



**TITA**

# TiTa- Classroom Management System

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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 email id, given that the user domain consists only of teachers and students.	User Information Authentication Response	Session Authentication Request
2	Classroom Join	Join the 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 timetables 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 a 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; they are accepted only if submission is before deadline. Teacher checks the assignment and may display the score.	Assignment Details Assignments Solved Assignments	Assignment Creation Assignments Feedback

# 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 password to google using oauth and google sends response		Authentication	User Information
2	Session	Server sends session to the user if the user logs correctly that client sends to server to authenticate	Authenticatio n		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 logs in, their email data goes to classroom join	Authenticatio n	Classroom join	Teacher details
5	Student Details	Once student logs in, their email data goes to Classroom Join	Authenticatio n	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 their Classroom which		Timetable Handler	Timetable details

		gets stored in Timetable			
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

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# 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
- Branch year

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- **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**
- **Creation date**
- **Submission Date**
- **Assignment link**

### **Quiz Details**

- **Quiz Id**
- **Start time**
- **End time**
- **Quiz link**

# Data Stores

Data Dictionary for TiTa - Classroom Management System						
					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						
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						
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	Number of Subgroups	Integer			6
<b>Description</b>	Classroom data entered by the teacher while creation. Contains ID, course's name, code and the number of sub-groups for that class.					
<b>To Process</b>	Timetable Handler					
<b>From Process</b>	Classroom join					
Sub_Class Table						
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
<b>Description</b>	Contains all sub-groups of a class.					
<b>To Process</b>	Timetable handler, Assignment handler, Quiz handler					
<b>From Process</b>	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
<b>Description</b>	Maps students to their respective sub classes					
<b>To Process</b>	Timetable handler					
<b>From Process</b>	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
<b>Description</b>	Maps teachers to their respective sub classes					
<b>To Process</b>	Timetable handler					
<b>From Process</b>	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
<b>Description</b>	Contains information about each class session					
<b>To Process</b>	Timetable handler					
<b>From Process</b>	Timetable handler					

Assignments Table						
P/F	Field Name	Caption	Data Type	Field Size	Notes	Example
P	assignment_id	Teacher ID	Integer			1
	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		<a href="https://docs.google.com/assignment/link">docs.google.com/assignment/link</a>
<b>Description</b>	creation_date					
<b>To Process</b>	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
	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	150		<a href="https://docs.google.com/quiz/link">docs.google.com/quiz/link</a>
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					