

Gujarat Technological University

Report: Faculty Development Programs of Software Project subject for MCA semester I and MCA semester II for both Integrated Five Year MCA and regular MCA on 20th December 2013.

Course: Software Project in MCA I and II in IFYMCA and C project and C++ projects in conventional MCA

Preamble

Under the guidance of Hon. Vice Chancellor, Dr. Akshai Aggarwal, C and C++ projects as part of the curriculum were added in the conventional MCA course. When the new MCA 5 Yr Integrated course was announced the deans felt that such a good tradition should be continued in the new course as well. There are quite a few queries and varying perceptions about why such subjects are kept and how such projects can be carried out in conventional MCA as well as in Integrated-MCA courses. In last BOS meeting, it was decided that all these queries and perception can be addressed through an FDP. So, the FDP was quickly announced and held on 20th December 2013 at the GTU Chandkheda Campus. Although 35 faculty members from various MCA institutes affiliated to GTU registered for the FDP, but only 17 of them attended the FDP.

The objectives of the program were as follows:

- Discuss the need for such subjects,
- Understand the need and importance of faculty involvement in the process
- The parameters that constitute good software projects and how to maintain them
- How software projects should be evaluated
- Demonstrate some real good projects
- Learn about simple tricks to make sure projects starts on the fast track and properly monitored
- How industry involvement helps

Session 1 : 10:30 am to 12:00 noon

Speaker : Dr. Sanjay Kumar Vij, Dean (Academics) at ITM Universe and Dean for Zones 3 & 5, GTU MCA

Topic : Potential of projects in getting good jobs and career growth

The objective of the session was to involve the participants in the process of evolving the importance of projects in MCA course(s). The mode of presentation was to raise leading questions and finding answers collectively. Questions and thoughts discussed during the session included (i) Why project?, (ii) Characteristics of a project, (iii) Rich role of project even in enhancing conceptual clarity of various concepts, (iv) Believing in students capabilities to take up challenging projects, (v) Project definitions should have a potential to create an excitement amongst students and teachers, (vi) Teachers involvement should convey and reinforce the importance of (and excitement derived from) the project. Project

planning task should be taken up by the faculty members during initial semesters and progressively pass on to students in later semesters

It was repeatedly discussed that a challenging project (assignment) has a high potential of creating excitement. Secondly, unless teachers feel excited about the project, it would not be fair to expect students to be excited for projects. It was also suggested that teachers should take the ownership of projects so that the next batch of students can build further on the projects which their predecessors had done in the past. This process will help in the following ways:

- It will enable to build a complex project in stages
 - The problem of getting a large number of new projects every year will be addressed
- Dr. Vij also gave a few examples of highly successful students, who took projects seriously.

Session 2 : 1:00 noon to 2:30 pm

Speaker : Prof. Bhushan Trivedi, Ph. D. , Director, GLS Institute of Computer Technology and Dean for Zone 1, GTU MCA

Topic : How one can carry out C and C++ projects.

There are many myths circulating about C and C++ projects. Some believe that it is better if a C project is carried out after a student has learned C and similar views are held for C++ projects as well. Some believe that the students are not capable to do a project. Some teachers have serious objection to giving students such difficult assignments. This part of the FDP throws light on the process of carrying out C and C++ projects and answers such concerns.

Prof. Trivedi has demonstrated, through examples and a few effective teaching methods, the following:

1. How one can decide a topic for C or C++ project
2. How to initiate the process
3. When students are not aware of language features useful for the project, how to occupy them in doing many activities related to project for example design interfaces, processing, reports and their formats
4. How to get interesting projects and how to make existing projects interesting
5. Different types of projects, for example data centric like mobile phone selection, computer intensive like timetable preparation, with many permutations and combinations like AMTS route selection and so on
6. How to confine a project to a given deadline

Many of the answers of above queries were demonstrated using active learning and few other effective teaching methods. That enabled participants to find the answers themselves and be confident that they are now better equipped to design and model better projects in C and C++.

Prof. Trivedi summarized his talk by providing some examples of students getting motivated and progressed due to a good C or C++ project guided by him.

Session 3 : **3:00 pm to 4:30 pm**
Speaker : **Maxwell Christian, Assistant professor GLS Institute of Computer Technology.**
Topic : **Demonstrating some good C and C++ projects**

Maxwell Christian has nine years of experience in guiding students for C and C++. He has learned many tricks to get a good project done. He has also learned how a good teacher can transform a non-interested student into interested students by providing them challenging projects.

He demonstrated the following to help participant understand the process:

1. What a good project looks like. He ran a few good student projects to show how they run and execute.
2. He has shown the source code of those projects. He also has shown inferior and better versions of code showing what a standard code should look like
3. He has shown top down designing and programming process. He demonstrated how one can provide
 - a. Proper naming conventions
 - b. Reduce size of a function
 - c. Make the function more readable
 - d. Decide type and number of arguments for better readability and processing
 - e. Club and how to separate parts of code for more readability
4. He showed how he has developed a flexible menu so that for all menu driven requirements of the project the single function can be called to serve the purpose
5. He also showed how code repetition can be avoided by writing clever set of functions.

Session 4 : **4:30 pm to 5:00 pm**
Topic : **Open discussion**

The participants asked a few questions about other details about the syllabus and also why subjects like dot net are not part of the syllabus. The response that we do not recommend the products from specific companies in the syllabus but using CEC for teaching students what the institute feels important was largely welcome by participants. The discussion about other components of the syllabus also initiated by some of the participants.

Program ended after thanking all the speakers and participants for their active participation in FDP.