

UNION CHRISTIAN COLLEGE ALUVA
DEPARTMENT OF ELECTRONICS AND COMPUTER MAINTENANCE
CENTENARY PROJECT 2020-21

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1.CUSTOMISED UBUNTU OPERATING SYSTEM (UCC-100)

AIM: -To setup a customized Operating System within The Union Christian College Campus. Can be utilized in Computer, Science, Electronics Labs and can also be used in the office. Can be utilized to set up database services.

OBJECTIVE: - Pre Installed software for UG and PG students. Also, the students are provided with a pre-installed Graphical User Interface (GUI) based software updating tool (Synaptic). Learn How to Program using Scratch (Drag and drop software). Integrated Development Environment(IDE) for Python, Perl, C, C++ programming languages (Visual Studio Code, Wings, Notepad++, Emacs). Circuit Designing Tools. Image Manipulation tools (inscape). Document preparation tools Libre Office, TexStudio (tex).Audio Recording and Editing Tool (Audacity), Video Capture tool (OBS). Video editing GUI and command-based tools (Open Shot, FFmpeg). Games to relax (Atomix, Chess).

DURATION:-6-Months

PROPOSED START DATE:-1 June 2020

BENEFICIARY:-All Students and Staff of UnionChristian College

NAME OF PERSON RESPONSIBLE FOR THE PROJECT:-Mr.Ajan P J

PROJECT ESTIMATION:-Rs.30,000

2.ZERO CONTACT AUTOMATIC SANITIZER DISPENSING MACHINE

AIM: -To setup an incubation unit in producing Zero contact Automatic Sanitizer Dispensing Machines (low cost).

OBJECTIVE: -The project is proposed in a view to converting student's theoretical knowledge into practice. Students utilize the technology, facilities, and expertise of the department.

DURATION:-6 Months

PROPOSED START DATE:-1 August 2020

BENEFICIARY:-All enthusiastic Students of the Department of Electronics and Computer Maintenance.

NAME OF PERSON RESPONSIBLE FOR THE PROJECT:-Ajan P J,Akhil T V

PROJECT ESTIMATION:-Rs.25,000

3. CONDUCTING EXAMINATIONS ON-LINE

AIM- To conduct examinations in online format. It is implemented by web based online examination software or through Intranet variance.

INTRODUCTION -Online Examination System is a computerized system which gives instant results and also saves time .It decreases the need of supervision during the exam is being examine or taken using web based Online Examination System gives a high level of clarity as opposite of traditional method. Online Examination System gives the result and instantly.

OBJECTIVE- Moodle is a best **open source Learning Management System (LMS)**. It can be used for conducting online examinations.It provides lots of flexibility and options. It also gives restriction of time duration for which a student can attempt an examination. One can set a particular date and time at which the exam will start and on the similar ground one can also set the end date and time for the examination.

It also provides the option to review the examination and teacher can allow the student to further review the questions. Student can also skip the questions and can come back again to attemptit.

DURATION:– 6 Months.

PROPOSED START DATE:– September 2020.

BENEFICIARY :– Online examination can be used by Schools, Universities, Colleges and Training Institutes for conducting online evaluation of the students.

NAME OF PERSON RESPONSIBLE FOR THE PROJECT:-Ajan P J,Lijo Thomas

PROJECT ESTIMATION:-Rs.10,000

4.BIG DIGITAL WALL CLOCK

AIM: -To setup a BIG Digital Wall Clock on the wall of Kacherry Malika of Union Christian College.

OBJECTIVE: -The project is proposed in a view to set up a Digital Wall Clock with a live update from the internet IST server. The display includes Time along with the Date and atmospheric temperature in degree Celcius or Fahrenheit. Any time-related activities can be attached to it in the future.

DURATION:-6 Months.

PROPOSED START DATE:-1 October 2020

BENEFICIARY:-The whole college can benefit from it.

NAME OF PERSON RESPONSIBLE FOR THE PROJECT:Ajan P J,Akhil T V

PROJECT ESTIMATION:-Rs.20,000

5.AUTOMATIC POWER CONTROL OF APPLIANCES IN A CLASSROOM

AIM:-To set up an automated power on or off system in a classroom detecting the presence or absence of an individual.

OBJECTIVE:-Wastage of electricity is one of the main problems which we are facing nowadays. In our college itself, we see that fan/lights are kept on even if there is nobody in the classroom.. To avoid this practice,this proposal can be implemented.This project has two modules, the first one is known as “Digital Visitor counter” and the second module is known as “Automatic power controller”.

The main concept behind this project is known as “Visitor counter” which measures the number of persons entering a classroom. This function is implemented using a pair of Infrared sensors. This person count will be incremented if somebody enters the room and at that time power will be turned on. And in a reverse way, person count will be decremented if somebody leaves the room. When the number of persons inside the room is zero, lights inside the room are turned off using a relay interface.

DURATION:- 6 Months

PROPOSED START DATE:- 1 SEPTEMBER 2020

BENEFICIARY:It can be implemented in all classrooms, and so our college can benefit from it.

NAME OF PERSON RESPONSIBLE FOR THE PROJECT:-Milna M J,Akhil T V,Ajan P J

PROJECT ESTIMATION:-Rs.100,000

6.AUTOMATIC STAFF ALLOCATION EXAM SCHEDULER

AIM: - Develop a software system to schedule exam duty

OBJECTIVE: - Currently, exam duties are scheduled manually. This is a time-consuming process and a dedicated person is required for this.

Moreover, a teacher's convenience is not considered while scheduling duties. A teacher who is free on a particular day may not be assigned a duty but another teacher who has a hospital appointment may be assigned a duty. The teachers will have to call each other to find out the possibility of swapping the duties. A software system which can automate the scheduling process considering the days preferred by teachers can solve these issues.

We can have the following features:

Slots Creation: - Start date and End date of an exam season is provided and the system provides a calendar-like interface with two slots on a day. No. of invigilators required on a slot can be provided to this interface. After this **Invigilator's Preference Entry** can be triggered with a Start Date & End Date. This can be operated by the coordinator.

Invigilator's Preference Entry: - Invigilators will also have a calendar like an interface with two slots on the day. Exam duty slots will be marked in different colors and teachers can set their preference - High, Medium, Low, and Nil. High indicates that the teacher highly prefers to have that slot and Nil indicates that the teacher has some other engagement and would prefer not to assign that slot. All preferences except High should be limited to a maximum of $\frac{1}{4}$ of the total slots. This will be inaccessible after the End date.

Scheduler: - Software will automatically select invigilators considering their preference and assigns to the slots. An SMS will be generated from the system to the

teachers notifying their slots. Assigned slots also can be viewed in the **Invigilator's Calendar**. This can be operated by the coordinator.

Invigilator's Calendar: - Here also invigilators will have a calendar like an interface with two slots on the day. Slots assigned will be marked in a different color. The system will also provide a print of this.

Miscellaneous: - System will also provide facilities to manage the invigilators and coordinators list. Username and password will be provided to access the system

DURATION: - 1 Year (3 to 4 students spending 8 hours in a week)

PROPOSED START DATE:-1 AUGUST 2020

BENEFICIARY: - All teaching and non-teaching (those involved in duty scheduling) staff.

NAME OF PERSON RESPONSIBLE FOR THE PROJECT:-Simi Varghese.

PROJECT ESTIMATION:-Rs.20,000

7.ONLINE INTERACTIVE HELPDESK

AIM: - Develop and host an online portal to post queries by the students which can be clarified by UC lecturers

OBJECTIVE: - Students may have some queries which might not find satisfactory clarifications. In this situation, the UC College lectures can provide a helping hand through this portal by providing satisfactory clarifications.

We can include the following features:

Student Registration & Approval: - A student can register to the system by providing basic details, identity proof, and a letter from the head of the institution in which they are studying (or proof for an online course which they are pursuing). This will be approved or rejected by the coordinator.

Query List & Entry: - Students after logging into the system can enter their queries and select the appropriate field. (English, Malayalam, Computer, Phycology, etc). These queries will be passed to the **Query Assignment**. The queries will also get listed after submitting them. Students can see clarification along with the rephrased query when it is published.

Query Assignment: - Software will automatically assign the **Queries** from the students to the lecturers considering the field and no. of open queries. These **Queries** will appear in the **Clarification Entry** page of the respective lecturers.

Clarification Entry: - All queries assigned to the lecturer will appear on this page. A lecturer will see only the queries assigned to them. Lecturers can rephrase the query if required and provide their clarification. They can publish this which will

appear in **Query List & Entry** and on the **Public** page. They can also reassign to another lecturer for better clarification.

Public page: - This will be the landing page of the portal which will display all the published queries. Here the rephrased query instead of the original will be included for better readability.

Miscellaneous: - System will also provide facilities to manage the list of the lecturers. Username and password will be provided to access the system by Students and Lecturers. Reports like Lecturers and no. of queries published, Lecturers with queries in open status for more than 7 days, etc will be provided by the system.

DURATION: - 1 Year (3 to 4 students spending 8 hours in a week)

PROPOSED START DATE:-1 SEPTEMBER 2020

BENEFICIARY: - Public; mainly the students in various colleges.

NAME OF PERSON RESPONSIBLE FOR THE PROJECT:-Simi Varghese,Milna M J

PROJECT ESTIMATION:-Rs.20,000

8.BIOMETRIC BASED STUDENT ATTENDANCE SYSTEM

AIM:- To record classroom attendance by means of a bio metric sensor and upload to a cloud and provide an application to students for viewing it.

OBJECTIVE:- Traditional student attendance methods such as roll calling, paper based attendance, or card punches are outdated and often lead to unnecessary time spent by teachers and administrators to track and compensate for their limitations. Additionally, with large groups of students manual supervision is also very tough to execute. Therefore, these traditional student tracking methods have loopholes which cannot prevent proxy attendance, ID card theft, and attendance tracking errors – all serious problems that have a direct effect on education quality.

Biometric attendance systems are automated and provide a convenient way to quickly record student check-in and check-out times. Biometric technology uses human physical and biometric characteristics (which are unique for every individual) to ensure identification accuracy, prevent errors, and eliminate proxy attendance — even from identical twins.

The current attendance management system requires local servers or cpu's which consume electricity,require onsite maintenance,servicing and occupy space.The cloud is definitely more economical.

DURATION:- 1 Year

PROPOSED START DATE:- 1 OCTOBER 2020

BENEFICIARY:-It can be implemented in all classrooms, and so our college can benefit from it.

NAME OF PERSON RESPONSIBLE FOR THE PROJECT:-Milna M J,Lijo Thomas

PROJECT ESTIMATION:-Rs.25,000

9. WEBINAR SERIES-NATIONAL/INTERNATIONAL

AIM- To organize web-based multimedia lessons, seminars, discussions, and demonstrations based on technical or nontechnical topics in national or international level to reach hundreds of people all around the world.

OBJECTIVE- Digital learning environments are increasingly popular in higher education and professional training. With webinars, participants can take extra courses, regardless of the geographical distance between where they live and the institution offering the course. In webinars participants and facilitators or experts communicate live over the Internet. This helps participants to broaden their skills, as well as their understanding of their field of interest. This also allows participants to attain new knowledge and skills that can supplement or complement their main field of study. Also helps the participants to attain knowledge about the new technologies and career opportunities in industry.

DURATION:— Throughout the year (At least once in a month).

PROPOSED START DATE :— June 2020

BENEFICIARY :— Students, faculties, research scholars, technicians, designers and other enthusiastic persons.

NAME OF PERSON RESPONSIBLE FOR THE PROJECT:-Akhil T V, Lijo Thomas.

PROJECT ESTIMATION:-Rs.15,000

10. QUIZ ON THE HISTORY OF UNION CHRISTIAN COLLEGE

INTRODUCTION: - History connects the past with the present; it's not merely the records of the past. In view of this, the department of Electronics and Computer Maintenance has decided to conduct a quiz competition in association with the E&CM alumni about the history of Union Christian College on the occasion of centenary celebrations for the students and the public. It will provide a platform for the students to gain knowledge beyond the academics. The public will be able to develop a strong connection with the college, its activities and appreciate the achievements. The quiz competition will bring to limelight the significance of the college known for its academic excellence and social commitment. The great values and traditions held by the college will attract the students to be a part of the institution.

AIM: - To organise a quiz competition for the students and the public on the History of Union Christian College in association with Electronics and Computer Maintenance alumni.

OBJECTIVE: - To enhance the knowledge and awareness of the students and the public about the history of the Union Christian College, the milestones of the institution from its inception till date and about the proposed activities and projects. The quiz competition will catalyse to foster the relationship of the students and the public with the institution and instil the upcoming generation to be a part of the renowned college. This opportunity will help the students and the alumni to imbibe the culture of the college and turn out to be successful individuals and professionals.

DURATION: - 2 hour

PROPOSED DATE:-1 December 2020

BENEFICIARY: -The students, staff, E&CM alumni and the public.

NAME OF PERSON RESPONSIBLE FOR THE PROJECT:-Beena A K

PROJECT ESTIMATION:-2,000

Head of the Department

Mr.Akhil T V