

Software Project Guide

Semester Spring 2016

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**Whom to Contact?**

This booklet provides comprehensive details to the students who are planning to take Software development projects as their final projects. Therefore, such students are advised to go through it in complete.

If any of the quires are unsatisfied even after having read the information given in rest of the booklet then students should contact to **concerned supervisor**.

**1.** **What is a Software Project?**

At first it is important to understand what the software is? “Software” can be defined comprehensively as,

[[1]](#footnote-2)“Computer Programs that, when executed provide desired function and performance, data structures that enable the programs to adequately manipulate information and documents that describe the operation and use of programs”.

Looking at the definition indicates clearly that developing software does not mean mere development of programs (or code) rather it requires the related documents to be produced as well.

To develop software effectively requires following a process. Each stage of this process culminates in one or more artifacts.

Examples of software projects are, software developed for face recognition, building a Customer Relationship Management (CRM) System, Flight Simulation System, Point of Sale (PoS) System, a Web Portal, an Electronic Store Front etc.

Software projects can be aimed at producing a desktop application, an embedded application (like to be used in microwave oven) or some online application.

**2. Purpose of a Software Project:**

The University aims at producing such IT professionals who leave the impression of excellence in knowledge and skills in their professional lives. Students are encouraged to come up with innovative and unexplored ideas while addressing a problem.

After having completed the project students will be expected to have the following skills,

* It will provide the students with an opportunity to implement the concepts they have learned throughout their degree program so far.
* Awareness of the latest technologies being used in the industry and more importantly the application of those technologies.
* Knowledge of all the formalities required to undertake asoftware project.
* Enough confidence to take the challenges of their practical environment.

**3. Should I takeSoftware Project?**

The development project is recommended for those students who have an aptitude and interest (equally important) for development. Presence of analytical skills to solve a problem is also highly requisite. If a student finds these ingredients in himself/herself then deficiencies (toa certain extent) in the areas like programming, data base and software engineering etc can be overcome but such a student will have to put extra efforts (depending upon the deficiencies) to make his/her weak areas stronger. As having ambitions only does not lead to the goal, one has to strive for those ambitions to get them materialized.

**4. Eligibility Criteria**

* No student below 1.75Effective CGPA will be allowed to take the project title.
* MCS/MIT Students must have completed 30 credit hours to become eligible for taking the final project. So don’t enroll in CS619 course or drop your cs619 course if you have earned less than 30 credit hours.
* BSCS/BSIT Students must have completed 90 credit hours to become eligible for taking the final project. So don’t enroll in CS619 course or drop your cs619 course if you earned less than 90 credit hours.

**5. Guidelines to register for a Project**

Please read the following to get to know, how you can get registered for you final project.

* First of all, you have to enroll in CS619 course in Spring 2016 semester through course selection (contact [course\_selection@vu.edu.pk](mailto:course_selection@vu.edu.pk) for enrollment).
* Carefully read the eligibility criteria and only send a request if you are eligible to take a final project title. Otherwise drop your cs619 course. The project selection will be done through LMS.
* Students will be required to make groups. In a group maximum two (2) students are allowed.
* A student can also choose to do the project alone (a single member of the group instead of two)
* Students who fail to submit their final project in specified duration (two consecutive semesters) will need to take course CS619 in extra semester to continue the same project.

**6. Grading Policy**

Students will be clearly communicated about the deliverables they need to submit on specified dates. This is important to remember that each deliverable carries a significant weightage so students are advised to take each deliverable very seriously and submit it according to the date announcements according to the submission schedule.

While evaluating the students the following factors will be considered important

* Effective use of time and of visual aids.
* Organizational and presentation skills.
* Seriousness and dedication of the students in meeting the announced dates for each deliverable.

**7. Software Projects for Spring 2016**

Following is the list of projects which have been offered for Spring 2016.

Students can only select a project from this given list.

Students have to adhere to the requirements specified with each project as the evaluation of the executable artifact will be performed accordingly.

Next, each offered project’s detailed information is provided.

**Real Time Language Translator**

A company ABC has business around the world. They are facing the problem of communication due to differences in language, which is the main communication barrier between staff of the company located in different countries. Effective communication is valuable in any workplace to increase business, so the company wants to develop “Real Time Language Translator” for their workers placed in different countries. The app works as an intermediary bridge for two peoples holding a chat using different languages. The features of the “Real Time Language Translator” are as follows:

**Automatic Language Recognition:** The application should recognize the language of the text / chat automatically.

**Automatic Spell Checker:** The application should detect and highlight the misspelled words before translation.

**Do Not Translate Capability:** Proper names, places or other text that you do not want translated can be marked and never translated. For example, the word “Pakistan” should not be translated.

**Specialized Dictionaries:** To assist with more accurate translation, dictionaries can be selected that contain specific topics.

**Translation Memory or User Dictionaries:** Frequently used phrase or sentence pairs are stored in these dictionaries for future use.

**Application Type:** Web or Desktop application

**Tools & Technologies:** Any modern tool and technology set.

**Supervisor Name:** Nabeel Amjad

**Email ID:** [**nabeel.amjad@vu.edu.pk**](mailto:nabeel.amjad@vu.edu.pk)

**NGO Donation Management System**

Poverty and hunger are the main problem of our country. There are many NGO’s or Organizations that are working to minimize poverty and hunger in society. These organizations take donations for this purpose and arrange fund raising events/ processes so that everyone can donate anything. This project will build an efficient management system for such organizations to manage their resources and donations. The NGO have following features for donation management system:

* The system should have a user registration process and this registration will be for two perspectives
  + For those who want to donate.
  + For those who want to volunteer
* The user can make an online donation.
* The system should send a confirmation email to the donor after successful donation.
* For any event like fundraising program the system should send an invitation to all regular donors automatically.
* User can donate tangible things also.
* The system should allow the donation at organization level also.
* The system can send out reminders for scheduled tasks and appointments.
* The system can import online donations and donor records from the website.
* The system can send batch email to contacts.
* The system can track fundraising campaigns and donations.

For reference:

<http://al-khidmatfoundation.org/>

<https://www.globalgiving.org/>

**Application Type:** Web Application

**Tools & Technologies:** Any modern tool and technology set.

**Supervisor Name:** Rizwana Noor

**Email ID:** [**rizwana.noor@vu.edu.pk**](mailto:rizwana.noor@vu.edu.pk)

**Traffic Signal Management System**

This project is about traffic signal management, which allows managing the traffic on a four way road. The system will consist of four signals on each road. The system will manage the signal timing according to the size of traffic on a road parallel to it. By measuring the traffic lined up on a particular road the signal timings are adjusted to let that particular way clear out and then the next populated one. The system should have following features:

* The system will show the traffic on a road graphically.
* By measuring the traffic lined up on a road signal timings should be adjusted.
* According to the adjusted timing of signal the system should clear out the particular way and then the next route accordingly.
* There should be an emergency override that allows traffic authorities to remotely let go a particular signal in case an ambulance or important vehicle arrives on that way.
* The system should allow smooth and efficient traffic flow across all four ways.
* The system should dynamically schedule the signals.
* The system should enhance the traffic signal performance.
* The system should have the ability to reduce traffic jam.

[Cont. on next page]

The working flow of the system is as follows:

Scan Priority Vehicles

Switch Signal

Schedule Signal

Get Traffic Size

Override Signal for Prioroty

Exit

Check if Traffic

else

For understanding purpose:

<http://www.slideshare.net/chelseaaaaad/traffic-lightppt-1>

<http://www.slideshare.net/rajeevk281/traffic-signalproject>

**Application Type:** Web or Desktop Application

**Tools & Technologies:** Any modern tool and technology set.

**Supervisor Name:** Saqib Javed

**Email ID:** [**saqibjaved@vu.edu.pk**](mailto:saqibjaved@vu.edu.pk)

**Online Parking Booking System**

The mobile Parking is the major issue now-a-days. This project is about reserving parking space online. It overcomes the problem of finding a parking space in commercial areas that unnecessary consumes time. This system will save the user time in search of parking areas and reduce the need of human resources in order to manage parking spaces. Moreover, it will allow the user to reserve the parking space for any day and time be viewing available space. The functional requirements of the system are as follows:

* The system should have a user registration process in order to get login into the system.
* It should allow the users can view various parking areas and select the space to view whether space is available or not.
* The system will show parking areas of different locations. (Consider maximum four parking areas and two locations for this project).
* System should allow the user to book the available space for specific time slots and mark it as “booked”, furthermore booked space will not be available for anyone at that specific time.
* User can cancel the booked space anytime.
* System should mark the booked space with red color and available space with green color.
* Users can book the parking space for their required date and time.
* System should calculate the total cost incurred for parking based on the time of booking.
* On successful booking system should send the message and email as well to the user.
* System has a feedback form, so users can provide feedback into the system [this requirement is optional].
* The system should provide a graphical view of the parking spaces.
* A user can pay online via credit card on the spot and confirm their space.
* The system should generate an online bill for the requested time.

**Application Type:** Web Application

**Tools & Technologies:** Any modern tool and technology set.

**Supervisor Name:** Noor Rahman

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1. This definition is taken from the book “Software Engineering A Practitioner’s Approach (Fourth Edition) by Roger S. Pressman” [↑](#footnote-ref-2)