# KGPExpress

**Cloud Computing (CS60118)**
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**Group Number: 10**
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Project Website - [KGPExpress - Home](#)

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# Contents

# 1.  Introduction

Due to the online semester, it is difficult for students to manage their academics due to a lot of regular tasks. Each student has more than one subject and each subject has quizzes, assignments and class tests. So it becomes difficult for the students to keep count on all of the activities.

So, we propose to develop a one-place solution to manage their academics. We developed an online platform where they can share information among themselves. We have added multiple features to our platform to make this possible. Various security measures have been taken to make the information reliable.

# 2.  Feasibility study of the project

The current model for our application uses different cloud based environments for hosting the main application and the database. Using the current technologies, a revamp of the existing system is feasible.

Some of these aspects include:

- The email notification service can be made faster and more robust to breakdown by using load balancing techniques.
- An expansion of the application to mobile based apps is feasible. This will ensure broad network access.
- Multiple users can be served better through efficient resource management and scheduling schemes.
- Adding more interactive features to the frontend and making the interface more responsive is feasible with the current technology stack.

# 3.  Technology used

The project development has been done using PyCharm2021.1 and Microsoft Visual Studio IDE. Frontend has been developed using HTML, CSS and JavaScript. Backend has been developed in Django. The database development has been done using PostgreSQL. Backend service is using some publicly available python modules. These are py3-validate-email for user verifications and psycopg2 for connecting email service to the backend database.

The project is being hosted on Heroku Cloud Application. The database and the email notification service for upcoming events is being hosted on Microsoft Azure Cloud Computing Services. The email notification service is using Google SMTP server.

# 4. Project Description

The project is designed using django to manage the academic activities throughout the semester by collecting data from various users. We have added multiple functionalities to the project to make the information sharing easier.

We have added all the subjects that are in the UG curriculum of IITKGP to our website. For every subjects there can be multiple events i.e. Test, Assignment, etc. We have divided these events into five types:

1. Class Test
2. Quiz
3. Assignment
4. Project
5. Other

For every event we have it's starting time, end time, description, type, Event name and subjects it is related to. These events will be displayed in a calendar for better visibility. Registered users can also have their personalised calendar which they can create by selecting a set of their registered subjects. All the events of these subjects will then be combined in a single calendar for personalised experience.

Now these events can be added/edited by the user according to the user type. Below are the description users that could use our platform:

| User | User Type | Description |
|------|-----------|-------------|
| Guest | Guest | A user who wants the information but does not have an account |
| Registered | Not verified | A user who has registered but his/her institute mail id is not verified |
| | Verified | A user whose institute mail id is verified |

Each user has access to a set of activities depending on its user Type. List of these activities that these users can perform on the platform are:

| Activity | User Type | Description |
|----------|-----------|-------------|
| Subject Search | All | Any user can search and view the subject details along with the event calendar. |
| View Event | All | Any user can access the event information by clicking the event on the calendar. |
| Add Event | Verified | A new event can be added by verified users only. |
| Edit/Delete Event | Verified | An event can be edited by verified users only. |
| Personalised Calendar | Verified, Not verified | A personalized calendar can be created by selecting a set of subjects. All the events will be displayed in a single calendar. This personalised calendar enables easy tracking of upcoming events. A user can easily get sufficient information from it in just one click. This calendar is available under 'My Subjects' tab. |
| Email Notification | Verified, Not verified | Users can opt for an email notification service that provides daily updates of upcoming events through mail. |

## 5.  References

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