

How to Conduct the Term Project, Prepare for the Presentation and Paper Writing

Conducting a Research Work

- **Why do you do a research ?**
 - It can show you what's most likely to address to solve your problem successfully
 - It gives you new knowledge to help you make your case and confirms what you were already know
 - It can provide you with solutions and examples for your underlined problem that you can use or compare with
 - It makes you an the expert on the issue you are working on

• **How do you do research ?**

- Split the tasks among you and work cooperatively with your group members. Show the spirit of a team work
- Try to find out in the literature if someone's already done the research you're planning “literature review”
- Learn the basics about your problem
- Know what you're going to use the information for
- Be skeptical about your sources, and check all your facts twice
- Be persistent
- Ask for help and guidance

What Steps you Should Follow to Do a Research

- **Step 1:**

Decide on the problem you wish to address. Make sure that the focus of your work interests you otherwise you may find it tedious and unbearable

- **Step 2:**

Read the relevant papers that pertain to your area of focus. It is important to be aware of the latest research efforts to ensure that your work is valid. Try to make your solution new or at least you can implement similar solutions already presented in the literature

- **Step 3**

Plan an experiment or test. Think about all required elements for the experiment to be valid

- **Step 4:**

Perform the experiment (implementation) to test your algorithm or designed circuit. It can be a software simulation or a hardware implementation

- **Step 5:**

Compare your results to published papers. Use this comparison to write conclusions about your experiment and testing. Discuss if any discrepancies between your findings and previously published results. Be prepared to explain and defend discrepancies in your results and the merit of your solution

- **Step 6:**

Prepare a presentation and write a detailed paper about the research you conducted in which you display your results and conclusion. Your writing style should be very technical and detail oriented and in the same time should be clear and easy to understand

The Literature Review and its Importance

- The literature review is an overview and a critical evaluation of other researchers' work relating to your research topic or research problem
- It is a crucial component in your project as it allows you to show that you are familiar with this topic and other relevant solutions proposed by other researchers
- It helps you to show the importance of your decision why choosing the topic and the approach you used to address the problem and how to solve it

The Presentation Major Contents

- Introduction
- Problem definition
- Brief literature review of related work
- Methodology used to solve the problem
- Results (diagrams/graphs/tables)
- Limitations and challenges you encountered
- Conclusion
- References

The Presentation Main Components

- Introduction: introduce the big picture of your work based on what, why, and how, i.e.,
 - a statement of the problem being solved (what)
 - motivation on what makes you address this problem (why)
 - methodology adopted for the solution (how)
- Details of solution
- Results demonstrating/proving your solution
- Critic of Work (compare to related work)
- Conclusions & Future Directions for this work

What you should highlight most

- The methodology you used
- Demonstrate your findings as H/W or S/W
- Comparison of results you obtained with others work
- Discuss your contribution and what you have achieved over what is in the literature
- Give suggestions for future work

Preparing the Slides

- Organize your slides like an outline by selecting few main points, with sub points under each one. Your slides are a guide for your talk not an exact copy of your talk
- Summarize the points that you want to talk about. If there are particular details that you want to discuss, outline them on the slide and keep written notes for you to refer to in your talk
- Use figures, diagrams, tables charts and graphs as much as you can to explain your implementation and results

Writing the slides

- Use an interesting and serious format for your slides
- Select a proper font size and style for the titles, subtitles, figures, tables
- Maintain such format for all the slides
- Number of slides should depend on the time allotted for you, average one slide per minute
- Citation should be considered and appear in relevance and sequence

Preparing for the presentation

- Divide the slides as per each group member
- Select the appropriate member for the introduction and the 1st part
- Any member should be knowledgeable of all the details and is ready to help in answering questions
- All group members should participate effectively and positively in the demonstration
- During the presentation each member should show team work spirit
- During the presentation time each member should be enthusiastic and show friendly attitude to audience in order to conduct a lively and interesting presentation

Advice for the presentation day

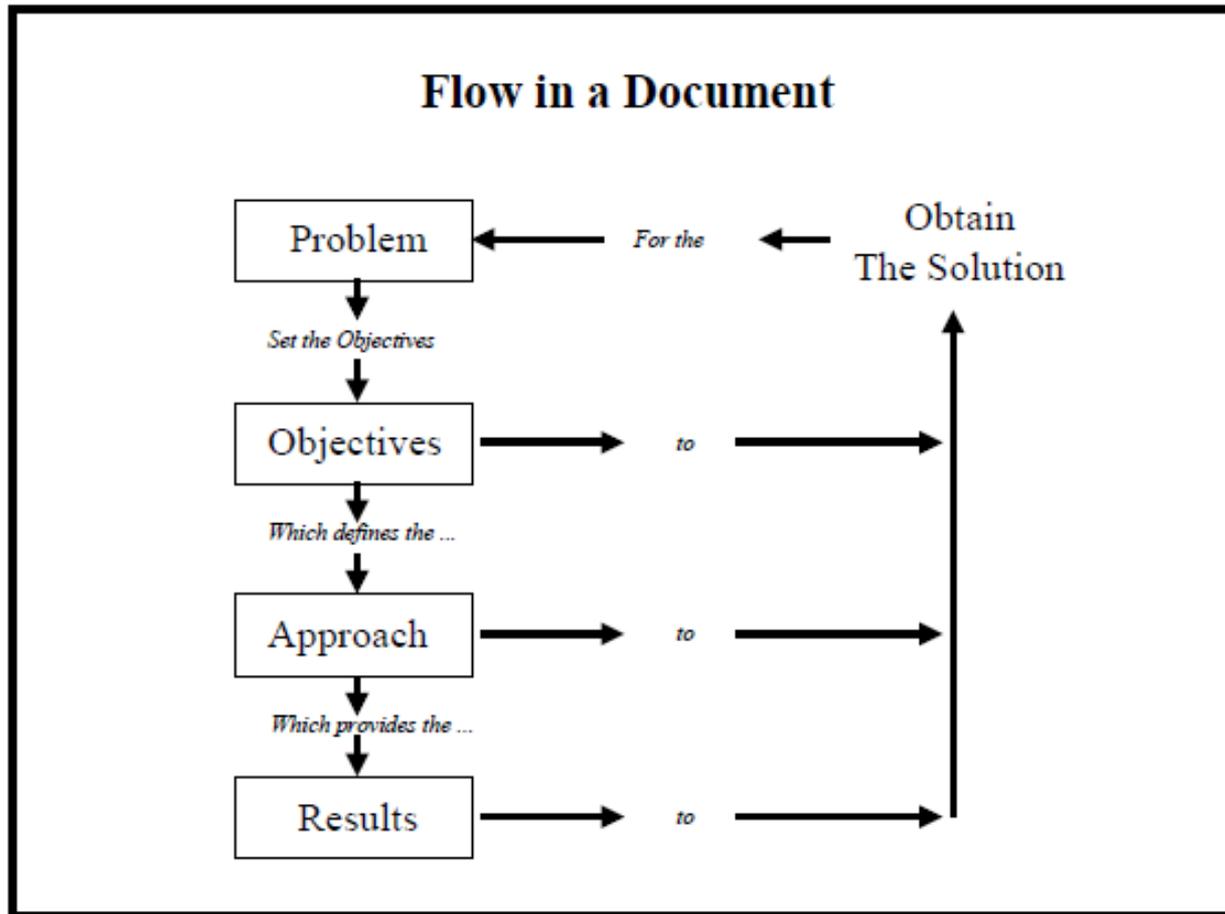
- Prepare well, and do a mock presentation it will give you confidence and let your colleagues give feedback about your body language and performance
- Calculate time well in advance, you must be done within the time allotted to you
- Watch your audience sentiment and perform accordingly. Show seriousness but don't be dry and try to be humorous at some points
- Bring all the necessary documents with you

- Don't invent, exaggerate, or give wrong and misleading information or results about your work
- When you are asked, if you don't know, admit it and don't challenge
- Show as much as you can evidence, proof, reference whenever and wherever required or asked
- Be always nice, friendly and cool and don't be irritated to critics or others views

Writing the Project Paper

- FOLLOW THE IEEE GUIDELINES AND ESSENTIAL FORMAT (SEE EXAMPLE)
- Abstract
- Introduction
- Theory
- Theoretical and experimental review of the solution
- Results and discussion
- Conclusion
- References

Paper Writing Strategy



Tips for Good Writing

- Use present tense for discussing the literature, presenting theoretical concepts, or methods you used, etc.
- Use past tense is for recounting events, results found, etc
- Use future tense for describing how you will accomplish your research, etc
- Write clearly and objectively in the third person and avoid exaggeration or using big words unnecessarily

Be Aware of Plagiarism

- Don't copy and paste other ideas or statements
- You should either
 - Produce statements all on your own
 - quote others published statement and use a proper reference citation
 - borrow a published statement and reframe it in with your own thoughts and generate a new statement that is different than the original statement

Where to seek help in writing a paper in IEEE format

- **IEEE author tool kit at**

<http://www.ieee.org/web/publications/authors/transjnl/index.html>