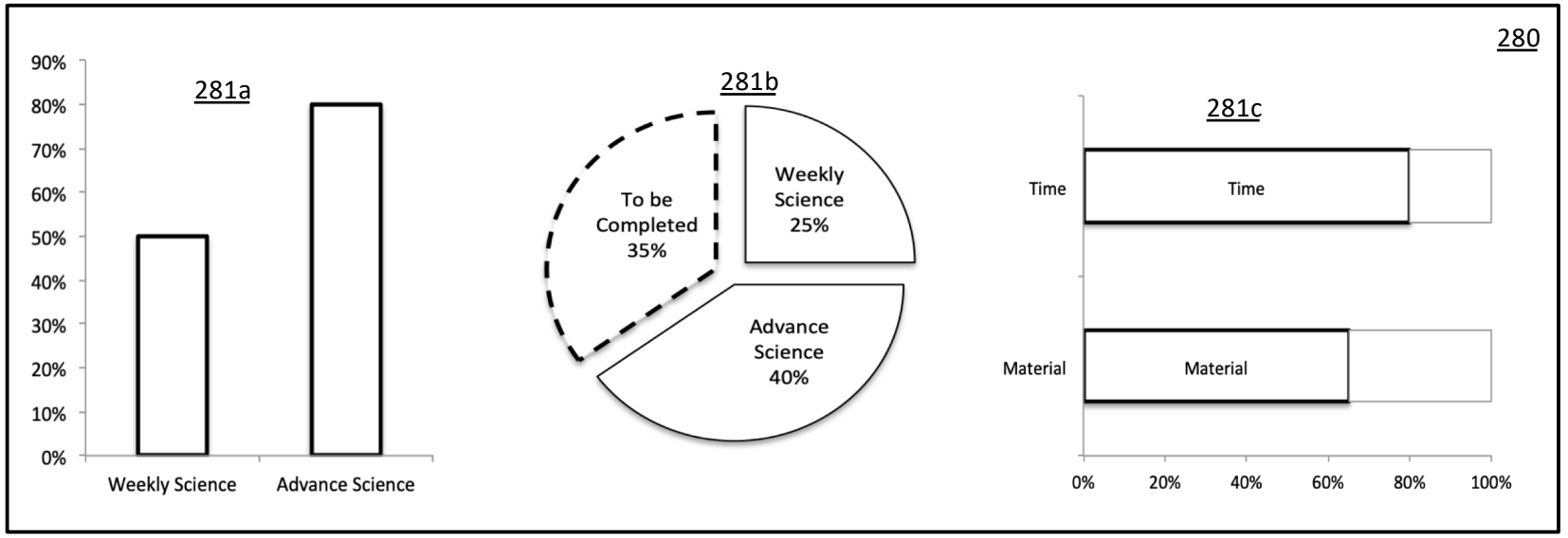

FIG. 2F

Progress Monitoring Interface - Monthly Chart

Goal: *Achieve "A" for Math and Science in PSLE*

260A

Mon	Tue	Wed	Thu	Fri	Sat	Sun	Module Completed
Plan	Plan	Plan Mt-WMD Sc-WSC	Plan Mt-WMD (R)	Plan Music	Plan CCA Sc-WSC (R)	Plan	
Goal :	Goal :	Goal :	Goal :	Goal :	Goal :	Goal :	
Plan Mt-CMW	Plan Mt-WMD	Plan Mt-CMW	Plan Mt-WMD Sc-WSC (R)	Plan Music	Plan CCA	Plan Mt-CMW (R)	
Goal :	Goal :	Goal :	Goal :	Goal :	Goal :	Goal :	
Plan Sc-ASW	Plan Mt-CMW	Plan Mt-WMD	Plan Sc-WSC	Plan Music	Plan CCA Mt-WMD	Plan Sc-WSC	
Goal :	Goal :	Goal :	Goal :	Goal :	Goal :	Goal :	
Plan	Plan	Plan	Plan	Plan Music	Plan CCA	Plan	
Goal :	Goal :	Goal :	Goal :	Goal :	Goal :	Goal :	
Plan Mt-WMD	Plan	Plan	Plan	Plan Music	Plan	Plan	
Goal :	Goal :	Goal :	Goal :	Goal :	Goal :	Goal :	

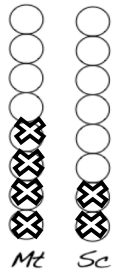

FIG. 2G

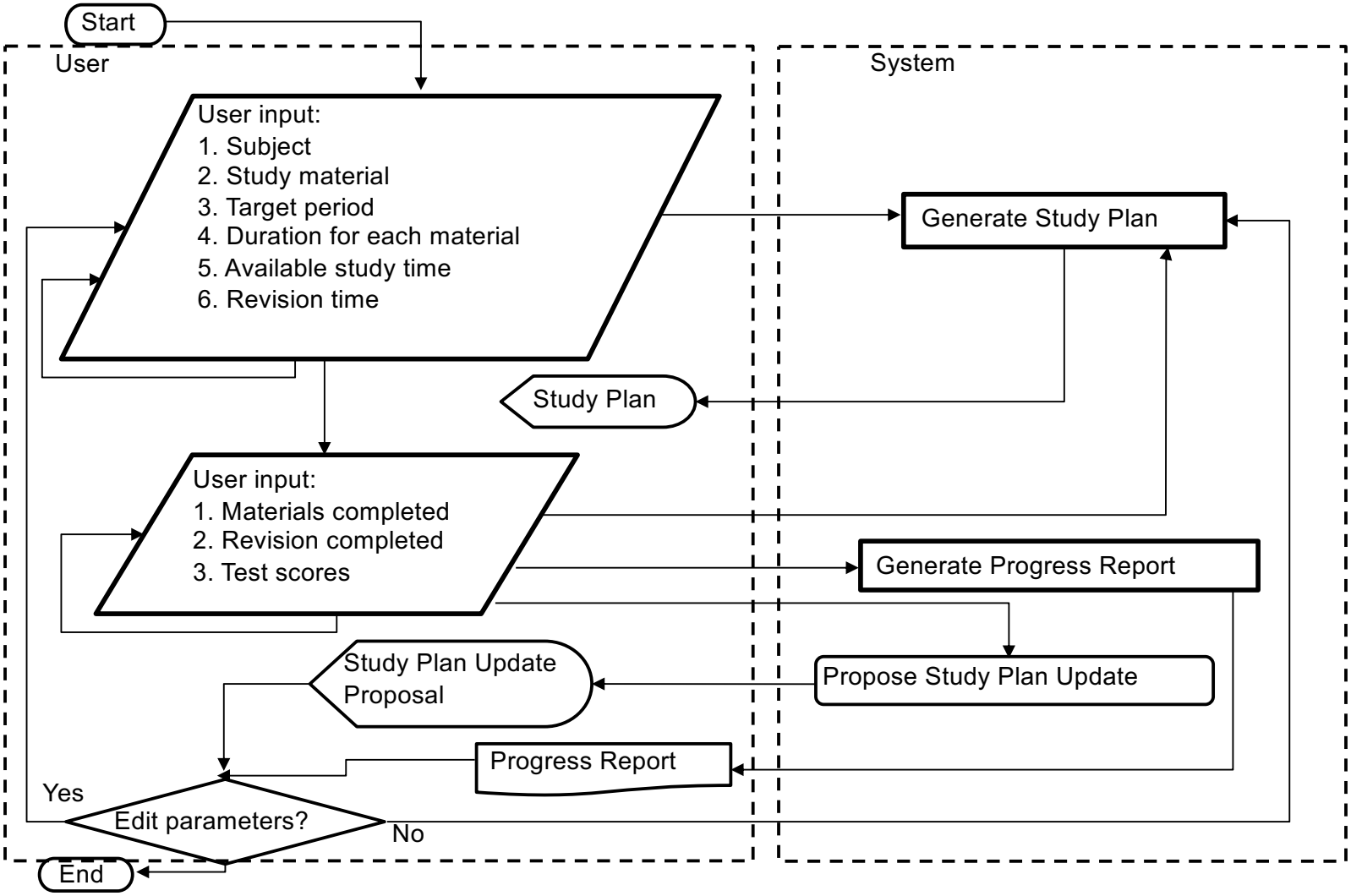
Start
User
System
User input:
1. Subject
2. Study material
3. Target period
4. Duration for each material
5. Available study time
6. Revision time
Generate Study Plan
Study Plan
User input:
1. Materials completed
2. Revision completed
3. Test scores
Generate Progress Report
Study Plan Update Proposal
Propose Study Plan Update
Progress Report
Yes
Edit parameters?
No
End

FIG. 3A

System – First Time Parameters Setting and Generating Study Plan

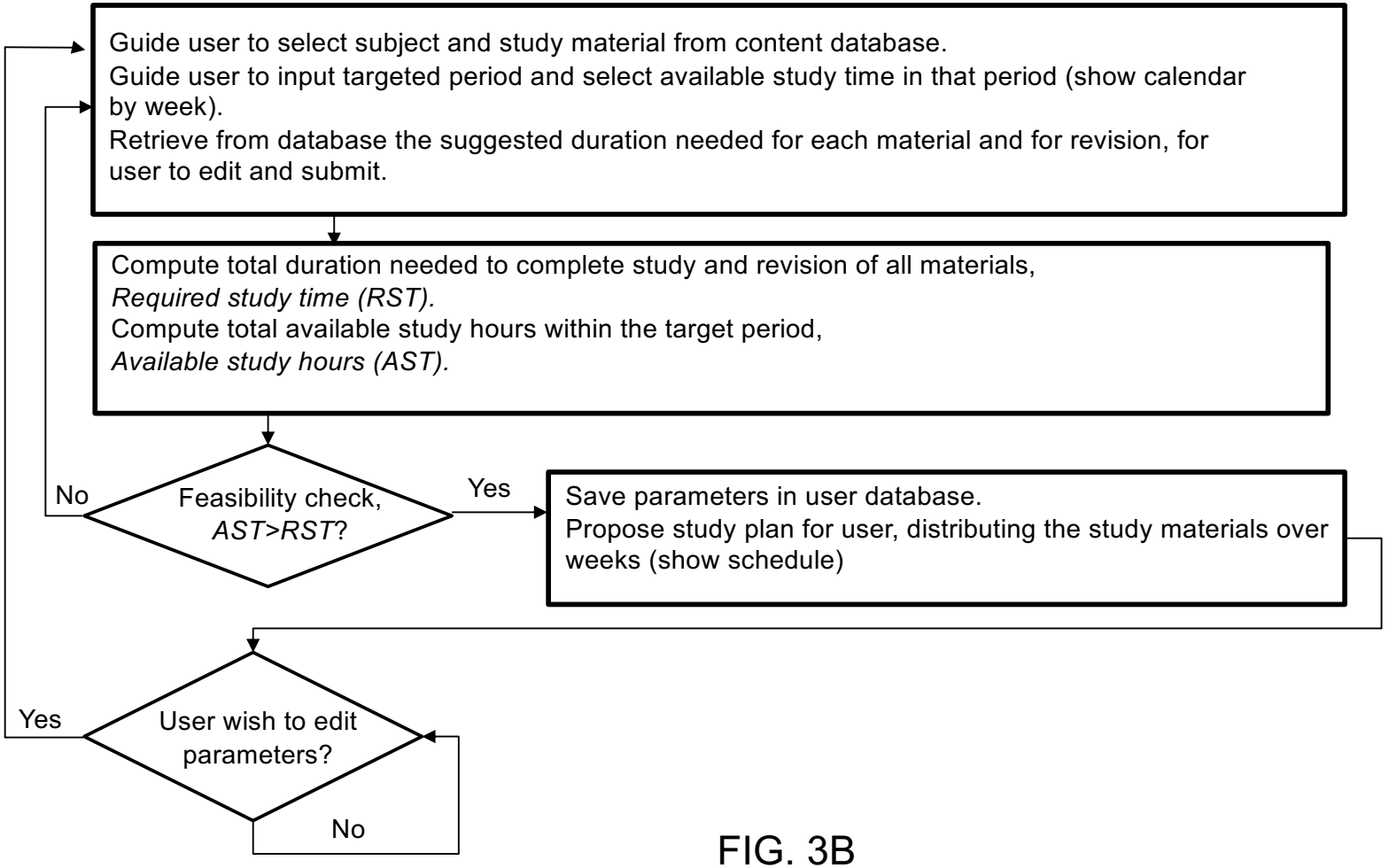

FIG. 3B

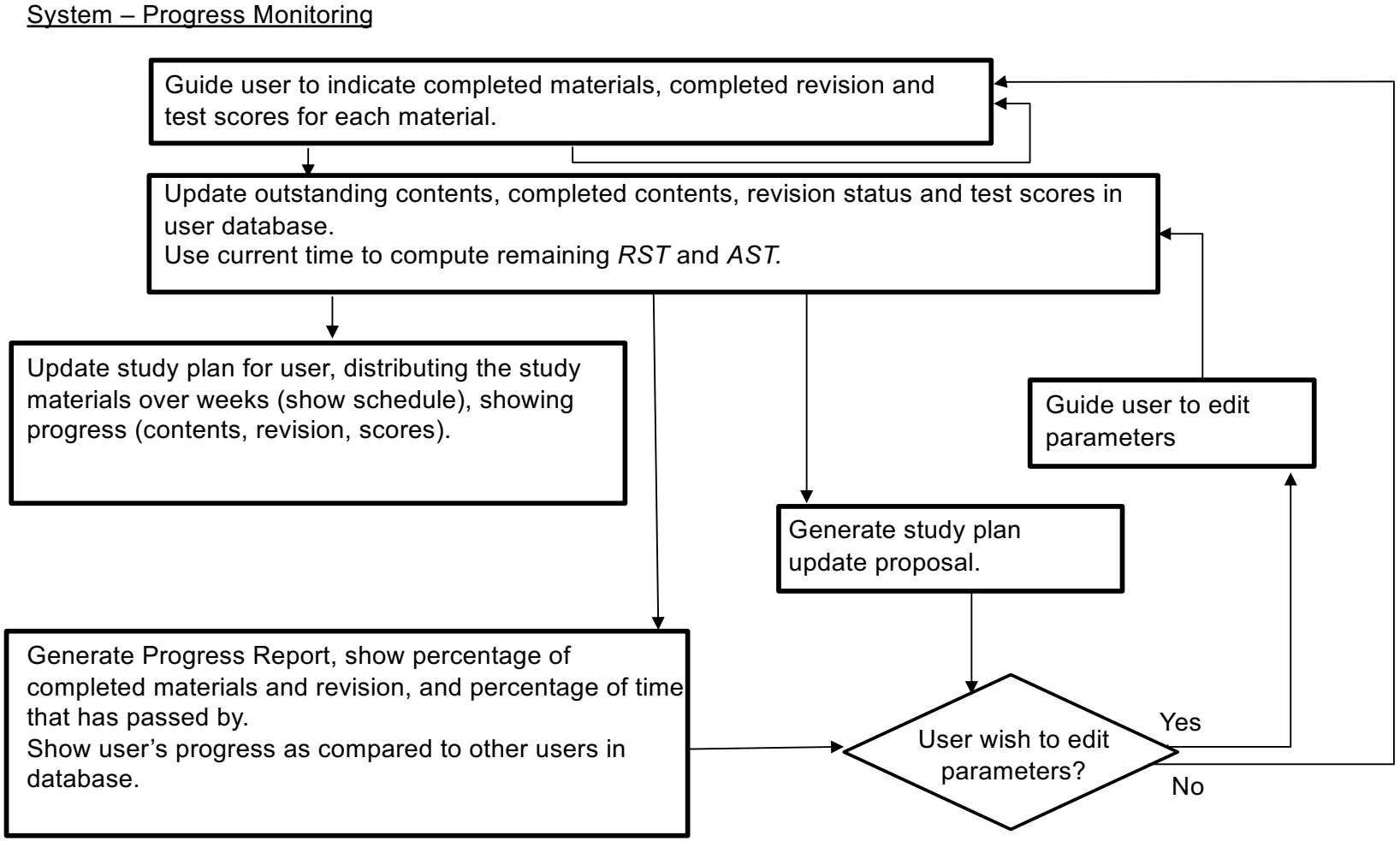
System – Progress Monitoring
Guide user to indicate completed materials, completed revision and test scores for each material.
Update outstanding contents, completed contents, revision status and test scores in user database.
Use current time to compute remaining *RST* and *AST.*
Update study plan for user, distributing the study materials over weeks (show schedule), showing progress (contents, revision, scores).
Guide user to edit parameters
Generate study plan update proposal.
Generate Progress Report, show percentage of completed materials and revision, and percentage of time that has passed by.
Show user's progress as compared to other users in database.
User wish to edit parameters?
Yes
No

FIG. 3C

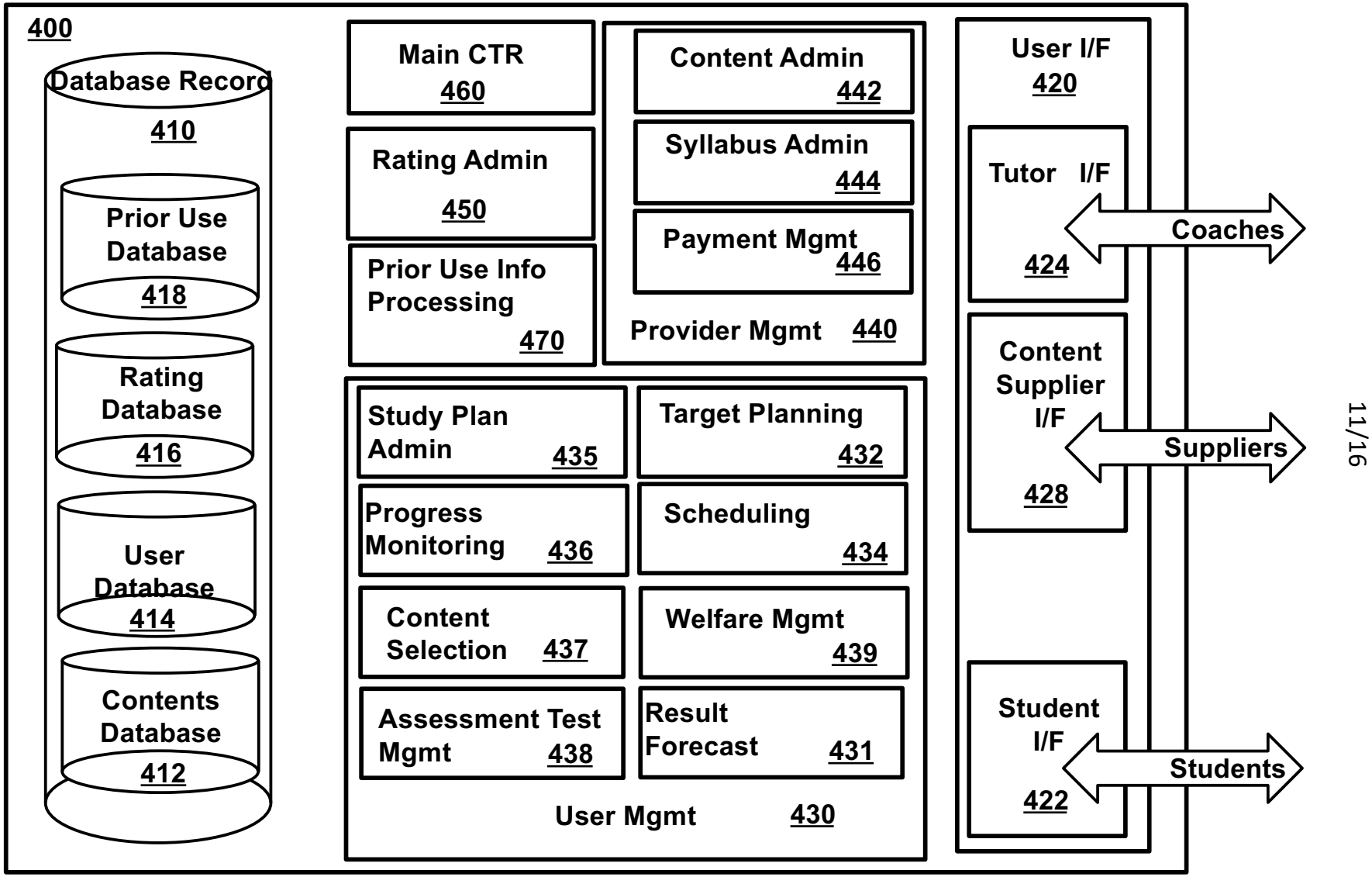
400
Database Record
410
Prior Use Database
418
Rating Database
416
User Database
414
Contents Database
412
Main CTR
460
Rating Admin
450
Prior Use Info Processing
470
Content Admin
442
Syllabus Admin
444
Payment Mgmt
446
Provider Mgmt 440
Study Plan Admin 435
Target Planning
432
Progress Monitoring 436
Scheduling
434
Content Selection 437
Welfare Mgmt
439
Assessment Test Mgmt 438
Result Forecast 431
User Mgmt 430
User I/F
420
Tutor I/F
424
Coaches
Content Supplier I/F
428
Suppliers
Student I/F
422
Students

FIG. 4

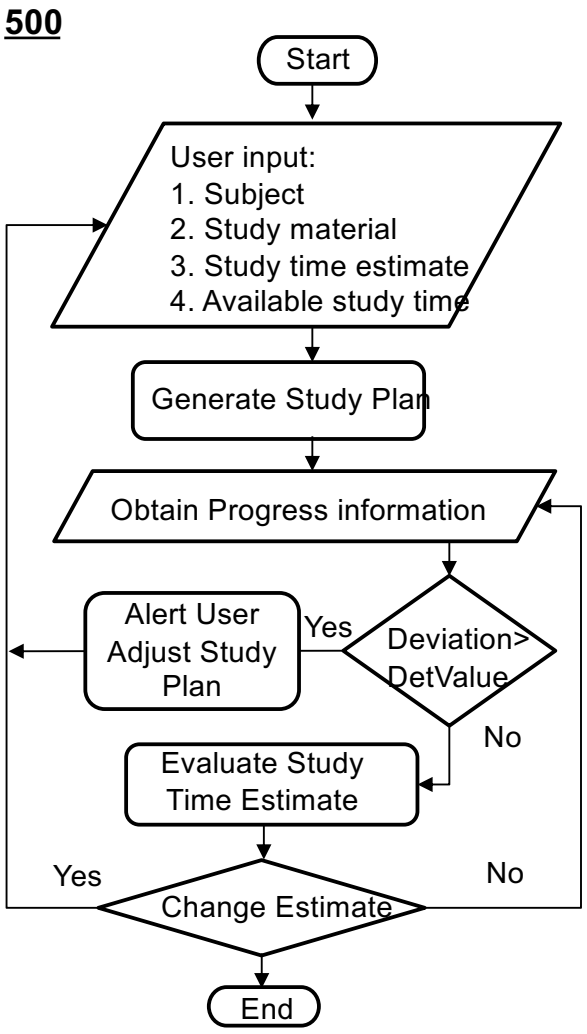
500
Start
User input:
1. Subject
2. Study material
3. Study time estimate
4. Available study time
Generate Study Plan
Obtain Progress information
Deviation> DetValue
Yes
Alert User
Adjust Study Plan
No
Evaluate Study Time Estimate
Yes
Change Estimate
No
End

FIG. 5

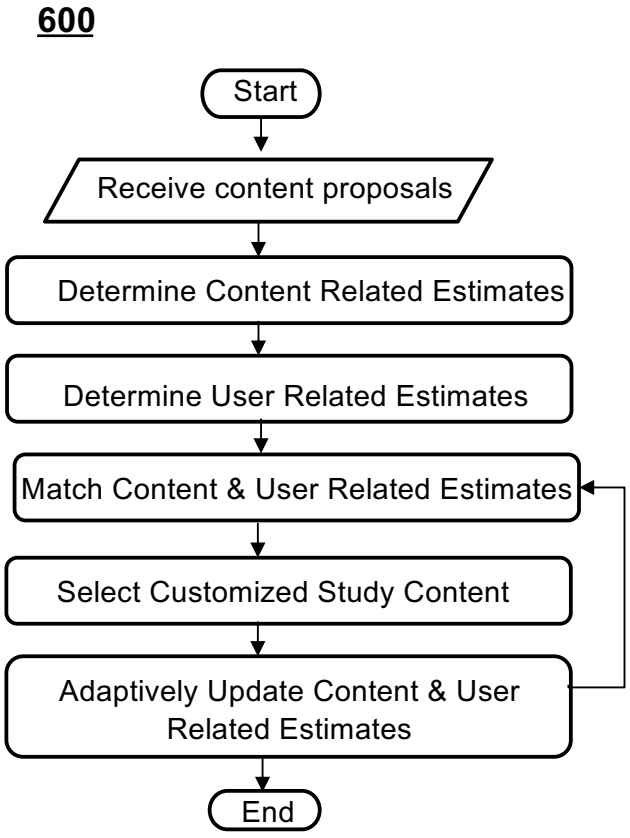
600
Start
Receive content proposals
Determine Content Related Estimates
Determine User Related Estimates
Match Content & User Related Estimates
Select Customized Study Content
Adaptively Update Content & User Related Estimates
End

FIG. 6

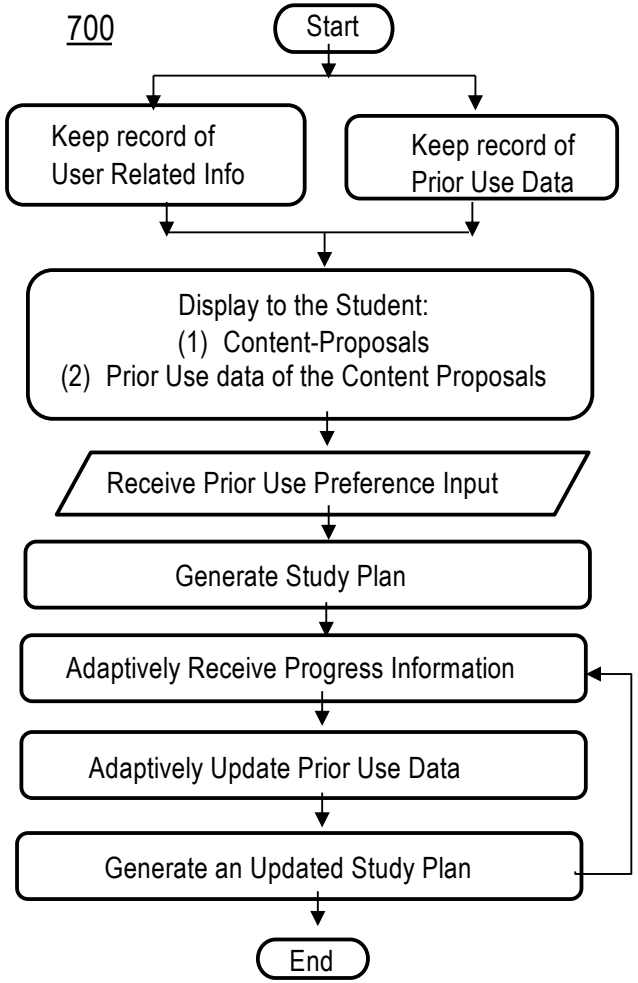
700
Start
Keep record of User Related Info
Keep record of Prior Use Data
Display to the Student:
(1) Content-Proposals
(2) Prior Use data of the Content Proposals
Receive Prior Use Preference Input
Generate Study Plan
Adaptively Receive Progress Information
Adaptively Update Prior Use Data
Generate an Updated Study Plan
End

FIG. 7

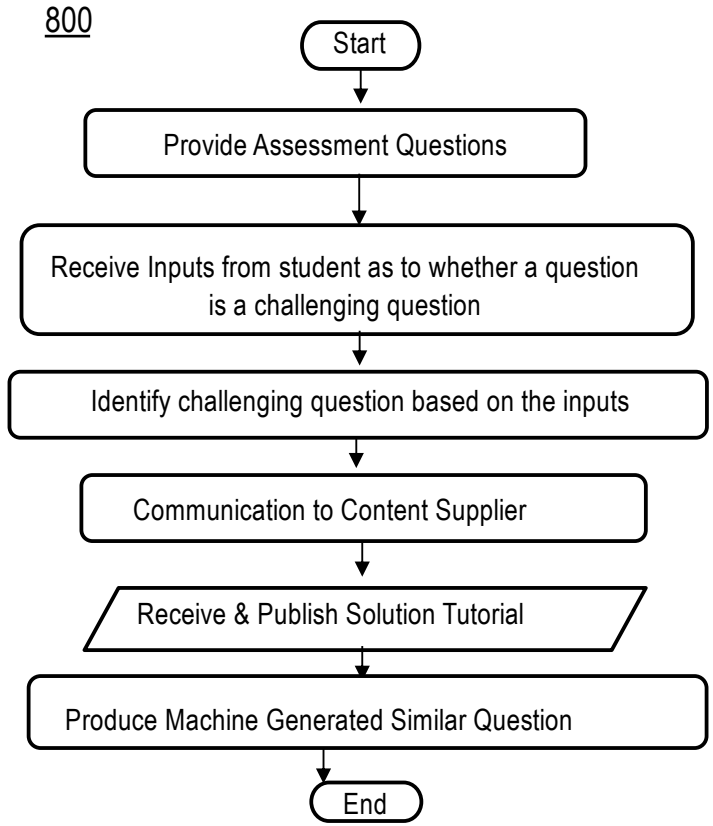
800
Start
Provide Assessment Questions
Receive Inputs from student as to whether a question is a challenging question
Identify challenging question based on the inputs
Communication to Content Supplier
Receive & Publish Solution Tutorial
Produce Machine Generated Similar Question
End

FIG. 8

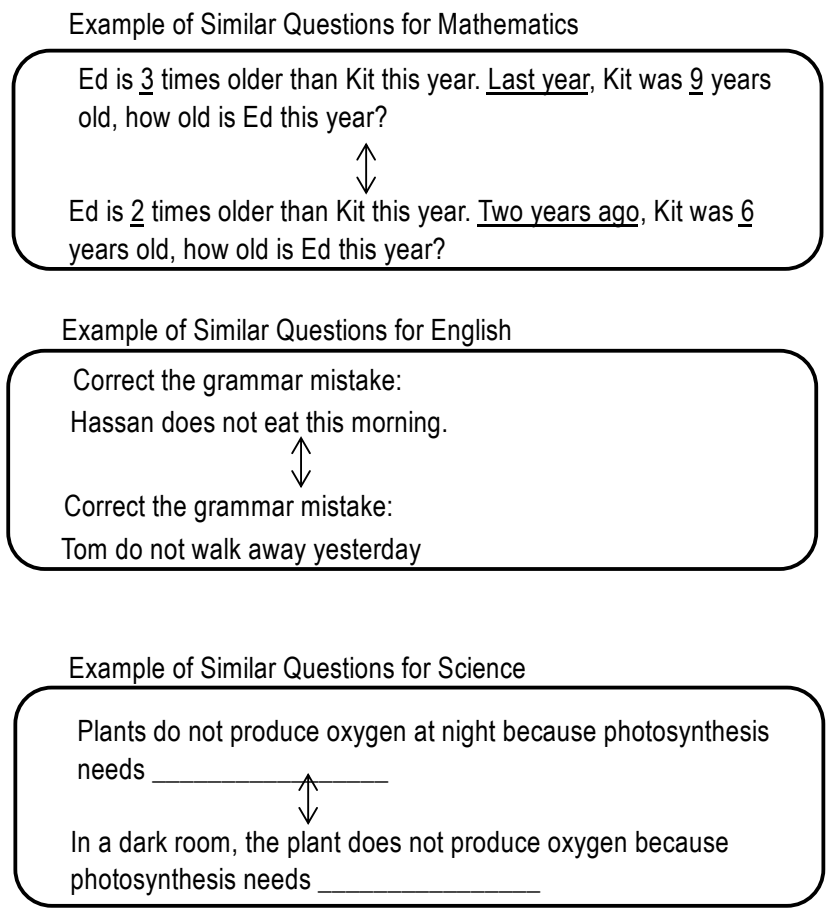
Example of Similar Questions for Mathematics
Ed is 3 times older than Kit this year. Last year, Kit was 9 years old, how old is Ed this year?
Ed is 2 times older than Kit this year. Two years ago, Kit was 6 years old, how old is Ed this year?
Example of Similar Questions for English
Correct the grammar mistake:
Hassan does not eat this morning.
Correct the grammar mistake:
Tom do not walk away yesterday
Example of Similar Questions for Science
Plants do not produce oxygen at night because photosynthesis needs _____
In a dark room, the plant does not produce oxygen because photosynthesis needs _____

FIG. 9

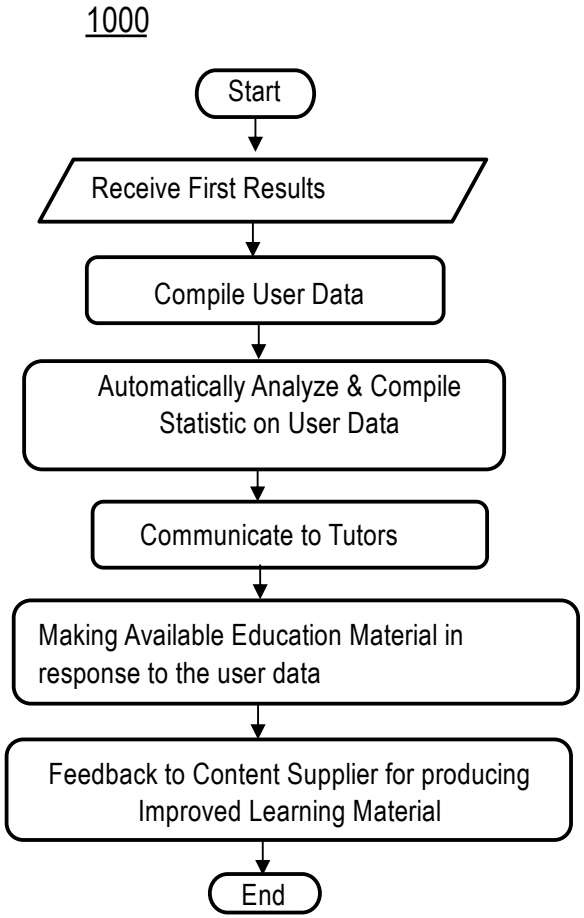
1000
Start
Receive First Results
Compile User Data
Automatically Analyze & Compile Statistic on User Data
Communicate to Tutors
Making Available Education Material in response to the user data
Feedback to Content Supplier for producing Improved Learning Material
End

FIG. 10

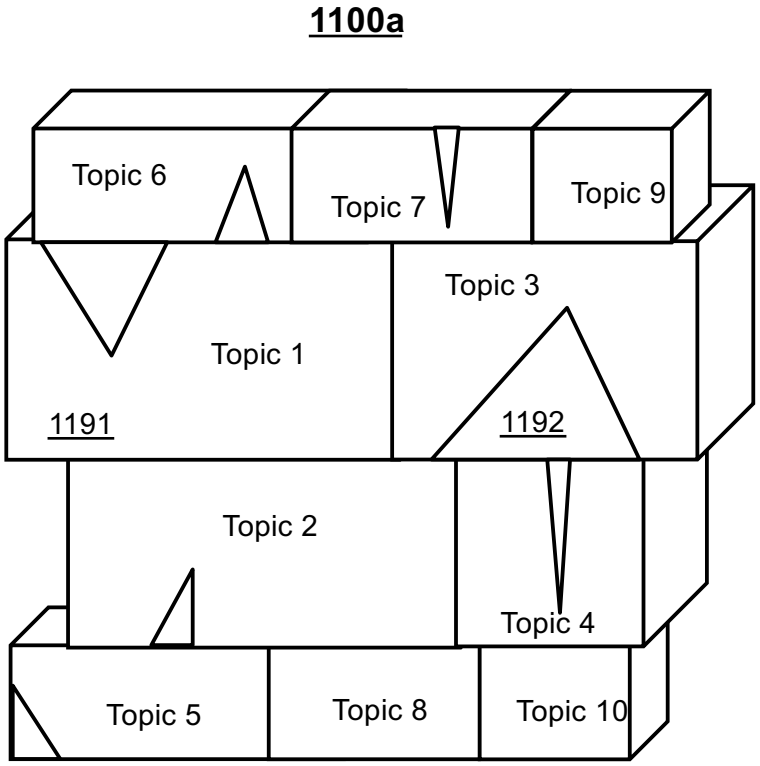

FIG. 11A

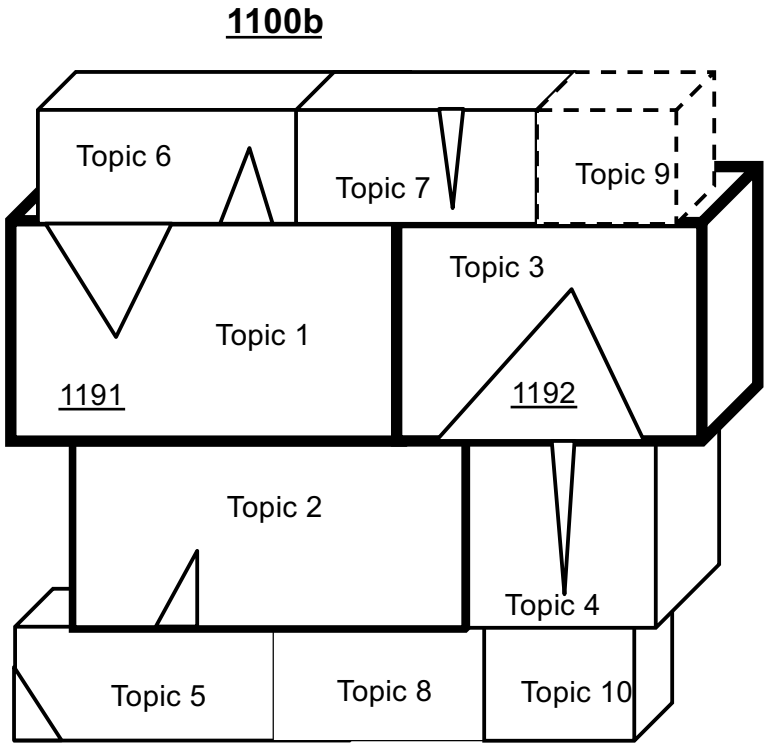

FIG. 11B

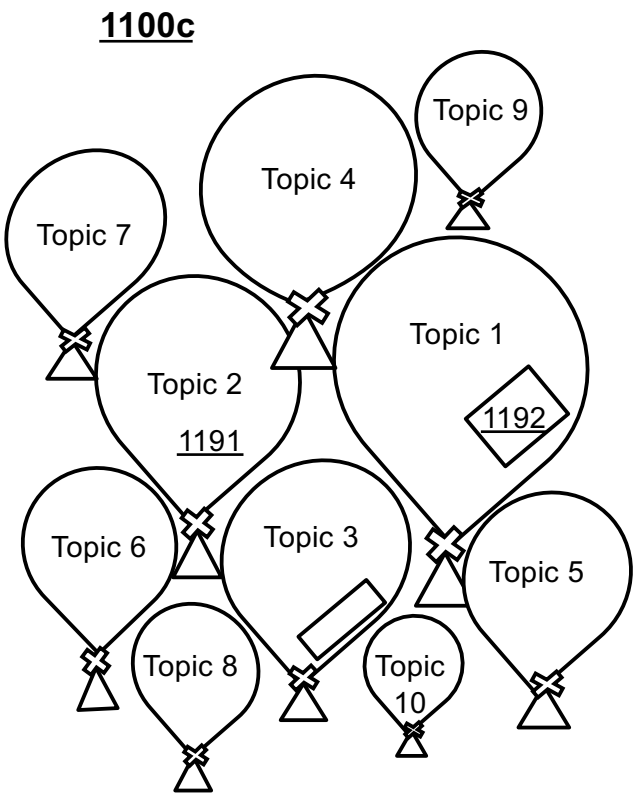

FIG. 11C

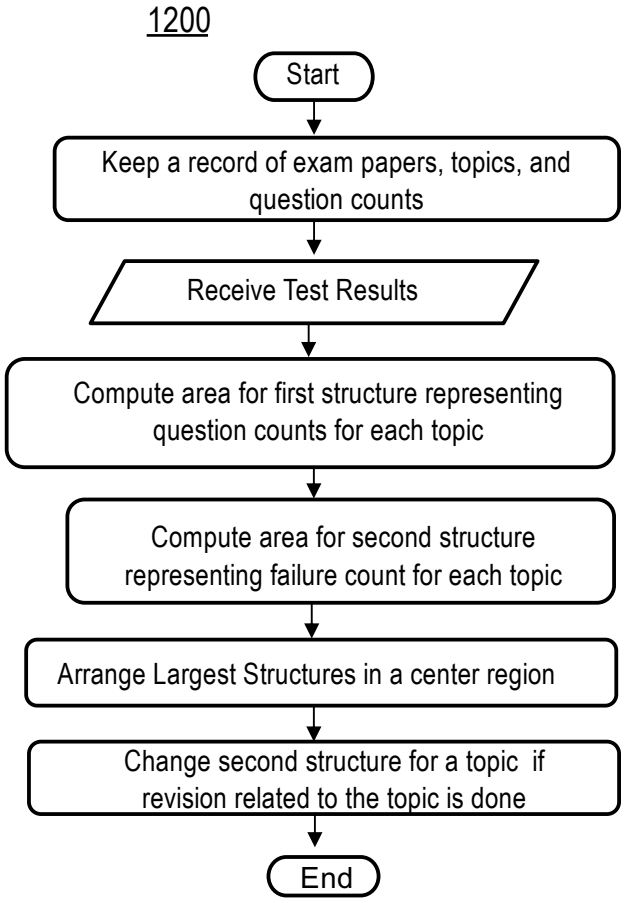

FIG. 12