Research methodologies

Sub code: 18KP3CHELCH3

UNIT-1

Definition of research

- Research may be Defines as the symmetricand objective analysis and recording of controlled observations that may lead to the developments of generalisations,principles,or thesis,resulting in prediction and possibly ultimate control of events.

- Research medhodologies

- Research methodologies is the specific procedures or techniques used to identify select process and analyze information about a topic.

Selection of research problem

- The ability to develop a good research topic is an important skill.an instructor may assign you a specific topic but most often instructors.require you to select your own topic of interest.when deciding on a topic there are a few things that you will need to do

- 1.brainstorm for ideas

- 2. Choose a topic that will enable you to read and understand the literature.

- 3. Ensure that the topic is manageable and that material is available.

- 4. Make a list of key words

- 5. Be flexible.

- 6. Define your topic as a focused research question

- 7. Research and read more about your topic

- 8. Formulate the thesis statement.

Sampling techniques

- Sampling method

- Sampling is simply the process of learning about population on the basis of a sample drawn from it.under this method a small group of the universe is taken as the representative of the whole mass and the results are drawn.it is a method to make social investigation practicable and easy.

- A statistical sample is a minitage picture or crosssection of the entire group aggregate from which the sample is taken.

Types of sampling

- Probability sampling method
- Non probability sampling method
- Probability sampling method
- They have two types one of thesimple random sampling then second one is stratified sampling
- Non probability sampling method
- 1.Accidental sampling
- 2. Convenience sampling
- 3. Judgement sampling
- 4. Quota sampling

- Random sampling

- The random sampling is based on the concept of equipprobable outcomes.therefore it is also known as a probable sample as it refers to a definite method of selection individuals items under such a condition that each time item has equal opportunity or probability or chance of being selected. Random sampling is sometime referred to as representative sampling this method is suitable for a small homogeneous population.

Data collection

- Data collection

- Data collection is the systematic approach to gathering and measuring information from a variety of sources to get a complete and accurate picture of an area of interest.

- Three Process of data collection

- 1. Collection of data

- 2 . Processing of data

- 3. Analysis of data

Collection of data

- The most important process in collection data is

- 1. By observation

- This method implies the collection of information by way of investigation own observation without interviewing the respond the information obtained relates to what is currently happening and is not complicated by either the past behaviour

- 2. Through personal interview

- The investigators follows a rigid procedure and seeks answers to a set of preconceived questions through personal interviews.this method of collecting data is usually carried out in a structural way where output depends upon the ability of the interviewer.

- 3. Through telephone interviews

- This method of collecting information involves contacting the respondents on telephone itself. This is not a very widely used method but it plays an important role in industrial surveys in developed regions particularly when the survey has to be accomplise in a very limited time

- By mailing of questionnaires
- The researcher and the respondents do come in contact with each other if this method of survey is adopted. Questionnaires are mailed to the respondents with a request to return after completing the same questionnaires to be used must be prepared very carefully so that it may prove to be effective in collecting the relevant information.

- Through schedules
- Under this method the enumerators are appointed and given training.they are provided with schedules containing relevant questions.

Procesessing the data

- Three important processing of data is
- 1. Editing
- 2. Coding
- 3. Categorisation
- 4. Tabulation

- Editing

- Editing is the first step in data processing.

- Each of editor Should be familiar with instructions given to interviewers and corder's as well as his own editing instructions.

- He should not destroy erase or make illigeble athe original entry of the interviewer original entries should be erased out with a single line so as to Remain eligible

- Coding

- Coding is the process by which data are organised into classes and numerals or there's symbols are given to each item recording to the class in which it falls.

- Deciding to the categories to be used

- Allocating individual answers to them

- The study of the answer in the first step in coding.

- Catogarisation

Categorisation is the process of groups the statistical data under various under standable homogeneous groups for the purpose of convenient interpretation

A good categorisation should have the characteristics of clarity homogenity equality and purposefulness and accurancy

Through categorisation the complex scattered and data is organic into concise logical and intelligible.

Analysis of data

- Analysis of data means studying the tabulated material in order to determine inherent facts or meanings.

- Analysis of data is one of the important aspects of research.since it is highly skilled and technical job it should be carried out by the researcher himself.it demands a deep and intensive knowledge on the part of the research about the data to be analyses.

- Data facts and figures are silent and they never speak for themselves. But they have complexities.it is through systematic analysis.

Thesis writing

- Thesis structure may be designed below
- Title page
- Abstract
- Table of content
- List of figures
- List of tables
- Introduction
- Methods
- Results
- Conclusion
- Acknowledgement
- References
- Appendixes

How to make a Thesis writing

- Table of contents have a subtitles may be
- List of figures
- List of tables
- Introduction- subheads
- Methods- subheads
- Discussion
- Conclusion
- Recommendations
- Acknowledgement
- References
- Appendix

Steps to make a manuscript

- Prepare the Figures and tables
- Write the methods
- Write up the Results
- Write the discussion and finalise the discussion
- Write a clear conclusion
- Writing A compelling introduction
- Writing the abstract

Oral presntation

- Tips for oral presentation
- Chosse the best topic
- Approaching your topic
- Using your computer
- Using your internet
- Write your paper
- Style of your matter

Short communication

Even though short communicationDiffer from Full length papers and authors Would be well Advises to approach writingA short communication .

Steps of short communication

1. Determine the list And rank of authors
2. Decide when to submit
3. Write a title and abstract
4. Determine the Basic format of the paper
5. Select the journal You want to submit
6. Write an outline of paper
7. Revise your manuscript
8. Check your refrences

Net browsing for research

- How to use the browsing for research

- 1. Exclusive article and don't rely Exclusively On net resources

- 2. Narrow your research Topic before logging

- 3.know your Subject directories

- 4.Keep a detailed record Of Sites you visit

- 5.lot of articles and abstracts are available in net browsing

Source of abstract and articles

- Internet browsing have a Variable source of abstract and article
- YouTube
- Twitter
- Facebook
- Faidu
- Wikipedia
- Instagram

Basic internet service

One of the technology used to the many detail collect for the net is lot of information gathering by internet.

Various source of abstract

It is brief summary of research articles and thesis rewiw and conference proceedings any inteptbanalysis of a particular subject and it's offered used it help to readers

Abstracts

- Abstract dived in thre types

- 1. Indicative it is simple and objective and short.it describe the theme of articles| And compound publication.

- Internative it is longest and more through describe the objective and conclusion of the articles or publication as well as content

- Evaluvative it is competitive critical abstract subjective and evoluate the content of the articles and publications

UNIT -II

INTRODUCTION

- C is a general programming language developed at AT and T's Bell laboratories of USA in1972. It was designed by Dennis Ritche.

- This languages was upgraded version of the language BCPL developed by Martin Richards .

- BCPL influenced by Ken thomson a system engineer to develop earlier version of c language known as B Language

STRUCTURE OF C PROGRAMMING

- A c program consists of one or more functions.one of which is called the main function.the function may be written in any order.

- [Preprocessor directives]

- [Global declarations]

- Main

| {

- Program statements;

- [Func-1();]

- Program statements;

- [Func-2();]

| }

DATA TYPES

- These are four basic C data types denoted as char ,int,float,and double.

- These four keywords are called as type specifiers

- The int type

- the int type used to store integer numbers. Integer data can not have a fractional values or a decimal point.

- The char data type

- The char type is used to store a single character. Characters are usually stored in 8bits

- The float type

- The float type is used to e floating point number by occupying 64 bits with 14digits of precision.

VARIABLES

- Variable is data name that may be used to store a data value. It a different values at different lines of execution.

- 1. Must begin with a letter

- 2. Length should not exceed 8characters.

- 3. Upper and lower case are Significant total is not equal to TOTAL not equal to total.

- 4. It should not be a keyword

- 5. White space is not allowed.

TYPES OF VARIABLES

- Local variables

- Local variable are those that are Declared inside a function.they can referred only by the statements inside the function and are not known to other functions.

- Global variables

- Variable that are alive and active through out the entire program are known as global Variable.they are often simply called external variables.

- Formal variables

- If a function has arguments those arguments must be declared.these arguments are called the formal variables of the function.

CONSTANTS

- A quantity which does not change During the execution of a program is called a constant.there are three types of constant.

- 1.numeric constant

- 2. Character constant

- 3. stIring constant

- Numeric constant

- These are four types of numeric constant

- 1. Integer constant

- 2.floating constant

- 3. Hexa decimal constant

- 4. Octal decimal

- Character constant

- Any character enclosed within single quotes is acharacter constant

- Examples k,h,3

- Stirin g constant

KEY WORDS

- Keywords are words that are part of a language and have special meaning to a computer Program.

- C has 33 keywords that can no be used as variables names,function names or constants

- Since c is a case sensitive language all keywords must be written in lower case

- Auto,do,go-to,short,union,break,double,if,sizeof,unsigned

OPERATORS

- C has a rich set of operators.an operator is a sympol that tells the Complier to perform certain mathematical or logical manipulations.

- C operators are classified into following types

- 1. Arithmetic operators

- 2.relational operators

- 3. Logical operators

- 4. Assignment operators

- 5. Increment and decrement operators

- 6. Conditional operators

- 7. Bitwise operators

- 8.special operators

CONTROL STURUCTURES

- C allows Decision to be made by evaluating a Given expression as true or false.such an expression involves the rotational and logical operators.

- Depending on the outcome of the decision program execution proceeds in one direction or another.

- 1.the if statements

- 2.the if –else statements

- 3. The nested if statements

- 4. The else if ladder

- 5. The while loop

- 6. The do while loop

- 7. The for loop

- 8. The go-to statement

- 9. The continue statements

- 10. The break atatements

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ARRAYS

- Arrays is a list of elements or data of the same type. All the elements together are refered to By a single name.

- This is a name of the array.

- The elements of the array are differential from one another by their positions with in the array

- The positions of these elements can be indicated by means of a subscript or index

- 1.one dimensional array

- 2. Two dimensional array

CALLING BY REFERENCE

Call by reference means that the variables address is passed give function the power to change the contents that variable.

stIring function

A stIring is an array of characters. Any group of characters different between double quotation marks is a constant stIring.

The double quotation sighs are used to delimit the character stiring.

1. Getchar input
2. Putchar input
3. Getch input
4. Getche input
5. Gets input
6. Puts input

STIRING HANDLING FUNCTIONS

- 1.streat stIring concatenation
- Strepy stiring copy
- Strlen stiring length
- Strwr stiring
- Strupr stiring
- Strrev stiring

POINTERS

- Pointers are another important feature of a c language. There are number of reason for using pointers

- 1.a pointer enables us to Access a variable that is defined outside the function.

- 2.pointers are more efficient in handling the data tables

- 3.pointers reduce the length and complexity of a program

- 4.they increase the execution speed

- 5.the use of a pointer array to character stiring results in saving of data storage space in memory.

OBJECT ORIENTED PROGRAMMING SOFTWARE

- Introduction of oops

- While computer hardware has made enormous strides.aoftware has been largely left behind.every two year or so a new generation of microchip arrives doubles it's performances but software is still not able to catch up that speed.

- There is so much break through in software. The gab between the advancement in hardware and software is widening every year.

- It is being predicted that oop will do for software what microchip has done for hardware.

- Characteristic of oops

- To understand object oriented programming it is essential to understand the basic characteristics of the object oriented programming.

- The popularity of oops is the direct result of the power and convenience of using simple easy to maintain reusable program modules known as objects.

- Writing a program in object oriented programming languages is basically thinking in terms of objects rather than functions or procedures.

- But they do not go far enough. Actual programming task includes not just function and procedure data

- Oop on other hand takes the extra step and binds code and data together this creating a more powerful useful unit that encompass all the details of a process or a task.

CLASS OF OOPS

- It is a simply a structure that combines the objects with some attributes.and some behaviour.

- The class Definition includes all the features that defines an object of he class.

- Thus a class bind together the features of every object of the class while allowing each object to differ from any other in data content.

- The behaviour of a class in characterized but the type of thing sit can do.

- Each class. Defines possible infinite sets of individual objects.each objects is said to be an instance of it's class and each instance of the class has its own value for each attribute but shares the attribute name and operates the other instance of the class.

- Encapsulation

- It is a technical name for information hiding.instead of organizing programs into procedures that share global data,the data is packaged with the procedures that access data.

- This concepts is often called data abstraction or modular programming

- The goal here is to separate the use of the object from it's implementation.the user is not longer aware of how the object is implemented.

POLYMORPHISM

- It is one of the pillars of object oriented programming.in an object oriented language ,polymorphism allows a prigrammer pursue a course of action by sending a message to an object without concerning about how to software system is to implement the action.

- The capillary becomes significant when the same general type of action can be accomplished in different ways by different types .