RESEARCH METHODOLOGIES & IPR

M.Tech-III Semester (R18)

Computer Science and Engineering

Course Code: BSCB31

Academic year 2019-20

Presentation
for
MODULE-I

INTRODUCTION

INTRODUCTION

Meaning

Research is an endeavour to discover answers to intellectual and practical problems through the application of scientific method.

"Research is a systematized effort to gain new knowledge".

-Redman and Mory.

Research is the systematic process of collecting and analyzing information (data) in order to increase our understanding of the phenomenon about which we are concerned or interested.

Objectives of Research

- The purpose of research is to discover answers through the application of scientific procedures.
- The objectives are:

- To gain familiarity with a phenomenon or to achieve new insights into it – Exploratory or Formulative Research.

- To portray accurately the characteristics of a particular individual, situation or a group – Descriptive Research.

- To determine the frequency with which something occurs or with which it is associated with something else – Diagnostic Research.

- To test a hypothesis of a causal relationship between variables – Hypothesis-Testing Research

Characteristics of Research

- Research is directed towards the solution of a problem.
- Research is based upon observable experience or empirical evidence.
- Research demands accurate observation and description.
- Research involves gathering new data from primary sources or using existing data for a new purpose.
- Research activities are characterized by carefully designed procedures.
- Research requires expertise i.e., skill necessary to carryout investigation,

Characteristics of Research

- Research is objective and logical – applying every possible test to validate the data collected and conclusions reached.
- Research involves the quest for answers to unsolved problems.
- Research requires courage.
- Research is characterized by patient and unhurried activity.
- Research is carefully recorded and report

Criteria Of a Good Research

- Purpose clearly defined.
- Research process detailed.
- Research design thoroughly planned.
- High ethical standards applied.
- Limitations frankly revealed.
- Adequate analysis for decision maker’s needs
- Findings presented unambiguously.
- Conclusions justified.

Criteria Of a Good Research

QUALITIES OF A GOOD RESEARCH

- Systematic
- Logical
- Empirical
- Replicable

NEED FOR RESEARCH

Exploration

Describe

Diagnose

Hypothesis

Inductions and Deductions

Problems In Research

- Not similar to science
- Uncontrollable variables
- Human tendencies
- Time and money
- Lack of computerization
- Lack of scientific training in the methodology of Research
- Insufficient interaction between university research departments and business establishments

Problems In Research

- Lack of confidence on the part of business units to give information
- Lack of code of conduct
- Difficulty of adequate and timely secretarial assistance
- Poor library management and functioning
- Difficulty of timely availability of published data.
- Ignorance
- Research for the sake of research-limited practical utility though they may use high sounding business jargon.

Criteria Of a Good Research Problem

- Clear and Unambiguous
- Empirical
- Verifiable
- Interesting
- Novel and Original
- Availability of Guidance

The Data collection technique

The data collection technique is different for different types of research design. There are predominantly two types of data:

(i) the primary data and

(ii) the secondary data.

Primary data is one a researcher collects for a specific purpose of investigating the research problem at hand.

Secondary data are ones that have not been collected for the immediate study at hand but for purposes other than the problem at hand.

The Data collection technique

Both types of data offer specific advantages and disadvantages.

a.) Secondary data offer cost and time economies to the researcher as they already exist in various forms in the company or in the market.

b.) It is feasible for a firm to collect.

c.) Since they are collected for some other purposes, it may sometimes not fit perfectly into the problem defined. d) The objectives, nature and methods used to collect the secondary data may not be appropriate to the present situation.

The Data collection technique

- A researcher's important function is the appropriate interpretation of different types of statistical data with the help of his tools.
- The preliminary statistical work consists of collection, classification, tabulation, presentation and analysis of data.
- The most important part of the statistical work consists in the proper use of the statistical tools in the interpretation of data.
- The most commonly used tools are 'Mean, Median, Mode; Geometric Mean, Measures of Dispersion such as Range; Mean Deviation, Standard Deviation and also other measures such as Coefficient of Correlation, Index Numbers etc.

The Data collection technique

- It is necessary to note that technical interpretation of data has to be combined with a high degree of sound judgement, statistical experience, skill and accuracy. After all figures do not lie, they are innocent. But figures obtained haphazardly, compiled.
- unscientifically and analyzed incompetently would lead to general distrust in statistics by the citizens. It should be understood that "statistical methods are the most dangerous tools in the hands of an expert".

Data Editing and Coding

- Authenticity and relevance of a research investigation is based on the assurance of error-free qualitative reliability of the collected data. Data processing has to be carried out in an appropriate manner.
- Processing comprises the task of editing, coding classification and tabulation. In spite of a careful collection by a researcher, there may be a possibility for errors of omission and commission arising and it is for this purpose that the process of editing becomes necessary.

Data Analysis

- Data pertaining to economic, psychological sociological or managerial phenomena necessarily requires appropriate interpretation through the use of analytical procedures based on inductive or deductive logical reasoning.
- Further, proper statistical methods will have to applied for scientific analysis. Depending upon the nature of the data which may be nominal, ordinal, interval or ratio level, a researcher precision in the use of 'Parametric' or 'Non-parametric' tests of hypothesis.

Data Analysis

- It may be noted that generally the nominal level data is weak whereas the ratio level data is comparatively strong
- Statistical analysis can be classified as

(i) descriptive

(ii) inferential.

Data Analysis

- Financial ratio analysis is a study of ratios between various items or groups of items in financial statements. Financial ratios can be broadly classified into the following categories:

1. Liquidity ratios
2. Leverage ratios
3. Turnover ratios
4. Profitability ratios
5. Valuation ratios

Liquidity ratios

- Liquidity Ratios Liquidity refers to the ability of a firm to meet its obligations in the short run, usually one year. Liquidity ratios are generally based on the relationship between current assets and current liabilities.
- The important liquidity ratios are:
- Current Ratio: Current assets include cash, current investments, debtors, inventories (stocks), loans and advances, and prepaid expenses. Current liabilities represent liabilities that are expected to mature in the next twelve months. These comprise (i) loans, secured or unsecured, that are due in the next twelve months and (ii) current liabilities and provisions. The current ratio thus measures the ability of the firm to meet its current liabilities.

Liquidity ratios

- Acid-Test Ratio (also called the quick ratio): Quick assets are defined as current assets excluding inventories. It is a fairly stringent measure of liquidity. It is based on those current assets, which are highly liquid. Inventories are excluded because they are deemed to be the least liquid component of the current assets.
- Cash Ratio: Because cash and bank balance and short term marketable securities are the most liquid assets of a firm

Liquidity ratios

- Financial leverage refers to the use of debt finance. While debt capital is a cheaper source of finance, it is also a riskier source of finance. Leverage ratios help in accessing the risk arising from the use of debt capital. Two types of ratios are commonly used to analyze financial leverage.

Turnover ratios

- Turnover ratios also referred to as activity ratios or assets management ratios, measure how efficiently the assets are employed by a firm. The important turnover ratios are:
- Inventory Turnover: It measures how fast the inventory is moving through the firm and generating sales. It reflects the efficiency of inventory management.
- Debtors' Turnover: It shows how many times accounts receivable (debtors) turnover during the year.

Turnover ratios

- Average Collection Period: It represents the number of days' worth of credit sales that is locked in debtors.
- Fixed Assets Turnover: This ratio measures sales per rupee of investment in fixed assets
- This ratio is supposed to measure the efficiency with which fixed assets are employed.
- Total Assets Turnover: This ratio measures how efficiently assets are employed overall

Profitability Ratios

They reflect the final result of business operations. There are two types of profitability ratios:

(i) Profit margin ratios

(ii) Rate of return ratios

The important profit margin ratios are:

(a) Gross Profit Margin Ratio: The ratio shows the margin left after meeting manufacturing costs. It measures the efficiency of the production as well as pricing

(b) Net Profit Margin Ratio: This ratio shows the earnings left for shareholders as a percentage of net sales.

Profitability Ratios

- Return on Total Assets: It is measure of how efficiently the capital is employed. To ensure internal consistency, the following variant of return on total assets may be employed:

(1) Earning Power: It is a measure of operating profitability.

(2) Return on Equity: it is a measure of great interest to equity shareholder. The numerator of this ratio is equal to profit after tax less preference dividends. The denominator includes all contributions made by equity shareholders. It is also called the return on net

Valuation Ratios

Valuation ratios indicate how the equity stock of the company is assessed in the capital market:

(a) Price-earnings Ratio: The market price per share may be the price prevailing on a certain day or the average price over a period of time. The earnings per share are simply: profit after tax less preference divided by the number of outstanding equity shares.

(b) (b) Yield: It is a measure of the rate of return earned by shareholders.

(c) (c) Market Value to Book Value Ratio

(d) (d) „q" Ratio: Proposed by James Tobin, this ratio resembles the market value to book value ratio. However, there are two key differences:

Presentation
for
MODULE-II

RESEARCH ETHICS

Effective literature studies approaches

- Introduce the literature review by pointing out the major research topic that will be discussed
- Identify the broad problem area but don't be too global (for example, discussing the history of education when the topic is on specific instructional strategy)
- Discuss the general importance of your topic for those in your field

Effective literature studies approaches

- Don’t attempt to cover everything written on your topic
- You will need to pick out the research most relevant to the topic you are studying
- You will use the studies in your literature review as “evidence” that your research question is an important one
- It is important to cover research relevant to all the variables being studied.

Effective literature studies approaches

- Research that explains the relationship between these variables is a top priority.
- You will need to plan how you will structure your literature review and write from this plan.

Effective literature studies approaches

Topical Order—organize by main topics or issues; emphasize the relationship of the issues to the main “problem”

Chronological Order—organize the literature by the dates the research was published

Problem-Cause-Solution Order—Organize the review so that it moves from the problem to the solution

Effective literature studies approaches

General-to-Specific Order—(Also called the funnel approach)

Examine broad-based research first and then focus on specific studies that relate to the topic

Specific-to-General Order—Try to make discuss specific research studies so conclusions can be drawn

- After reviewing the literature, summarize what has been done, what has not been done, and what needs to be done
- Remember you are arguing your point of why your study is important!

Effective literature studies approaches

- Then pose a formal research question or state a hypothesis—be sure this is clearly linked to your literature review
- All sources cited in the literature review should be listed in the references
- To sum, a literature review should include introduction, summary and critique of journal articles, justifications for your research project and the hypothesis for your research project

Effective literature studies approaches

- Review isn’t logically organized
- Review isn’t focused on most important facets of the study
- Review doesn’t relate literature to the study
- Too few references or outdated references cited
- Review isn’t written in author’s own words
- Review reads like a series of disjointed summaries
- Review doesn’t argue a point
- Recent references are omitted

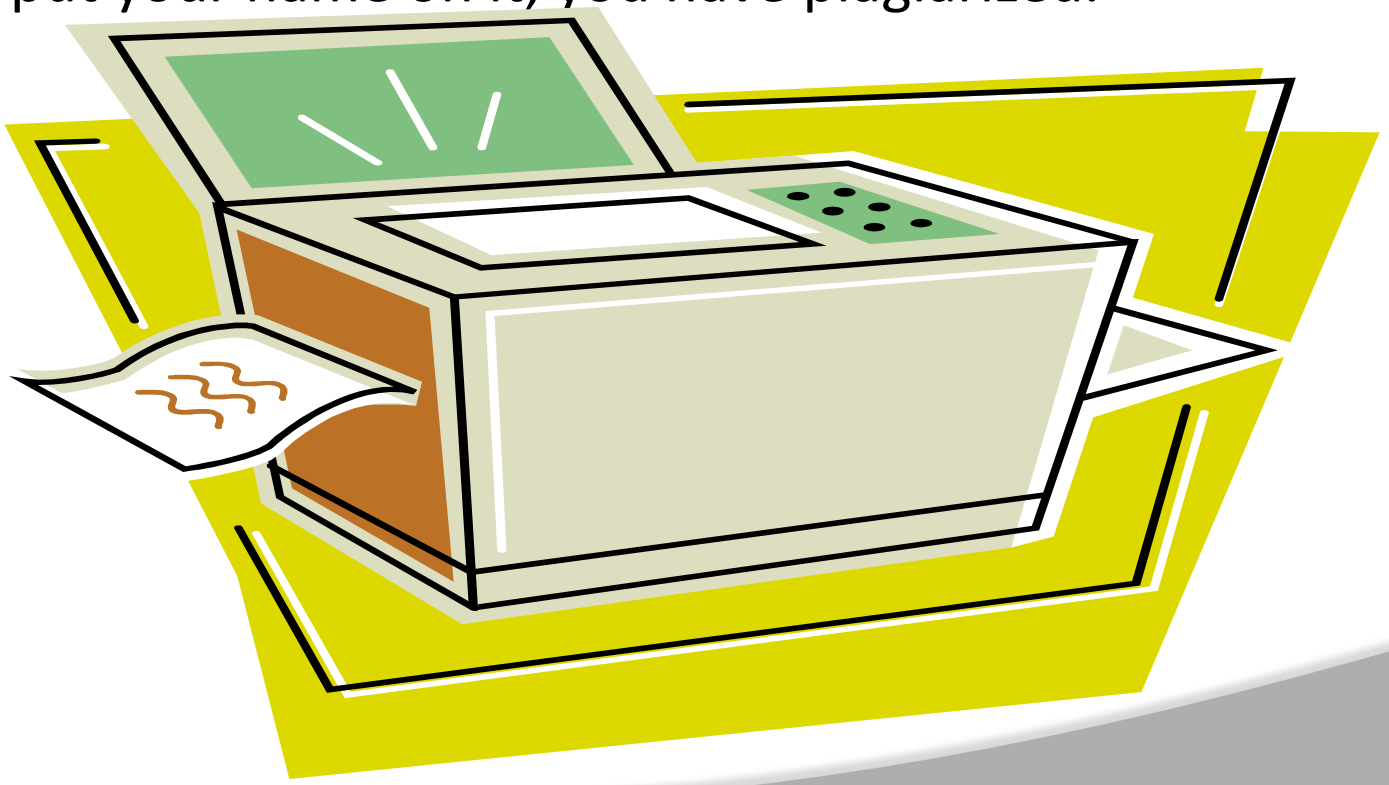
Analysis Plagiarism

Plagiarism includes :

1. Using another writer's words without proper citation
2. Using another writer's ideas without proper citation
3. Citing a source but reproducing the exact word without quotation marks
4. Borrowing the structure of another author's phrases/sentences without giving the source
5. Borrowing all or part of another student's paper

Types of Plagiarism

1.) **Copying**: The most well-known and, sadly, the most common type of plagiarism is the simplest: copying. If you copy someone else's work and put your name on it, you have plagiarized.



Analysis Plagiarism

- This one is pretty straightforward. If a writer copies, word for word, the text from Dr. Zimbardo's book and does not acknowledge in any way that it was Dr. Zimbardo's work, the writer has committed plagiarism.

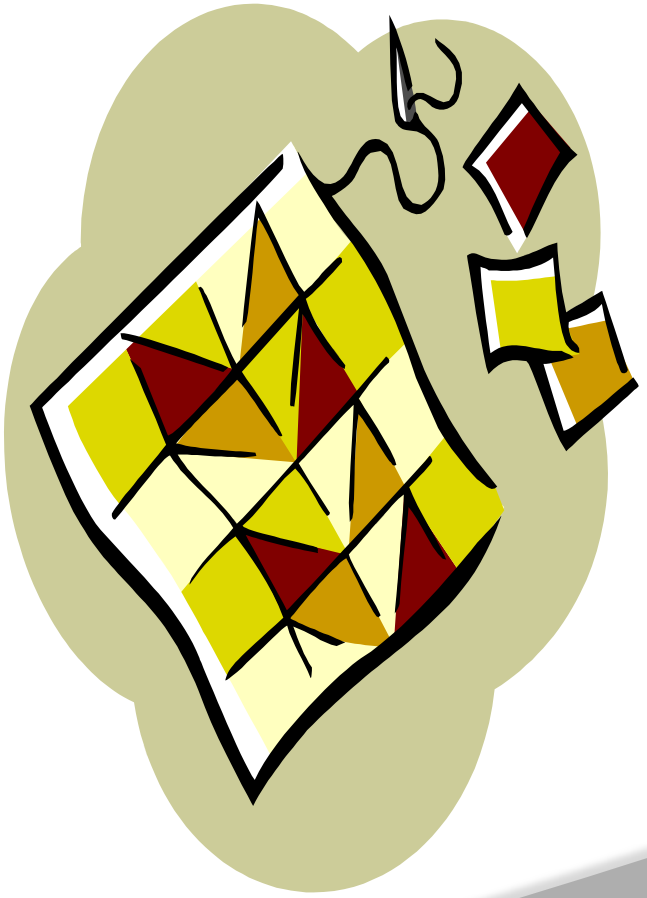
Analysis Plagiarism

Patchwork Plagiarism:

copying and is perhaps the second most common type of plagiarism: patchwork plagiarism. This occurs when the plagiarizer borrows the "phrases and clauses from the original source and weaves them into his own writing" without putting the phrases in quotation marks or citing the author

Analysis Plagiarism

- Now, had the "author" of this passage put the colored phrases in quotation marks and added a citation after the quotation,
- like (Zimbardo 62), the "author" would have been safe. Without the quotation marks and the proper citation, the "author" has committed plagiarism.



Analysis Plagiarism

Paraphrasing Plagiarism:

- The third type of plagiarism is called paraphrasing plagiarism. This occurs when the plagiarizer paraphrases or summarizes another's work without citing the source. Even changing the words a little or using synonyms but retaining the author's essential thoughts, sentence structure, and/or style without citing the source is still considered plagiarism.

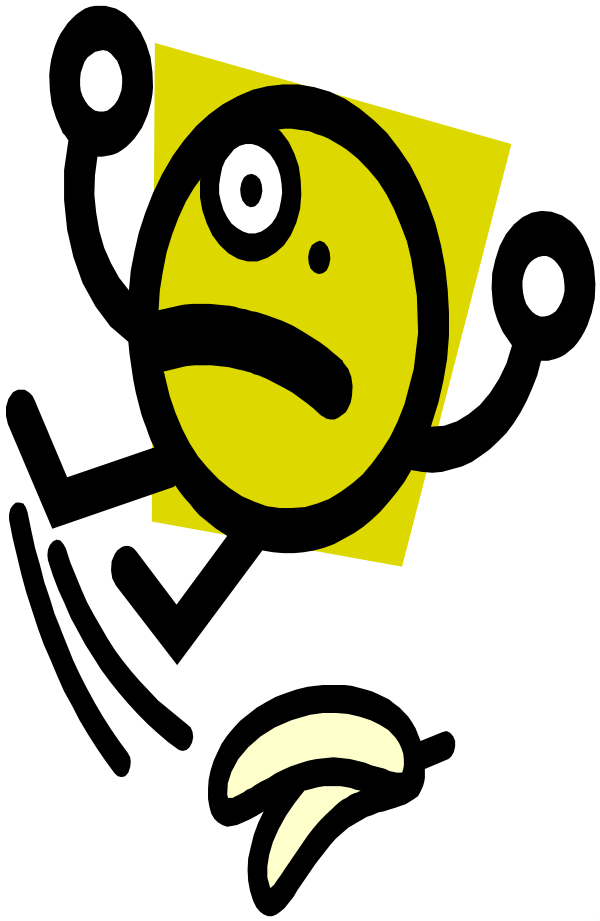
Analysis Plagiarism

- Now, had the "author" of this paragraph used footnotes or parenthetical citations to acknowledge Dr. Zimbardo's work, he or she would have been in the clear. However, since the "author" acts like these ideas are his or her own, and does not acknowledge Dr. Zimbardo, it's plagiarism.

Analysis Plagiarism

Unintentional:

- The fourth type of plagiarism is called unintentional plagiarism -- it occurs when the writer incorrectly quotes and/or incorrectly cites a source they are using. How is this plagiarism, if the author didn't mean to do it?



Analysis Plagiarism

- If a writer has incorrectly quoted or incorrectly cited a source, it could be misconstrued as dishonesty on the writer's part. The dishonest usage of another's work is most often considered plagiarism. Therefore, the incorrect usage of another's work, whether it's intentional or not, could be taken for "real" plagiarism.

Avoiding Plagiarism

- Avoiding plagiarism is quite simple. The best method for avoiding it is to simply be honest; when you've used a source in your paper, give credit where it's due. Acknowledge the author of the original work you've used.

Analysis Plagiarism

- Another way to avoid plagiarism is to use your own work as often as possible. Quoting and citing sources is usually required and inevitable when doing research -- that's how you "back up" your own work. But using someone else's work excessively can be construed as plagiarism.

- Another way to it is to quote and/or cite your sources properly.

Research ethics

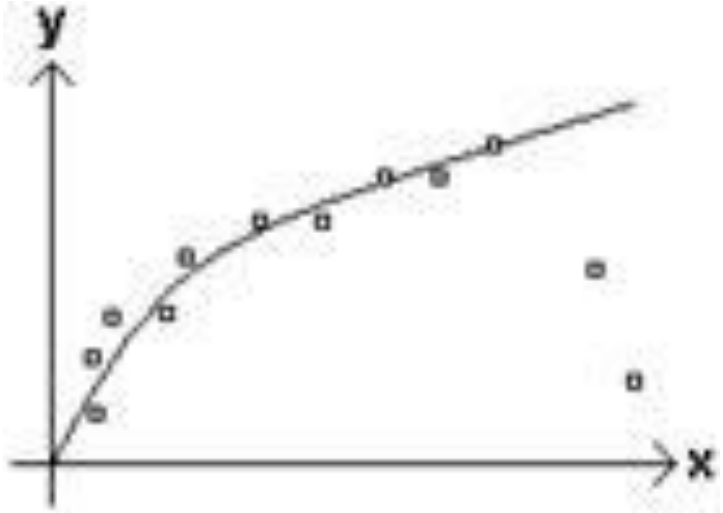
- Research ethics concerns the responsibility of researchers to be honest and respectful to all individuals who are affected by their research studies or their reports of the studies' results.
- Involves the application of fundamental ethical principles to planning, conducting & publishing of

Guiding principles

- Autonomy and respect
- Beneficence
- Non-maleficence
- Justice (free from exploitation)
- Scientific validity
- Honesty

Guiding principles(example)

- Identify ethical issues in the following scenarios
- Two graduate students have made some measurements on a new material. The data points are as shown. To prove their hypothesis the results should lie on the curve shown. The two students considered omitting the two data points which were off the theoretical curve.



Guiding principles(example)

- Unethical as it would amount to falsification of data
- Should include outliers and give probable reasons or find out statistically acceptable ways of trimming outliers.
- research on the awareness of diabetic diet in medical clinic participants. Their research was recognized as the best undergraduate research and later they submitted the same research paper to two different journals to see which journal publishes it first.

Guiding principles(example)

Group-2:

- A group of medical students conducted a research on the awareness of diabetic diet in medical clinic participants. Their research was recognized as the best undergraduate research and later they submitted the same research paper to two different journals to see which journal publishes it first.

Guiding principles(example)

Group-3:

- Students are required to prepare a research proposal during their undergraduate program. Nimal developed the idea for his project and discussed with a friend. Several months later, he found that his idea had been submitted as a research proposal by his friend without his knowledge.

Guiding principles(example)

Group-4:

- Four friends decide to work together on a research project during the vacation. One of them went abroad during the vacation and did not contribute to the research. The friends include all 4 names in a presentation made at a scientific congress.

Guiding principles(example)

- Unethical as only those who contributed intellectually should be cited as authors

- Those who contribute in other ways may be acknowledged

Guiding principles(example)

Group-6:

- A group of undergraduate students planned a research project on the detection of fetal abnormalities in the second trimester, by ultrasound scanning. They collected data from the scan room without informing the mothers
- Unethical as informed consent was not taken
- Should have informed mothers of their intent even though there is no particular advantage/disadvantage to the mother in doing

Presentation
for
MODULE-III

RESEARCH PROPOSAL

Effective technical

- Good Style
- Building goodwill
- Half Truths About Writing
- Better Style
- 11 Ways to Build Better Style
- Draft Testing
- Organizational Preferences
- Recommended Resources

Good Technical Writing

- Varies by audience; it considers the reader and builds goodwill
- Maintains consistent and “good” style
- Is, above almost all, clear

- Good technical writing style also
- Attends to visual impact
- Persuades

Good Technical Writing

You-Attitude" is a style of writing that

- Adopts the audience's point of view
- Emphasizes what the audience wants to know
- Protects the audience's ego (e.g. does not use "you" to make accusations)

Good Technical Writing

Build Goodwill: Avoid Bias

Use nonracist and nonagist language

- Give someone's race or age only if it is relevant to your communication.
- Refer to a group by the term it prefers.
- Avoid terms that suggest competent members of a certain group are unusual.

Good Technical Writing

Half-Truths about Style

- Write as you talk
- Never use *"I"*
- Never begin sentence with *and* or *but*
- Never end sentence with preposition
- Big words impress people

Good Technical Writing

Write as You Talk: *Yes . . . But:*

Yes

Do it for first draft

Read draft aloud to test

But

Expect awkward, repetitive, badly organized prose

Plan to revise and edit

Good Technical Writing

Never Use *I*: *Yes . . . But:*

Yes

I can make writing seem self-centered

I can make ideas seem tentative

I should never appear in a resume, but it's fine to use it in a cover letter.

But

Use *I* to tell what you did, said, saw—it's smoother

Good Technical Writing

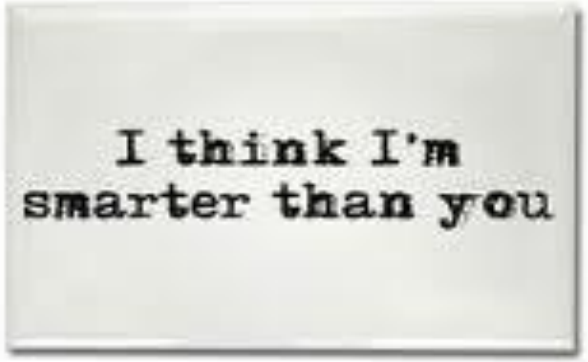
Never Begin Sentence with *And* or *But:*

- *And* may make idea seem like afterthought
- *And* gives effect of natural speech
- *But* serves as a signpost, signals a shift
- *But* can make writing smoother

Good Technical Writing

Big Words Impress People: *Yes . . . But:*

- ***Yes***
  - You may want to show formality or technical expertise
- ***But***
  - Big words may be
  - misunderstood
  - Misused words
  - Big words distance you from rea
  - make you look foolish



Good Technical Writing

Ways to Build Better Style:

Use the following tips as you:

- Draft
- Write and revise
- Draft, revise, and form paragraphs

Good Technical Writing

Test drafts on actual audiences

- How long does it take to find information they need?
- Do they make mistakes using it?
- Do they think draft is easy to use?

Good Technical Writing

Writing Style Preferences:

- Good writing varies by organization, and, of course, from class to class and instructor to instructor
- Use the style your audience prefers

Paper Developing a Research Proposal

- Steps of Report Writing The usual steps involved in writing a report are:
- **Logical analysis of the subject matter**: The first step of report writing is to develop a subject, either logically or chronologically. The logical development is made on the basis of mental connections and associations between the one thing and another by means of analysis. Logical treatment often consists in developing the material from the simple possible to the most complex structures.

Paper Developing a Research Proposal

Preparation of the final outline :

After developing the subject, the final outline must be prepared to make a framework. "Outlines are the framework upon which long written works are constructed. They are an aid to the logical organisation of the material and a reminder of the points to be stressed in the report“.

Paper Developing a Research Proposal

Preparation of the rough draft :

- Preparation of the rough draft is of utmost importance as the researcher is now ready to start writing what he has done in the context of his research study.
- The rough draft should be the last of several versions, each an improvement of the preceding one. The researcher should try to start writing the first version of the draft immediately after completing the outline while the ideas developed there are still fresh in his mind.

Paper Developing a Research Proposal

Rewriting and polishing of the rough draft:

- This is the most difficult part of all formal writing which requires more time than the writing of the rough draft. A careful revision makes the difference between a mediocre and a good piece of writing.

- While rewriting and polishing, the researcher should check the report for weaknesses in logical development or presentation.

- Then review this version-but only for its technical content. Sometimes writing the first version will reveal some unexpected problems that require a change in the outline

Paper Developing a Research Proposal

Preparation of the final reference/bibliography:

- The next step is to prepare the final reference or bibliography which is the list of sources either referred to or taken help while writing the report.
- There are no absolute rules in referencing but bibliography should follow a logical arrangement in alphabetical order and may be divided into two parts; the first part may contain the names of books and pamphlets, and the second part may contain the names of magazine and newspaper articles

Format of research proposal

Writing the final draft:

- The last step in report writing is writing the final draft which is done in a concise and objective style using simple language. Vague expressions such as "it seems", "there may be", and the like are avoided. Abstract terminology and technical jargon are also avoided to facilitate easy understanding by any reader.
- Illustrations and examples based on common experiences must be incorporated in the final draft as they happen to be most effective in communicating the research findings to others.
- A research report should not be dull. It should enthuse people and maintain interest and must show originality.

Format of research proposal

Mechanics of Report Writing:

- Definite and set rules should be followed in the actual preparation of the research report. Once techniques are finally decided, they should be scrupulously adhered to with no deviation.
- The following points deserve mention so far as the mechanics of writing a report are concerned.

Size and physical design:

- The manuscript should be written on unruled paper 8½″ x 11″ in size. If it is to be written by hand, black or blue-black ink should be used. A margin of at least one and one-half inches should be allowed at the left hand and at least half an inch at the right hand of the paper.

Format of research proposal

- There should also be one-inch margins, top and bottom. The paper should be neat and legible. If the manuscript is to be typed, then all typing should be double-spaced on one side of the page only, except for the insertion of long quotations.

presentation and assessment by a review committee

Procedure:

- Various steps in writing the report should be strictly adhered to. **Layout**: Keeping in view the objective and nature of the problem, the layout of the report should be thought of and decided and accordingly adopted.

Treatment of quotations:

- Quotations should be placed in quotation marks and double spaced, forming an immediate part of the text. But if the quotation is of a considerable length (more than four or five type written lines) then it should be single-spaced and indented at least half an inch to the right of the normal text margin: An index should be given at the end of the report to act as a good guide to the reader.

Presentation and assessment by a review committee

Footnotes:

- Footnotes are placed at the bottom of the page on which the reference or quotation which they identify or supplement ends.
- They should be numbered consecutively and always typed in single space though they are divided from one another by double space.
- The first footnote reference to any given work should be complete in its documentation, giving all the essential facts about the edition used.

presentation and assessment by a review committee

Punctuations and abbreviations:

- Certain English and Latin abbreviations are quite often used in bibliographies and footnotes to eliminate tedious repetition.

Use of statistics, graphs and charts:

- Statistics are usually presented in the form of tables, charts, bars, line-graphs and pictograms in a neat and attractive manner.

The final draft:

- The final draft should be prepared after careful revising and rewriting of the rough draft.

Bibliography: Bibliography should be prepared and appended to the research report. Preparation of the index

How to write report

- Writing a report is conditioned by various factors. A good research report is one which communicates with the readers efficiently and effectively.
- The researcher, therefore, should keep in mind the following precautions while writing the report:
- A report should not be written in haste.
- Language and method of presentation should be suitable to the level of intelligence and knowledge of the readers.

How to write report

- Abstract terminology and technical jargon should be avoided.
- Reports vary in length.
- It should be long enough to cover the subject but short enough to maintain interest.
- A report should not be dull.
- Charts, graphs and statistical tables should be used to make it attractive and to provide ready availability of the findings

How to write report

- The layout should be in accordance with the objective of the research problem.
- The report should be free from grammatical mistakes. All the composite parts must be presented in proper order.
- A report should show originality and must contribute to the solution of a problem.
- It is usually considered desirable if the report makes a forecast of the probable future of the subject concerned and indicates the kind of research which still needs to be done in that particular field

How to write report

- **Conclusion** :
- The steps and mechanics of report writing are guidelines to produce a report which can be understood by the readers.
- They should be adhered to in order to avoid communication gap between the reader and the writer.
- Effective communication is possible only when the report is prepared with caution. Skill combined with caution will help a researcher in preparing a report with minimum flaws.

Presentation
for
MODULE-IV

NATURE OF INTELLECTUAL PROPERTY

Patents

Grant of a property right to the inventor:

- Issued by the Patent and Trademark Office
- Term of a new patent is 20 years from the date on which the application for the patent was filed in the United States
- US patent grants are effective only within the US, US territories, and US possessions

Patents

- The right to exclude others from making, using, offering for sale, or selling" the invention in the United States or "importing" the invention into the United States
- Not the right to make, use, offer for sale, sell or import, but the right to exclude others from making, using, offering for sale, selling or importing the invention
- Constitution of the United States gives Congress the power to enact laws relating to patents, in Article I, section 8, which reads

Patents

- Specifies the subject matter for which a patent may be obtained and the conditions for patentability
- Establishes the Patent and Trademark Office (PTO) to administer the law relating to the granting of patents, and contains various other provisions relating to patents.

Process of Patenting and Development

Process:

Process, act or method, and primarily includes industrial or technical processes

Machine:

Self explanatory

Manufacture:

Articles which are made, including all manufactured articles

Composition of Matter

chemical compositions and may include mixtures of ingredients as well as new chemical compound

Process of Patenting and Development

Utility

subject matter has a useful purpose and also includes operativeness.

Invention must "work" to be useful

Novelty

Must not be known or used by others in this country

Or patented or described in a printed publication in this or a foreign country.

Process of Patenting and Development

- **Non-obviousness**
  - The subject matter sought to be patented must be sufficiently different from what has been used or described before that it may be said to be nonobvious to a person having ordinary skill in the area of technology related to the invention
- **Three leg stool**

Trade and Copyright

- Issue patents on behalf of the Government
- Headed by Commissioner of Patents and Trademarks
- Part of *Department of Commerce*
- Administers the patent laws as they relate to the granting of patents for inventions
- Examines applications for patents

Trade and Copyright

- Publishes issued patents and various publications concerning patents
- Similar functions are performed with respect to the registration of trademarks
- No jurisdiction over questions of infringement and the enforcement of patents
- Divided among a number of examining groups, each group having jurisdiction over certain assigned fields of technology

Design Patents

- Any new and nonobvious ornamental design for an article of manufacture
- Protects only the appearance of an article, not its structural or functional features
- Design patent has a term of 14 years from grant
- Proceedings relating to granting of design patents are the same as other patents

Design Patents

- Any newly *discovered* and *asexually reproduced*, distinct and *new variety* of plant, including cultivated sports, mutants, hybrids, and newly found seedlings, other than a tuber-propagated plant or a plant found in an uncultivated state
- same parts as other applications with the addition of a plant color coding sheet

Trademarks

- Word, name, symbol or device which is used in trade with goods to indicate the *source of the goods* and to *distinguish* them from the goods of others
- Servicemark is the same as a trademark except that it identifies and distinguishes the source of a *service rather than a product*
- Used to prevent others from using a confusingly similar mark
- Not to prevent others from making the same goods or from selling the same goods or services under a clearly different mark

Patenting and development

- Statute says, "any person who invents any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof"
- Application = written document which comprises a specification (description and claims), and an oath or declaration
- Drawing or reduction to practice
- Filing fee
- Filing date of an application for patent determines priority (first to file wins!!)

Patent Cooperation Treaty

Basics:

One application for 137 countries

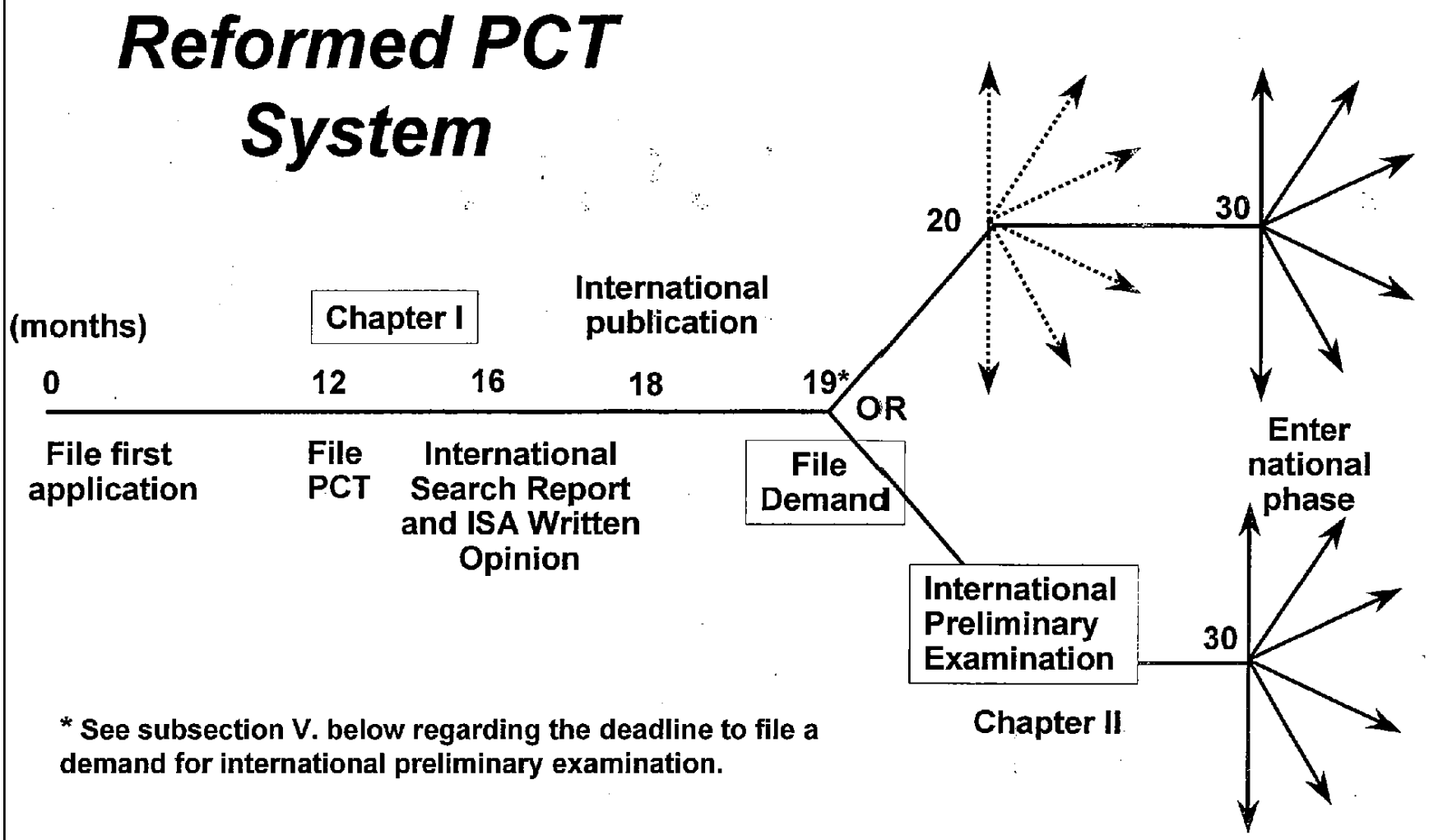
Compliance with form in PCT is a valid filing in all 137 countries

Own language – delay translation fee

Optional Search Report – decide if and where to apply for patent.

- If your client/company needs an estimate of costs, an estimate may be generated using the Global IP Estimator

Patent Cooperation Treaty Flow



Patent Cooperation Treaty

- Priority under the PCT is governed by the Paris Convention
- Same rights in that country if filed within 12 months of priority application
- http://www.uspto.gov/web/offices/pac/mpep/documents/appxp_4.htm#parart4
- The national Office of any Contracting State willing to assume this responsibility
- The regional Office acting for one or more Contracting States, with their consent

Presentation
for
MODULE-V

PATENT RIGHTS

Scope of Patent Rights

- The Patents Act, 1970
  - Product Patent
  - Patent Term of 20 years
  - Public Health Safeguards

- The Trade Marks Act, 1999
- Service Marks and Collective Marks
- Term increased from 7 years to 10 years

Licensing and transfer of technology

- The Designs Act, 2000
- The GI Act, 1999
- The Copyrights Act, 1957
- The Bio-Diversity Act, 2001
- The Layouts and Integrated Circuits Act

Licensing and transfer of technology

- The protection you receive is only for the appearance of the article and not how it works.
- Design registration is intended to protect designs which have an industrial or commercial use.
- Duration of protection is initially for 10 years and extendable for another term of 5 years.
- Designs of stamps, labels tokens, cards, cartoons, or parts of an article not sold separately, cannot be registered

What is GIR

- An indication used to identify agricultural, natural or manufactured goods originating from a definite territory in India.
- It should have a special quality or characteristics or reputation based upon the climatic or production characteristics unique to the geographical location.
- Examples of Geographical Indications in India are Darjeeling Tea, Kanchipuram Silk Saree, Alphonso Mango, Nagpur Orange, Kolhapuri Chappal, Bikaneri Bhujia, etc.

What is GIR

- Any association of persons, producers, organization established by or under the law can apply representing & protecting the interests of the producers

Geographical Indications

- The registration of a Geographical Indication is for a period of ten years.
- Renewal is possible for further periods of 10 years each.
- A trade mark is a sign which is used in the course of trade and it distinguishes goods or services of one enterprise from those of other enterprises. Whereas a Geographical Indication is used to identify goods having special characteristics originating from a definite geographical territory.

Geographical Indications

- TRIPS provisions- For reciprocal protection ;protection in the country of origin is must.
- India did not have such protection with regard to Geographical indication.
- Result – cases like Turmeric, Neem and Basmati.
- To cover up such situation – Geographical Indication of Goods (Registration and Protection) Act 1999 , passed.

Geographical Indications

- The salient features are:-
  a) Maintenance of register of G.I in two parts – Part A & Part B through computer.
  b) Prohibition of registration of certain geographical indications.
  c) Taking infringement action – by registered proprietor / registered user.
  d) Prohibition of assignment etc. – being public property.
  e) Prohibition of registration of G.I as Trade Mark.
  f) Appeal against Registrar's decision to IP Board established under the Trade Mark legislation.

Administration of Patent System

Two Parts:

- Protection part
- Enforcement part

Administration of Patent System

- Criteria for Patentability
  - New & useful
  - Non-obvious
  - Capable of Industrial Applications
- Patents Act specifies
  - What are not inventions?
  - What are not patentable inventions?
- How to get that monopoly right?

Administration of Patent System

- It encourages RESEARCH.
- Induces an inventor to disclose his inventions
- instead of keeping them as secret.
- Provides inducement for capital investment
- encouraging technological development.
- It encourages establishment of new industries

IPR of Biological Systems

A patent is a Monopoly Right granted

- For an invention
- By the government
- To the inventor or his assignee
- For a limited period
- It is valid within the country of grant

IPR of Biological Systems

- Ring – pull for cans of beverages
- But even for any small ‘ incremental ’ inventions
- INDIVIDUALS OR Companies-normally do not clearly recognize the TRUE MARKET VALUE for a particular INVENTION
- e.g. Anti theft device for motor cars-wheel clamp
- Tetra pack style of cartons for milk & fruit juice

Traditional knowledge Case Studies

- Effective April 2007:
  - restoration of the right of priority
  - applications filed with parts missing
  - rectification of obvious mistakes
  - addition of patent documents of the Republic of Korea (KR) to the PCT minimum documentation

Traditional knowledge Case Studies

- Working Group on PCT Reform--April 23-27, 2007
  - International publication in multiple languages
  - Supplementary international searches
  - Use of earlier national search results by Office other than ISA
  - Swiss proposal re disclosure requirements
  - Proposed amendments on withdrawals