9/16/2022

Supervisor:

Dr. Abdul aziz

FYP Proposal

FAST CENTRAL HUB

**Group Members:**

K191048 Amman Soomro

K191118 Naba Jafri

K191090 Mashood Nadeem



**Institution Details**



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| **Province** | Sindh | **City** | Karachi |
| **Institution** | The National University of Computer and Emerging Sciences (FAST-NU) | **Campus** | Karachi |
| **Department** | Computer Science | **Degree Level** | BS |
| **Degree Program** | Computer Science | **Telephone** | (021) 111 128 128 |
| **Fax** |  | | |

**Supervisor Details**



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| --- | --- | --- | --- |
| **Name** | Dr. Abdul Aziz | **Gender** | Male |
| **Mobile** | 0333 - 3031237 | **Office No** | Nil |
| **Email** | abdulaziz@nu.edu.pk | **Designation** | Assistant Professor and Coordinator |
| **Qualification** | Ph.D. Information Technology | | |

**Co-Supervisor Details**



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| --- | --- | --- | --- |
| **Name** | - | **Gender** |  |
| **Mobile** | - | **Office No** |  |
| **Email** | - | **Designation** |  |
| **Qualification** | - | | |

**Head of Department Details**



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| --- | --- | --- | --- |
| **Name** | Dr. Zulfiqar Memon | **Mobile No.** | - |
| **Email** | zulfiqar.memon@nu.edu.pk | **Gender** | Male |

**Project Details**



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| **Project Title** | FAST Central Hub | | | |  | | |  |
| **Group Details** | **Member 1 Name:** Amman Soomro    **Member 1 Roll#:** 19K - 1048 | | | **Member 2 Name:** Naba Jafri    **Member 2 Roll#:** 19K - 1118 | | | **Member 3 Name:** Mashood Nadeem    **Member 3 Roll#:** 19K - 1090 |  |
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| **Project Area of** |  | | | | | | |  |
| **Specialization** | Web Application | |  | |  | | |  |
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| **Project Start Date** | September 2022 | | **Project End Date** | | May 2023 | | |  |
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| **Project Summary** | Our project is based upon a central hub system, which intends to work out a web application that maintains all the student-useful information.  Every year students find themselves contacting their seniors or teachers asking for course material, resources, teacher reviews, etc. We intend to develop a central hub that holds a plethora of useful content within itself, aiming to provide a wide set of information to the learner. Be it the student or the tutor, both will have access to a pool of resources or rather, content that they can get access to at any point in time. This ensures that there is no restriction on the large volume of the content the learner can indulge in.  The chances of missing out or forgetting about some important concept and wanting to access that information from your previous semester can happen often, and not having the privilege of accessing that course material because the class is no longer available on slate or the teacher has abolished it from the GCR can be a real setback, hence our Hub will provide the convenience of accessing the old and updated content at any time and anywhere.  Hence saving the time and energy of going around asking for reviews, and content from others.  The Repository will also provide information to all the departments, courses, and teachers. The students will be able to provide feedback and reviews for the Courses and Teachers.  Each Course will have its page, consisting of course code, description, course material, relevant playlists, course rating based on the feedback of students, and a review section where the students can provide their feedback and reviews so that the coming Students can know beforehand about the course pre-requisites, what to focus-on, course outcome, and objectives.  Each Teacher will also have its page as well, consisting of all the teacher information, i.e., their name, email, courses they teach, and a feedback section where students can provide their feedback and reviews.  Additionally, the application will provide a notice board, where all the important emails/announcements i.e., Career Opportunities, Society Events, Workshops, etc. will be posted, to fill the vacuum created by the fact that students are often missing out on important emails because they didn’t receive it.  Our target audience comprises a diverse group of FAST University students who cannot find information on courses, or professors, or who wish to have FYP ideas for their senior year. | | | | | | |  |
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| **Project Objective** | The problems that we want to address and solve are:   * Providing a central hub for all the useful information, so that students or teachers don’t have to go around looking for relevant content and information, and access it anywhere, anytime.      * Time, energy, and money are the three most important elements that will bear fruit for time to come when conserved. Having said this, one of the objectives of this project is to considerably save time, energy, and money for both the learner as well as the institution. Students also benefit as they can access the course resources at their convenience. * The objective of having the Hub is not only to make the learning process interesting and informative in nature but also to check how effective it has been. It will ease the evaluation process with reviews and feedback. The feedback and Review feature will help in understanding any issues that the learner is facing. * Platform for the student to address their queries. | | | | | | |  |
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| **Literature Review / Background Study** | Previously available we have 3 platforms such as Slate, Google Classroom (GCR), and Flex that deal with student-useful university information.  While using GCR we can only access the currently available classes of the current semester for the study material. As soon as the semester ends, if the teacher deletes the class, you have no more access to the study material which is a major drawback for the students who want to access the material in the future for reference purposes.  In Flex we can review and provide feedback to the teachers at the end of the semester, but no new student can view the feedback. Students new to the semester, while selecting course elective student require a course outline and reviews from the students that have already studied the course.  Slate has multiple student-useful features, but due to a lack of efficient user-experience students and even the teachers no longer use it frequently, other than only for assignment submissions, and once you move on to the next semester, you no longer have access to the material/course content from the previous semesters.   |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | Availability of data | User Experience | Course Review | Course Material | Teacher Review | Announcements | Department Details | Access to Previous Course Content | FYP Guidance | | SLATE | ✔ |  |  | ✔ |  | ✔ |  |  |  | | FLEX | ✔ | ✔ |  |  | ✔ |  |  |  |  | | GCR | ✔ | ✔ |  | ✔ |  |  |  | ✔ |  | | Project | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | | | | | | | |  |
| **Project Implementation Method** | We chose to create a web application as it will be easily accessible to those using a desktop or a mobile phone, the web application will be developed using ReactJs as its Front-End to improve the code efficiency, and maintainability and to avoid repetitive code using React Components.  For the backend, the main benefit of using a NoSQL database like MongoDB is that it allows you to manage enormous volumes of data quickly using a scale-out architecture that can store structured, unstructured, and semi-structured data. The Node.js and ExpressJs environment is used because it employs an event-driven I/O architecture and server-side rendering that is incredibly efficient and allows for the development of scalable applications. | | | | | | |  |
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| **Benefits of the** | At the beginning of each semester, most students find it very difficult to opt for the elective, considering that they do not the course outline or outcome of any of those subjects, being that said, the teacher teaching the course also has a major impact on deciding which course to opt for, Our Central Hub will contain information regarding both of these and will help the student decide what elective or course to go for.  And, often during vacations students tend to start studying for the coming semester but they find it difficult to obtain the course material, outline, and resources to start studying, we help students with this endeavor by developing a centralized repository where they can find information associated with any academic subject.  Additionally, the likelihood of a student missing out on some important email/announcement due to registration of a technical issue is never out of the equation, hence students facing this issue can benefit from the announcements’ Notice board. | | | | | | |  |
| **Project** |  | | | |  | | |  |
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| **Technical**  **Details of Final Deliverable** | *Dashboard Module*: The “Welcome” Page to our web application, consists of Logged in user information, a management page (for Admins), Navigation Menu to navigate around the Website.  *Course Repository Module*: A module where all the current and previous resources/content for each course offered at the university will be available.  *Course Module*: A module consisting of Course Code, Description, Content, Relevant Playlists, Reviews, and Rating.  *FYP(s) Module*: A module where FYP(s) done in the past will be listed and categorized by their Domain / Area of Specialization to give students an idea, of who are struggling to find one.  *Teacher Module:* A module consisting of Teacher Information i.e., their name, email, courses they teach, and a feedback section where students can provide their feedback and reviews.  *Important Announcement Module:* Important announcements regarding Internships, Events, Job Opportunities, and Workshops will be posted here. | | | | | |  |
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| **Final Deliverable of the Project** | The final deliverable will consist of a user-friendly, easy-to- React website, consisting of all the semesters’ courses, resources, information, teachers’ information, a notice board where all the important announcements will be posted, and a Facebook-like wall where students can post their queries. | | | | | | - |
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| **Core** |  |  | |  |
| **Technology** | React Js, SASS, Firebase, Express, Nodejs | |  | | |  |  |
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| References     |  |  |  | | --- | --- | --- | | 1. <https://reactjs.org/docs/getting-started.html> 2. <https://expressjs.com/en/guide/routing.html> 3. <https://firebase.google.com/docs> 4. <https://www.youtube.com/c/CodeWithHarry> |  |  | | | |  | | |  |  |
| Project Key Milestones | | |  | | |  |  |
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| **Elapsed time in (days or weeks or month or quarter) since the start of the project** | | | **Milestones** | | | **Deliverable** |  |
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| Month 1 |  | | * Gathering Software Resources and Information * Data gathering | | | * Project Proposal * Data Gathering (SRS) |  |
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| Month 2 |  | | * System Analysis | | |  |  |
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| Month 3 |  | | * UI Design | | | * Basic Working UI of the Project |  |
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| Month 4 |  | | * Database Normalization | | | * Basic Database Connectivity with Project |  |
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| Month 5 |  | | * Coding | | |  |  |
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| Month 6 |  | | * Testing | | | * Test Cases and Resultss |  |
|  |  | |  | | |  |  |
| Month 7 |  | | * Integration | | | * Complete Connectivity of Front-end and Backend |  |
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| Month 8 |  | | * Project Finalization | | | * Project Deployment * Project Presentation * Final Report |  |