



TITA

TiTa- Classroom Management System

Submitted by -

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Processes

Processes for TiTa - Classroom Management System				
Sr. No.	Process Name	Description	Inbound data flows	Outbound data flows
1	Authentication	Login to TiTa. Type of user decided using their e-mail id, given that the user domain consists only of teachers and students.	User Information Authentication Response	Session Authentication Request
2	Classroom Join	Join classroom using a unique code that has been generated using an algorithm that has a collision rate of less than 1 in 2^{32} . This code is shared via third-party softwares to the students by the teacher.	Classroom Code Session Teacher Details Creation Request Student Details	Student Details Teacher Details Classroom Details Classroom Code
3	Time Table Handler	Create and display timetable dynamically for both teachers and students. Teacher has the facility to create and reschedule classes.	Classroom Details Schedule	Time Table
4	Quiz Handler	Create and share quizzes for students. This can be done by using a third party software like GForms and sharing its link. Once quiz has been submitted by all the students, it provides facility to score them and display scores to the students, among other things like statistics.	Quiz Details Quiz Creation Solved Quizzes	Quiz Creation Class Score Quiz Score
5	Assignment Handler	Assign classwork/homework to students by uploading a pdf of the question paper. Students can submit the assignments; accepts only if submission is before deadline. Teacher checks the assignment and may display the score.	Assignment Details Assignments Solved Assignments	Assignment Creation Assignments Feedback

6	Resource Handler	Teacher uploads resources on the classroom for specific subclasses. Students can then view resources in the their classroom.	Resource details Resource files	Resource details Resource creation
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Data Flow

Data Flow for TiTa - Classroom Management System					
S. No.	Data Flow Name	Description	From process	To process	Data structures
1	User information	User sends his email and passwrod to google using oauth and google sends repsonse		Authentication	User Information
2	Session	Server sends session to the user if the user logins correctly that client sends to server to authenticate	Authentication		String
3	Classroom code	Upon creation of classroom teacher gets unique code that student uses to join classroom		Classroom join	String
4	Teacher details	Once teacher logins, their email data goes to classroom join	Authentication	Classroom join	Teacher details
5	Student Details	Once student logs in, their email data goes to Classroom Join	Authentication	Classroom join	Student Details
6	Classroom Details	Once a classroom is created, it goes to Classrooms Table	Classroom join	Timetable Handler	Classroom Details

7	Schedule	Upon classroom creation, Teacher enters the schedule of thier Classroom which gets stored inTimetable		Timetable Handler	Timetable details
8	Time Table	Describes Individual Classroom Session which could be a Lecture,Tutorial and Practical	Timetable Handler		Array of Timetable details
9	Quiz Details	Upon Uploading of a Quiz by teacher, the details go to Quiz Handler		Quiz handler	Quiz details
10	Solved Quizzes	Solved quizzes uploaded by students go to quiz handler		Quiz handler	Documents or links
11	Quiz Score	Scores corresponding to each student's submission are sent to them.	Quiz handler		Integer
12	Assignment Details	Upon uploading of an assignment by Teacher, the details go to Assignment Handler		Assignment handler	Assignment details
13	Solved Assignments	Solved assignments uploaded by students go to the assignment handler.		Assignment handler	Documents
14	Assignment Feedback	Feedback Corresponding to each Student's submission is sent to them	Assignment handler		String
15	Resource Details	Upon uploading of an resource by Teacher, the details go to Resource Handler	Resource handler		Resource Details

Data Structures

User Information

- Email
- Password

Student Details

- Sid
- Name
- Email
- Subclassrooms id

Teacher Details

- Teacher Id
- Name
- Email
- Classrooms id

Classroom Details

- Classroom Id
- Course Name
- Course Code

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- Branch year
 - Branch Name
 - Number of Groups
 - SubClassroom Details
 - Subclasroom Id
 - Group Number

Time Table details

- Time Table Id
- Sub Class Id
- Start Time
- End Time
- Day
- Type of session

Assignment Details

- Assignment Id
- Assignment name
- Creation date
- Submission Date
- Assignment link

Quiz Details

- Quiz Id
- Quiz name

- Start time
- End time
- Quiz link
- Quiz scores

Resource details

- Resource id
- Name
- Description
- Uploaded at
- Resource Link

Data Stores

Data Dictionary for TiTa - Classroom Management System						
By - Puneet Bansal 19103006, Taranjot Singh 19103024, Utkarsh Goel 19103049, Shubh Ashish 19103057						
					Legend	P- Primary Key
						F- Foreign Key
Students Table						
P/F	Field Name	Caption	Data Type	Field Size	Notes	Example
P	sid	Student ID	Integer			22103007
	Name	Name	Text	100		John Doe
	Email	User email	Text	150		johndoe.bt19civil@pec.edu.in

Description	Student data collected from 3rd party authentication. Contains Student ID, Student Name and Student Email.
To Process	Classroom join, Assignment handler, Quiz handler
From Process	Authentication

Teachers Table						
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P/F	Field Name	Caption	Data Type	Field Size	Notes	Example
P	tid	Teacher ID	Integer			5
	Name	Name	Text	100		Rajesh Bhatia
	Email	User email	Text	150		rbhatia@pec.edu.in

Description	Teacher data collected from 3rd party authentication. Contains Teacher ID, Teacher Name and Teacher Email.
To Process	Classroom join, Timetable handler
From Process	Authentication

Classrooms Table						
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P/F	Field Name	Caption	Data Type	Field Size	Notes	Example
P	classroom_id	Classroom ID	Text	10		asdfghjkl
	course_name	Name of Course	Text	50		Engineering Analysis and Design
	course_code	Course Code	Text	10		CSN-206
	num_groups	Num of Subgroups	Integer			6
	branchName	Name of Branch	Text	50		CSE
	branchYear	Branch Joining Year	Integer			2019

Description	Classroom data entered by teacher while creation. Contains ID, course's name, code, name of branch, its joining year and the number of sub-groups for that class.
To Process	Timetable Handler
From Process	Classroom join

Sub_Class Table						
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P/F	Field Name	Caption	Data Type	Field Size	Notes	Example
P	sub_class_id	Subclassroom ID	Integer			7

F	class_id	Classroom ID	Text	10		asdfghjkl
	grp_no	Group No.	Integer			3
Description	Contains all subgroups of a class.					
To Process	Timetable handler, Assignment handler, Quiz handler					
From Process	Classroom join					
Stud_Class Table						
P/F	Field Name	Caption	Data Type	Field Size	Notes	Example
F	sid	Student ID	Integer			22103007
F	sub_class_id	Subclassroom ID	Integer			7
Description	Maps students to their respective sub classes					
To Process	Timetable handler					
From Process	Classroom join					
Teach_Class Table						
P/F	Field Name	Caption	Data Type	Field Size	Notes	Example
F	tid	Teacher ID	Integer			5
F	sub_class_id	Subclassroom ID	Integer			7
Description	Maps teachers to their respective sub classes					
To Process	Timetable handler					
From Process	Classroom join					
TimeTable Table						
P/F	Field Name	Caption	Data Type	Field Size	Notes	Example
P	tt_id	Teacher ID	Integer			5
F	sub_class_id	Subclassroom ID	Integer			7
	start_time	Class start time	Date/Time	10	hh:mm:ss	09:00:00
	end_time	Class end time	Date/Time	10	hh:mm:ss	10:00:00

	day	Class Week-day	Text	10	"Monday", "Tuesday", "Wednesday", "Thursday", "Friday", "Saturday", "Sunday"	Monday
	type	Type of class	Text	10	"Practical", "Lecture", "Tutorial"	Lecture
Description	Contains information about each class session					
To Process	Timetable handler					
From Process	Timetable handler					

Assignments Table						
P/F	Field Name	Caption	Data Type	Field Size	Notes	Example
P	assignment_id	Assignment ID	Integer			1
	assignment_name	Assignment Name	Text	50		SQL
	creation_date	Date of Assignment creation	Date/Time	20	dd mm yyyy hh:mm:ss	01-01-2001 00:00:00
	submission_date	Date of Assignment Submission	Date/Time	20	dd mm yyyy hh:mm:ss	01-01-2001 23:00:00
	assignment_link	Link of uploaded Assignment	Text	150		docs.google.com/assignment/link
Description	Contains details about assignments created by teachers.					
To Process	Assignment handler					
From Process	Assignment handler					

Quizzes Table						
P/F	Field Name	Caption	Data Type	Field Size	Notes	Example
P	quiz_id	Quiz ID	Integer			1
	quiz_name	Name of Quiz	Text	50		Lab Quiz
	start_time	Start time of quiz	Date/Time	20	dd mm yyyy hh:mm:ss	01-01-2001 05:00:00
	end_time	End Time of Quiz	Date/Time	20	dd mm yyyy hh:mm:ss	01-01-2001 05:15:00
	quiz_link	Link of uploaded quiz	Text	100		docs.google.com/quiz/link
Description	Contains details about quizzes created by teachers.					
To Process	Quiz handler					

From Process	Quiz handler					
Assignment_Subclass Table						
P/F	Field Name	Caption	Data Type	Field Size	Notes	Example
F	assignment_id	Assignment ID	Integer			1
F	sub_class_id	Subclassroom ID	Integer			7
Description	Maps assignments to respective sub classes.					
To Process	Assignment handler					
From Process	Assignment handler					

Quiz_Subclass Table						
P/F	Field Name	Caption	Data Type	Field Size	Notes	Example
F	quiz_id	Quiz ID	Integer			1
F	sub_class_id	Subclassroom ID	Integer			7
Description	Maps quizzes to respective sub classes.					
To Process	Quiz handler					
From Process	Quiz handler					

Stud_assignment Table						
P/F	Field Name	Caption	Data Type	Field Size	Notes	Example
F	assignment_id	Assignment ID	Integer			1
	assignment_link	Link of uploaded Solution	Text	150		docs.google.com/assignment/link
	submitted_at	Date and time of submission	DateTime			2021-12-13 08:08
F	Sid	Student ID	Integer			7
Description	Maps assignments to respective sub classes.					
To Process	Assignment handler					
From Process	Assignment handler					

Resources Table						
P/F	Field Name	Caption	Data Type	Field Size	Notes	Example
P/F	id	Resource ID	Integer			1

	name	Name of resource	Text	50		Linear Regression
	description	Description of the resource	Text	1000		Students go through this before next quiz
	uploaded_at	Date when resource was uploaded	DateTime			2021-12-13 08:08
	link	Link of created resource	Integer	150		docs.google.com/assignment/link

Description	Contains details about resources created by teachers.					
To Process	Resource handler					
From Process	Resource handler					

Resorces_Subclass Table						
P/F	Field Name	Caption	Data Type	Field Size	Notes	Example
F	Resource_id	Resource ID	Integer			1
F	sub_class_id	Subclassroom ID	Integer			7
Description	Maps resources to respective sub classes.					
To Process	Resource handler					
From Process	Resource handler					

Quiz_result Table						
P/F	Field Name	Caption	Data Type	Field Size	Notes	Example
F	quiz_id	Quiz ID	Integer			1
F	sid	Student ID	Integer			7
	submitted_at	Time of Submission	DateTime			2021-12-13 08:08
	score_obtained	Scores obtained	Float			13
	max_score	Maximum Score that could be obtained	Integer			15
Description	Maps quiz result to respective students..					
To Process	Quiz handler					
From Process	Quiz handler					