Year 2020-21
Class : SE   **Sem: IV**

Subject: Automata Theory

Name of Activity: Assignment and Case Study on Compilers

Activity Report: Assignment study on working of Compiler was given to students to explore concepts like DAG Representation, Grammar, Syntax Analysis etc in different phases of compiler

Also student has studied different types of compilers used for Programming Language.
A case study on compiler is given for the same.

Outcome: Students understood concepts of automat theory to be used in compiler construction

Sample Report:

https://drive.google.com/file/d/1OTt2X1d-7Bex9v-SDoIEc742j-iHBPSm/view?usp=sharing

HOD IT.

THANE (E)

Vaishnavi. M. Kulkarni
SE IT Roll No : 25
Automata Theory Assignment.
B1 Batch

Q 1. Write a short on following
      1. Applications of FA, CFG, PDA & TM.

Sol : 1. Applications of Finite Automata (FA) :

→ A finite automata is highly useful in design of Lexical Analyzer.

→ A finite automata is useful to design text editor.

→ A finite automata is useful to design Spell checkers.

→ A finite automata is useful to design transducers.

→ Finite automata is used in designing sequential and combination circuits.

→ For recognizing the pattern using regular expression.

   2. Applications of Context Free Grammar (CFG)

1

→ Context Free Grammar are used to describe programming languages.

→ Also for defining parsing the program by constructing syntax tree.

→ For translation of programming language.

→ For describing arithmetic expressions.

→ Also for construction of Compilers.

→ An Essential part of XML is the document Type definition (DTD) which is essentially a Context Free Grammar that describes the allowable tags and the ways in which these tags may be nested.

· 3. Applications of Push Down Automata (PDA)

→ Since a PDA consist of FA + stack, a PDA has a memory element that can be used both as a recognition & storage component.

→ It is used in Compilers for syntax checking of programming languages.

→ Used in detection of Palindromes.

→ Used in pattern and string matching algorithms.

→ Used in tower of Hanoi and recursion based problems.

→ Used for encoding and conversion into Context free Grammar.

→ For implementation of stack stack applications.

→ For evaluating the arithmetic expression.

- 4. Applications Of Turing Machine:

→ It can be used to check equality of two strings.

→ It can be used in modifying and encoding a string.

→ It can be used as digital computer as it is powerful.

→ It can be used in detection of palindromes, well formed parenthesis etc.

→ Turing machine find application in algorithmic information theory, complexity studies, software testing, high performance computing machine learning, software engineering,

3

computer networks & evolutionary computa-
tions.

→ For solving any recursively enumerable
problem.

→ For understanding complexity theory.

→ For implementation of neural networks.

→ For implementation of Robotics Applications.

→ Also it is used for implementation of artificial
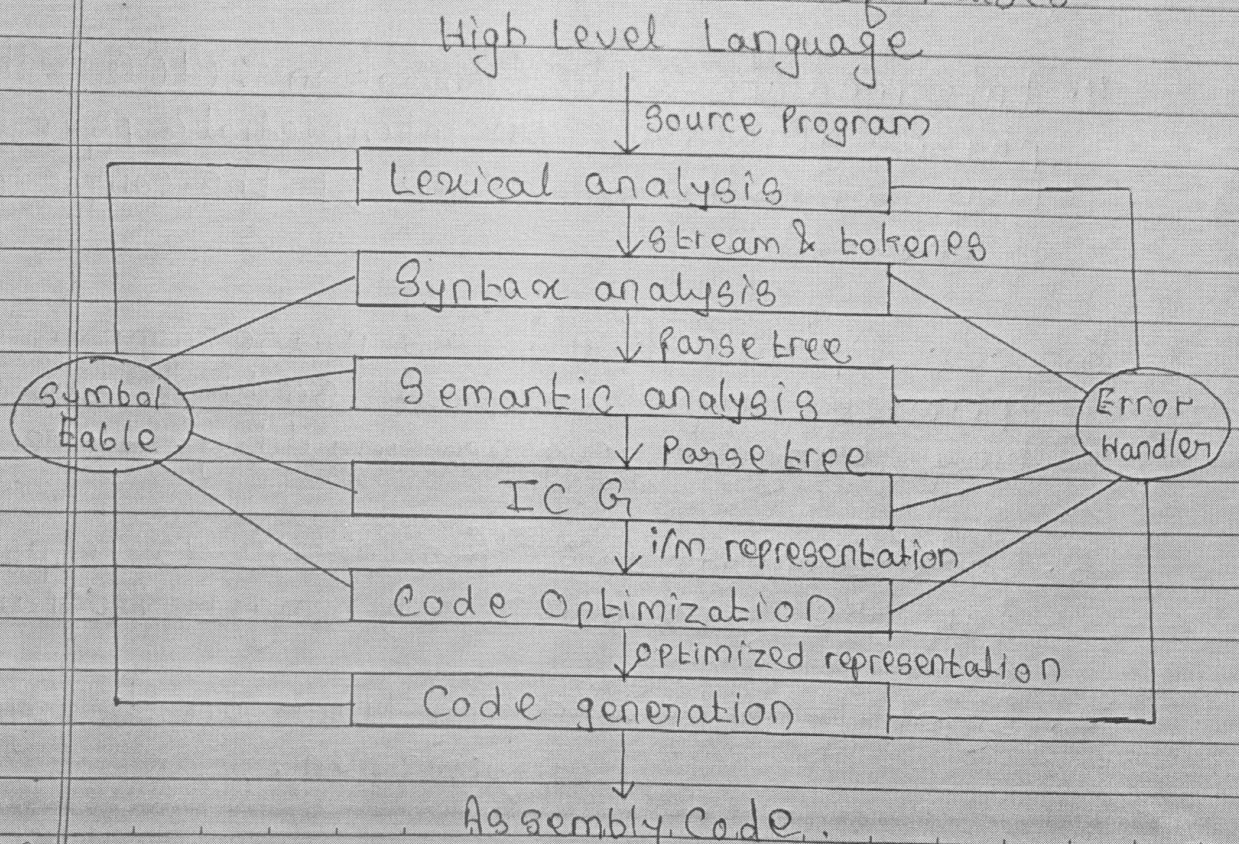intelligence.

Q2. What is Compiler, explain in brief phases of compiler?

Sol : • Definition of a Compiler :

Compiler is a language translator that takes as input the source program and generates the target program.

• Structure Of Compiler :

Since, the process of compilation is very complex it is divided into no. of phases.

High level Language

↓ Source Program

```
┌─────────────────────────┐
│   Lexical analysis       │
└─────────────────────────┘
        ↓ Stream & tokenes
┌─────────────────────────┐
│   Syntax analysis        │
└─────────────────────────┘
        ↓ Parse tree
┌─────────────────────────┐
│   Semantic analysis      │
└─────────────────────────┘
        ↓ Parse tree
┌─────────────────────────┐
│   I C G                  │
└─────────────────────────┘
        ↓ i/m representation
┌─────────────────────────┐
│   Code Optimization      │
└─────────────────────────┘
        ↓ optimized representation
┌─────────────────────────┐
│   Code generation        │
└─────────────────────────┘
        ↓
```

Symbol Table

Error Handler

Assembly Code.

4

1. Lexical Analysis : This phase takes as input the original source program and if the elements of the program are correct it generates the stream of token.

2. Syntax Analysis : This phase takes as input the tokens generated by lexical analysis phase and if the syntax is correct it generates a parse tree.

3. Semantic Analysis : This phase performs the check on the meaning of the statement and makes the necessary modifications in the parse tree representation.

4. Intermediate Code Generation : (ICG) This phase generates an intermediate representation which helps to simplify the complexity of the code.

5. Code Optimization : This phase generates an optimized representation so that the resulting target program would get executed.

6. Code Generation : This phase is responsible for the generation of target Program.

7. Symbol table : keeping track on the symbol's information.

8. Error Handler : It is responsible for handling of the error, which can occur in any of the compilation phases.

Q.3. Write a Case Study on following Compilers.
(CB.1 Batch)
1. Compilers for C

Solu? 1.) NAME OF COMPILER : In this case study
we are going to learn about the
compilers for C. There are many compilers
for C language but the top compilers are
as follows :
1.) Dev C and C++ Compiler
2.) Borland Turbo C
3.) Tiny C Compiler
4.) Portable C compiler
5.) GNU Compiler Collection
6.) Clang Compiler, etc.

2.) WORKING OF COMPILER : A compiler is a
computer program which helps you transform
source code written in high-level language
into low-level machine language. It translates
the code written in one programming
language to some other language without
changing the mean meaning of the code.

High level ⟶ | Compiler | ⟶ Low level
Language   language.
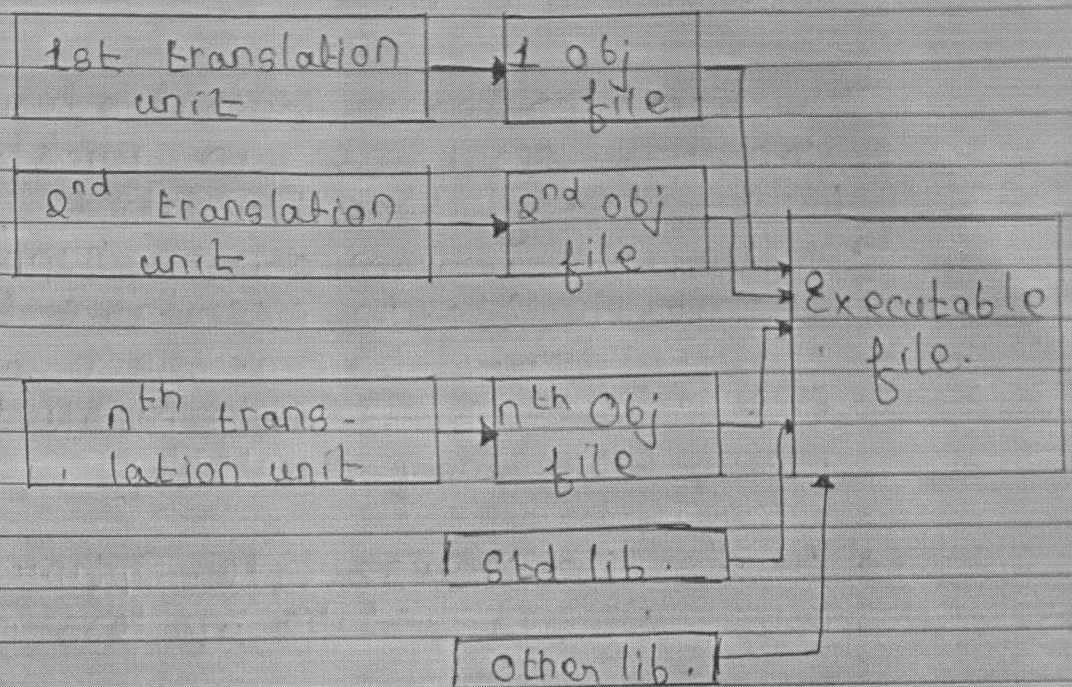   ↑
           Compilation Error
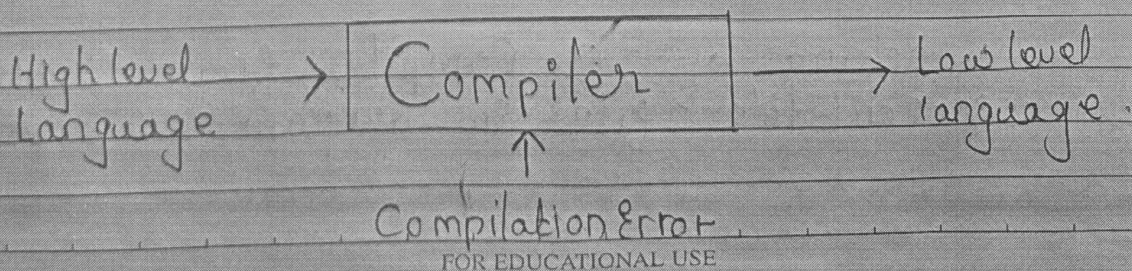
Here in C-Compiler, Once you have written source file using a text editor, you can invoke a C-compiler to translate it into machine code. The Compiler operates on a translation unit consisting of a source file and all the header files referenced by #include directives. If the compiler finds no errors in the translation unit it generates an object file containing the corresponding machine code. Object files are usually identified by the filename suffix .o or .obj.

Object files are also called modules. A library, such as the C std library, contains compiled, rapidly accessible modules of std functions.

The Compiler translates each translation unit of C program that is, each source file with any header files it includes into a separate object file. The Compiler then invokes the linker, which combines the object files and any library functions used in an executable file.

Working of C Compiler from Source Code to executable file in diagram

```
┌──────────────────┐      ┌──────────┐
│  1st translation │─────▶│ 1 obj    │
│  unit            │      │    file  │
└──────────────────┘      └──────────┘
┌──────────────────┐      ┌──────────┐          ┌──────────────┐
│  2nd translation │─────▶│ 2nd obj  │          │  Executable  │
│  unit            │      │    file  │          │     file.    │
└──────────────────┘      └──────────┘          └──────────────┘
┌──────────────────┐      ┌──────────┐
│  nth trans-      │─────▶│ nth Obj  │
│  lation unit     │      │    file  │
└──────────────────┘      └──────────┘
                          ┌──────────┐
                          │ Std lib. │
                          └──────────┘
                          ┌──────────┐
                          │Other lib.│
                          └──────────┘
```

3.) LIMITATIONS :

→ C compilers only identify errors and are
   incapable of handling exceptions.

→ It dosen't provide protection. It also dosen't
   feature reusability of source code extensively

→ The process of debugging is difficult. And
   dosen't provide strict data type-checking.
   i.e integer datatype can be passed for
   floating datatype.

→ It uses ASCII character set which is only
   able to support 256 characters because
   it uses 1-byte to represent a character.

→ It is unable to support some language
   like chinese, Japanese that have more than
   256 characters.

4.> ADVANTAGES :

→ C Compiler have several advantages :
Compiled programs run quickly, since they
have already been translated.

→ A compiled program can be supplied as an
executable file. An executable file is a file
that is ready to run. Since an executable
file cannot be easily modified, programmer
prefer to supply executables rather than
source code.

→ Compilers optimise code. Optimised code can
run quicker & take up less memory space.

5.> FEATURES :

→ Correctness.
→ Speed of Compilation
→ Preserve the correct the meaning of code.
→ Speed of the target code.
→ Recognize legal and illegal program construct.
→ Good error reporting /handling.
→ Code debugging help.

6.> CONCLUSION : Though there are many com-
pilers for C, we can
clearly understand that the Compiler is an
important pillar to the programming languages.
Without their work whatever program we write
would just be garbage for the system.

K.C. College of Engineering & Management Studies & Research

MithBunder Road, Kopri, Thane (E)

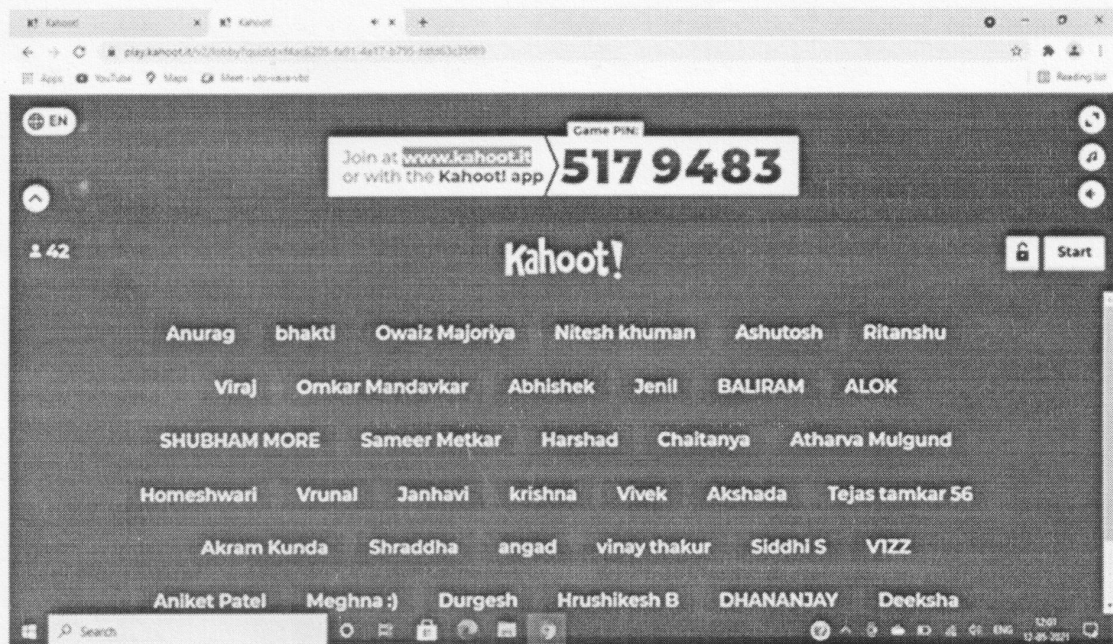## Department of Information Technology

Class : SE (IT) Sem: IV (20-21)

Subject: Operating System

Activity: Virtual Lab

Activity Report:

Round robin scheduling algorithm experiment was conducted in virtual lab. Students have read all the demonstration and followed the steps to simulate round robin algorithm. This would help them in learning basic and advanced concepts through remote experimentation. With help of Virtual Labs students can avail the various tools for learning, including additional web-resources, video-lectures, animated demonstrations and self evaluation.

Outcome: Students were able to simulate the working of scheduling algorithm with virtual lab

AttendanceLink: https://drive.google.com/drive/folders/1Ourlz0g42JVuB2vJcNlwu1ZSZq67cRzb

Subject: Python Lab

Activity: Quiz (Kahoot)

Activity Report: To evaluate student performance in learning the recent applications with respect to teacher's instructional method, the final year student had attempted Quiz. This activity is to get acquainted with the fundamental recovery of whether students are able to understand basic things in the subject.

This activity was conducted for all the students. It was useful to evaluate bright students who have answered almost all the answers correctly. To make this quiz interesting it was taken on Kahoot platform.

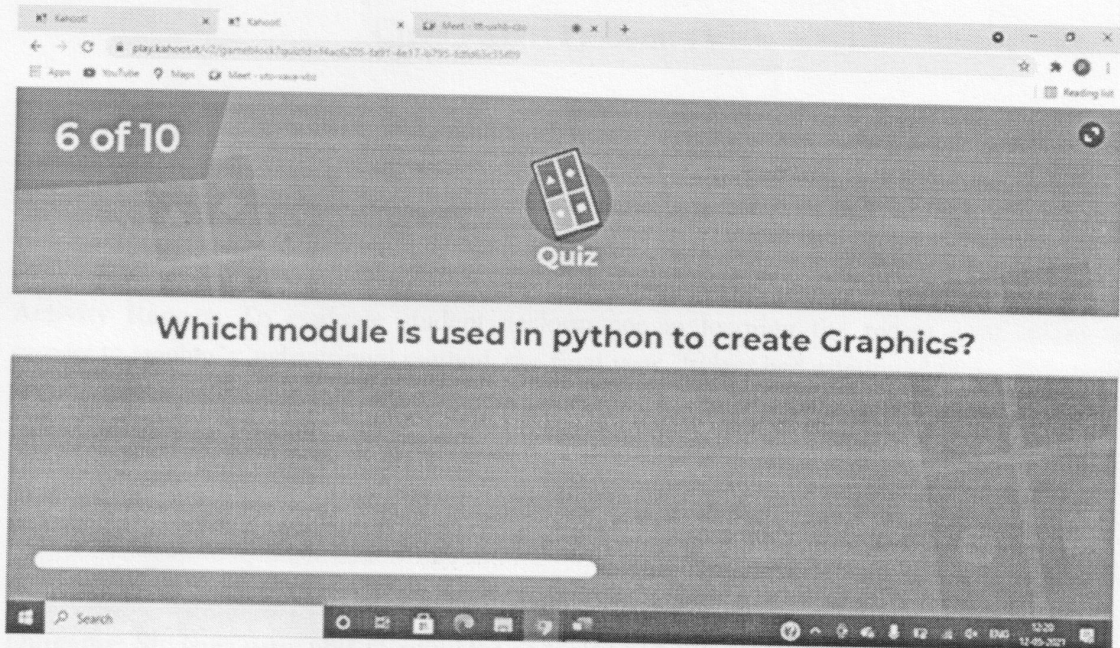**Outcome:** Students were able to apply the concepts and memorize the basic concepts.

Quiz

Which module is used in python to create Graphics?

CClass : TE (IT) **Sem:** V

Subject: Advanced Data Management Technology

Activity: Flipped classroom

Activity Report: Flipped learning is a pedagogical approach in which the conventional notion of classroom-based learning is inverted, so that students are introduced to the learning material before class, with classroom time then being used to deepen understanding through discussion with peers and problem-solving activities facilitated.

Topics on Advanced Data Management Techniques was shared on google classroom,and Advance data access protocols was also shared in google classroom.

Students were told to make group of three members and discuss about the topic.Students discussed about introduction of all databases,its application,advantage and disadvantages

Outcome: Students learned about team work. Students are able to learn the concept of mobile database,spatial database and temporal database.

Department of Information Technology

Activity Report (Year 2020-21)

Semester: VI Class: TE   Subject: DMBI

Common Activity : CASE Study on BI Applications

Name of Activity: Case Study on BI applications

Activity Report: Case study on various subjects were given to students to explore applications of Business intelligence in various domains.

Batch wise case study was given on Data Mining for Financial Data Analysis , Data Mining for retail and Telecommunication Industry , Data Mining for recommender system .

Case study was given on following topics:
1. Data Mining for Market Segmentation
2. Data Mining for Reatil and Telecommunication Industry with example
3. Data Mining for Recommender System

Outcome: Students understood various domains in which Business Intelligence is used

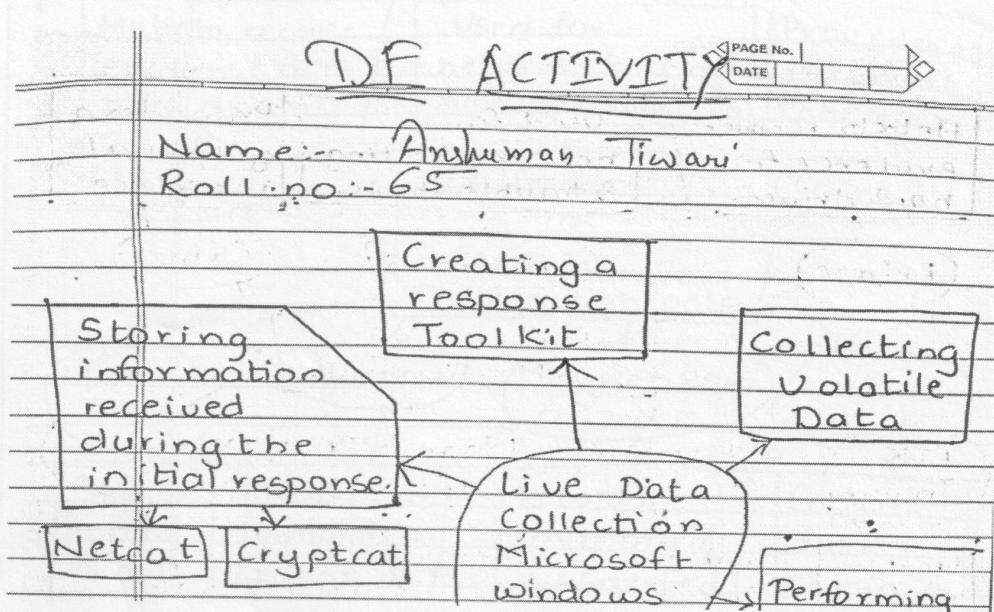**Proof: Sample**
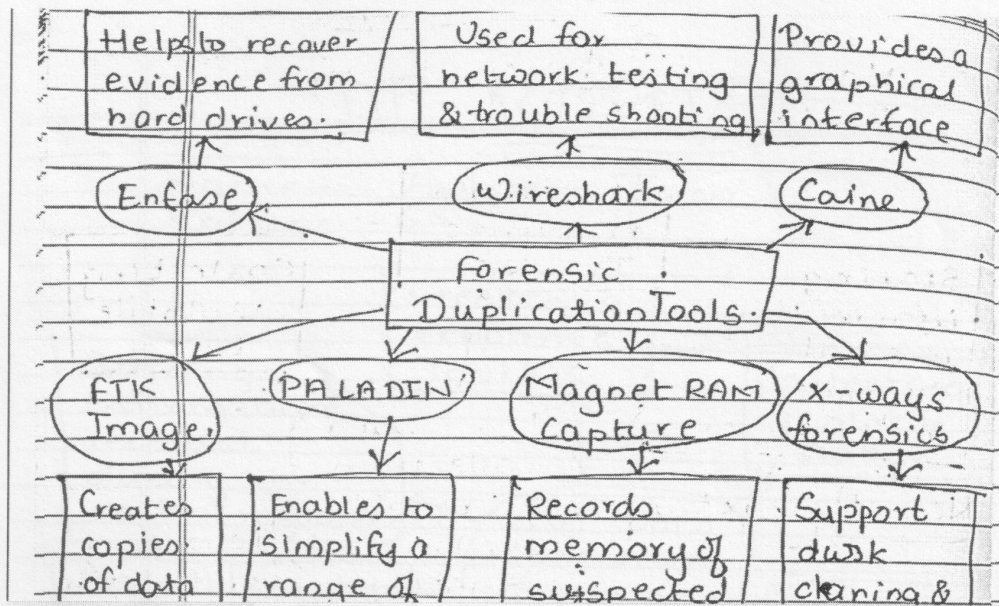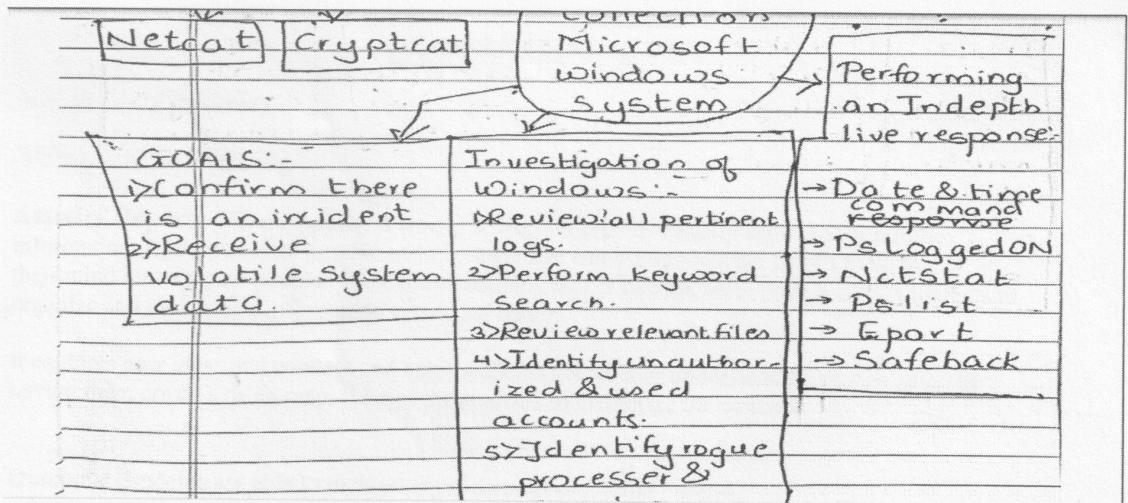
HOD IT

Subject: Digital Forensic

Activity: Mind Mapping

Activity Report: Mind mapping is simply a diagram used to visually represent or outline information. It is a powerful graphic technique student can use to translate what's there in their mind into a visual picture. Since mind mapping works like the brain does it allows students to organize and understand information faster and better.

It explores new ideas and concept and helps students get a better understanding of new ideas by having them create a mind map. It helps the students to memorize the concept.

Outcome: Students are able to memorize the concept of Digital Forensic

Netcat	Cryptcat	Collection Microsoft Windows System	Performing an Indepth live response.
GOALS:- 1>Confirm there is an incident 2>Receive volatile System data.		Investigation of Windows:- 1>Review all pertinent logs. 2>Perform keyword Search. 3>Review relevant files 4>Identify unauthorized & used accounts. 5>Identify rogue processer &	→ Date & time command response → Ps Logged ON → Netstat → Ps list → Eport → Safeback

Helps to recover evidence from hard drives.	Used for network testing & trouble shooting	Provides a graphical interface
Encase	Wireshark	Caine
	Forensic Duplication Tools.	
FTK Image.	PALADIN	Magnet RAM Capture	X-ways forensics
Creates copies of data	Enables to Simplify a range of	Records memory of suspected	Support dusk claning &

Q.4. Write a Case Study on Data mining for Market Segmentation.

Ans.

Introduction:

Before businesses and companies release their products and service, there is need for them to decide on whom to cater those. Different products and services, even if from same company, can be marketed towards different group of people. That is why, companies and organizations use different methods to know where they can best market their product. One of the most used methods is market research after which companies need to group their customers for easier marketing which is known as market segmentation.

Market Segmentation:

According to statistical concepts, Market segmentation is the 'process of partitioning markets into groups of customers and prospects with similar needs and/or characteristics who are likely to exhibit similar purchase behavior'. Market segmentation is an important task in marketing. It permits marketing staff to know what marketing method they can use to a particular group in the market. They can mix and match different combinations of product's price, promotion, and place. They also use market segmentation to know which customer can maintain its loyalty or customers that will likely be more willing to buy their products. Data used for market segmentation is usually from an account or CRM database. Sometimes external database

like researches and surveys are also used.

Data Mining:

In a simpler term, data mining is where systems study large databases to have new information that can be used for businesses. These new information are used to forecast and calculate new trends. A lot of benefits can be derived from using data mining. One obvious benefit is that it will be easier to discover unseen relationships and patterns in database. It can be used for making predictions about future trends and for marketing teams to devise their tactics to fit in it. Also, it will set apart a company from its competitor because of the data they know.

Data Mining in Market Segmentation:

For marketing purposes, data mining is such a huge help. Using the database of customer Relationship Management (CRM), the demographics - age, sex, religion, income, occupation and education, geographic, psychographic, and behavioral information of the customers will be helpful in segmenting them. The segmentation process will be faster and easier. Also, with the new data and information that comes with data mining, it can also help with the market segmentation.

As for its business purpose, knowing target market and their needs and wants is a lot cheaper than releasing different products and services that will cater to different customers. It will help businesses

and companies use the full potential of their resources while still making sales rather than trial and error way.

Moreover, it will be easier for marketing teams to sell the services and products because the market has one desire and wishes from companies.

e.g. The card protection company CPP group has a database of 7 million customers but knew little about them. To help target its marketing resources, the CPP Group employed GB group's analysis arm, Data Insight, to carry out a major customer modelling exercise. The chosen characteristics were run through a chaid analysis to create a hierarchy of importance. This enabled modellers to develop a scorecard. Among the strongest factors to emerge were those that were product-related, such as whether a claim had ever been made, which would increase the likelihood to renew. Now, instead of offering a single marketing message for the product, different treatments can be tailored to suit the individual segments.

K.C. College of Engineering & Management Studies & Research

MithBunder Road, Kopri, Thane (E)

Department of Information Technology

Class : BE (IT) Sem: VII

Subject: Infrastructure Security

Activity: Quiz (Kahoot)

Activity Report: To evaluate student performance in learning the recent applications with respect to teacher's instructional method, the final year student had attempted Quiz. This activity is to get acquisition about the fundamental recovery whether students are able to understand basic things in the subject.

This activity was conducted for all the students. It was useful to evaluate bright students who have answered almost all the answers correctly. To make this quiz interesting it was taken in Kahoot platform.

Outcome: Students were able to apply the concepts and memorize the basic concepts.
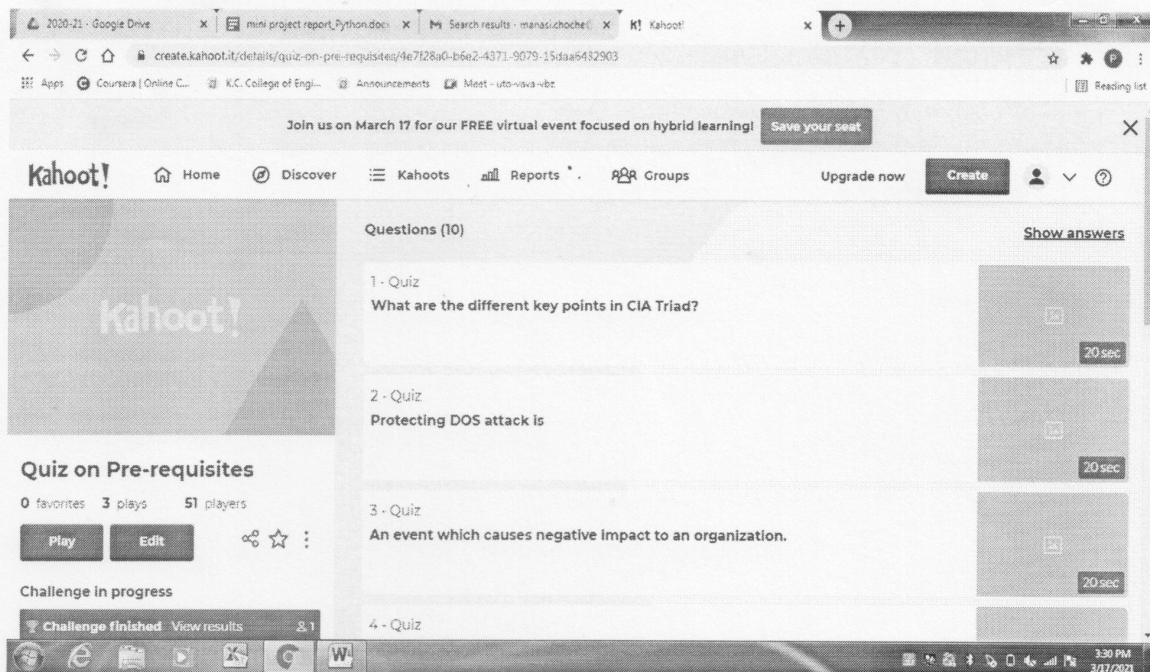
Year : 2020-2021

Class : BE   Sem: VIII

Subject: UID   **Date** : 20th April 2021

Name of Activity: Quiz on UID

Activity Report:

1) **Quiz & Descriptive test conducted in lecture slot**
2) **Conduction of MCQ & Descriptive Questions**
3) **Pattern used for this test is same**
4) **Marks allotted for MCQ – 10 marks (Total 10 questions -each question carry 1 mark)**
   & Descriptive – 10 marks (Total 3 questions, Solve any two – 5 marks each)

Outcome: Students will be able to solve similar type questions in exam.

<u>**Proof:**</u>

MCQ Questions – 10 Marks :

1) Which of the following is golden rule for interface design?
   a) Place the user in control
   b) Reduce the user's memory load
   c) Make the interface consistent
   d) All of the mentioned

Ans : d

2) Which of the following is not a user interface design process?
   a) User, task, and environment analysis and modeling
   b) Interface design

c) Knowledgeable, frequent users

d) Interface validation

Ans. c

3) Which of the following is not a design principle that allow the user to maintain control?
   a) Provide for flexible interaction
   b) Allow user interaction to be interrupt-able and undo-able
   c) Show technical internals from the casual user
   d) Design for direct interaction with objects that appear on the screen

Ans . c

4) When users are involved in complex tasks, the demand on _____ can be significant.
   a) short-term memory
   b) shortcuts
   c) objects that appear on the screen
   d) all of the mentioned

Ans. a

5) Which of the following option is not considered by the Interface design?
   a) the design of interfaces between software components
   b) the design of interfaces between the software and human producers and consumers of information
   c) the design of the interface between two computers
   d) all of the mentioned

Ans. c

6) Which of the following objectives are not the one that the user interface offers?

   i.   Help user interact with the software.
   ii. Give commands and input through the instructions that are displayed via user interface.
   iii. To improve the coding skills of the users.

   a. All i, ii and iii are correct
   b. Only i and ii are correct
   c. Only i and iii are correct
   d. None of the given options is correct

Ans. b

7) Which of the following statements is true?

i. In the graphical User interface, different information can be simultaneously displayed on the screen.
ii. In the Text-based User interface, different information can be simultaneously displayed on the screen.

   a. Only i is true
   b. Only ii is true
   c. Both i and ii are true
   d. None of them is true

Ans. a

8) Which of the following devices are mainly responsible for the user interface?

   a. Input and output devices
   b. Memory devices
   c. Processor
   d. None of the above

Ans. a

9) The main function of user-interface is to

   a. Convert program/ programs into machine language
   b. Transmit data to a remote location
   c. Connect users with an application through graphical options like icon, menu, text etc
   d. None of these above

Ans. c

10) In which type of interface users provide commands selecting from a menu?

   a. GUI
   b. CUI
   c. Voice Recognition User Interface
   d. None of these above

Ans. a

Descriptive Questions – (solve any two - 5 marks) Total 10 marks :

Q.1 Define Evaluation Process ? Explain what is Heuristic Evaluation ?

Answer : Evaluation. What associations does this word bring to mind? Do you see evaluation as an invaluable tool to improve your program? Or do you find it intimidating because you don't know much about it? Regardless of your perspective on evaluation, MEERA is here to help! The purpose of this introductory section is to provide you with some useful background information on evaluation.

Heuristic evaluation (Nielsen and Molich, 1990; Nielsen 1994) is a usability engineering method for finding the usability problems in a user interface design so that they can be attended to as part of an iterative design process. Heuristic evaluation involves having a small set of evaluators examine the interface and judge its compliance with recognized usability principles (the "heuristics").

Heuristic evaluation is performed by having each individual evaluator inspect the interface alone. Only after all evaluations have been completed are the evaluators allowed to communicate and have their findings aggregated. This procedure is important in order to ensure independent and unbiased evaluations from each evaluator. The results of the evaluation can be recorded either as written reports from each evaluator or by having the evaluators verbalize their comments to an observer as they go through the interface. Written reports have the advantage of presenting a formal record of the evaluation, but require an additional effort by the evaluators and the need to be read and aggregated by an evaluation manager. Using an observer adds to the overhead of each evaluation session, but reduces the workload on the evaluators. Also, the results of the evaluation are available fairly soon after the last evaluation session since the observer only needs to understand and organize one set of personal notes, not a set of reports written by others. Furthermore, the observer can assist the evaluators in operating the interface in case of problems, such as an unstable prototype, and help if the evaluators have limited domain expertise and need to have certain aspects of the interface explained.

Q.2 What is usability testing ?

Answer : Usability Testing also known as User Experience(UX) Testing, is a testing method for measuring how easy and user-friendly a software application is. A small set of target end-users,

use software application to expose usability defects. Usability testing mainly focuses on user's ease of using application, flexibility of application to handle controls and ability of application to meet its objectives.

There are many software applications/websites, which miserably fail, once launched, due to following reasons -

- Where do I click next?
- Which page needs to be navigated?
- Which Icon or Jargon represents what?
- Error messages are not consistent or effectively displayed
- Session time not sufficient.

Software Engineering, Usability Testing identifies usability errors in the system early in the development cycle and can save a product from failure.

Q.3 What is ISO standards & rules ?

Answer : **ISO standards**

Standards in usability and user-centred design

This document sets out the key international standards in the area of usability and user-centred design. The main body of standards in this area are those produced by ISO (the International Standards Organisation), to which individual national standards organisations have input. Most are also adopted as European (CEN) standards. Copies can be obtained from ISO or from national standards bodies.

In addition to standards, there are a large number of guidelines that have been published by individuals and organisations around the world. If designing a particular type of product (e.g. a piece of PC software) it can be worth consulting guidelines specific to that type of product (e.g. Interface design guidelines for Microsoft Windows, or the Apple Desktop). There are also guidelines that provide recommendations concerning accessibility of different types of products and systems for users with disabilities.

Usability and user-centred design standards can be divided up into 3 main categories:

- Product usage characteristics (how well users perform with it, how satisfied they are with it)
- Product interface attributes (design of the interface and interaction)
- Development process (activities carried out during product development)

Some standards (for example, those relating to software in ISO 9241) set out few mandatory requirements but instead set out guidelines and conditional requirements. When using such standards it is particularly important to have a good understanding of the product's context of use, user characteristics, user tasks, user requirements, and so on.

Other relevant standards:

- ISO 6385 Ergonomic principles in the design of work systems
- ISO 11064 Ergonomic design of control centres
- ISO 13406 Flat panel display ergonomic requirements
- ISO TS 16071 Guidance on accessibility of human-computer interfaces
- ISO 14915 Multimedia user interface design - Software ergonomic requirements
- ISO 20282 Ease of operation of everyday products
- ISO/IEC 10741-1 Dialogue interaction - Cursor control for text editing
- ISO/IEC 11581 Icon symbols and functions
- ISO/IEC 15910 Software user documentation process
- ISO/IEC 25062 Common Industry Format (CIF) for usability test reports
- ISO/IEC 62366 Application of usability engineering to medical devices

TestLink:

https://docs.google.com/forms/d/e/1FAIpQLSfbr21ZNz0oAt47bzVa577xsvraTSsDVExWtkhAoi2zy_UaIA/viewform?usp=sf_link

Recorded Session Link :

https://drive.google.com/file/d/1MKl_Z31ZHHPYhIdmuP4sc1vwOEZ8FVNv/view?usp=sharing

Year 2020-21

Class : BE   **Sem: VII**

Subject: Artificial Intelligence

Name of Activity: Virtual Lab Experiment on NLP

Virtual Lab on Natural Language Processing Word Analysis and N-Grams

Sample Report:

Introduction

List of Experiments

Target Audience

References

Feedback

Natural Language Processing Lab

- Word Analysis
- Word Generation
- Morphology
- N-Grams
- N-Grams Smoothing
- POS Tagging: Hidden Markov Model
- POS Tagging: Viterbi Decoding
- Building POS Tagger
- Chunking
- Building Chunker

N-Grams

Probability of a sentence can be calculated by the probability of sequence of words occuring in it. We can use Markov assumption, that the probability of a word in a sentence depends on the probability of the word occuring just before it. Such a model is called first order Markov model or the bigram model.

$$P(W_n|W_{n-1}) = P(W_{n-1},W_n)/P(W_{n-1})$$

Here, W_n refers to the word token corresponding to the nth word in a sequence.

N-Grams

Corpus A ⌄

Select Corpus

(eos) Can I sit near you (eos) You can sit (eos) Sit near him (eos) I can sit you (eos)

Find Bigram Probabilities

Find Bigram Probabilities

	(eos)	I	you	him	can	near	sit
(eos)	○	○	○	○	○	○	○
I	○	○	○	○	○	○	○
you	○	○	○	○	○	○	○
him	○	○	○	○	○	○	○
can	○	○	○	○	○	○	○
near	○	○	○	○	○	○	○
sit	○	○	○	○	○	○	○

Submit

Show Answer

	(eos)	I	you	him	can	near	sit
(eos)	0	0.2	0.2	0	0.2	0	0.2
I	0	0	0	0	0.5	0	0.5
you	0.66	0	0	0	0.33	0	0
him	1	0	0	0	0	0	0
can	0	0.33	0	0	0	0	0.66
near	0	0	0.5	0.5	0	0	0
sit	0.25	0	0.25	0	0	0.5	0

Outcome: Students understood Basic concepts of NLP (N-gram, Word Analysis) using Vlab.

Class : BE(IT) **SEM**: VII

Subject: Software Testing and Quality Assurance

Activity: To write test cases for project

Activity Report: A TEST CASE is a set of actions executed to verify a particular feature or functionality of your software application. A Test Case contains test steps, test data, precondition, postcondition developed for specific test scenario to verify any requirement. The test case includes specific variables or conditions, using which a testing engineer can compare expected and actual results to determine whether a software product is functioning as per the requirements of the customer.

Students have designed test case for the project done earlier with expected and actual results

Outcome : Students were able to get good idea of what needs to be done to test a system. They were able to analyze with actual and expected results

Excelssior Education Society's

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A.Y. 2020-21

Topic :
Virtaul Lab data

Even Sem 2021

Sr. No	Year (SE/TE)	Full name of Subject	Date	Name of Faculty	Session conducted	Topic	Number of Experiements Conducted	Website Link from where vlab conducted	Number of Students Attended	Session Video Link
1	TE	Sensor Network Lab	19-4-2021	Prof. Nikhat Fatma Mumtaz Husain Shaikh	3	Basics of Network Simulation, Measuring Network Performance	2	http://vlabs.iitkgp.ac.in/ant/	39	https://drive.google.com/file/d/1wz9hvQ32P Bn3I3zzFOmwtn7reWEqJHlc/view?usp=sha ring
			20-4-2021			Simulating LAN	1	https://vlab-amrita.edu/ind ex.php?sub=78&brch=256 6	21	https://drive.google.com/file/d/1RsWTZZAPaZ zJbLDlt8ldGtd2OTx4ieKeb/view?usp=shari ng
			21-4-2021			Introduction to WSN, Wireless Sensor Network, Time Synchronization	3	https://vlab.amrita.edu/ind ex.php?sub=78&brch=256	7	https://drive.google.com/file/d/16njyDSFi4L 0PKfrUwMcFMwiCo-4p6YtT/view?usp=sharing
2	SE	NETWORKS LAB	15/4/2021	Prof. Dinesh Tharwani	2	Peer to Peer Topology				
						Star Topology	3	http://vlabs.iitb.ac.in/vlabs-dev/labs/ud/computer_networ k/labs/index.php	46	https://drive.google.com/file/d/16ORStCWa PlhZzrTTUlVLKTMZnlvaRzL4/view?usp=sh aring
			22/4/21			IPv4 addressing				
3	SE	Python Lab	20.4.2021	Prof. Manasi Choche & Prof. Kirti Parthe	1	Error Detection and Correction using Hamming Code	1	http://vlabs.iitb.ac.in/vlabs-dev/labs/mit_bootcamp/comp _networks_sm/labs/index.php	53	https://drive.google.com/file/d/17m6rE23db WfKMdWJPdKsXoc8lKEbo1u/view?usp=sh aring
						Arithmatic operations, Built in functions, loops, data types	4	https://python-iitk.vlabs.ac.in/	59	https://drive.google.com/file/d/1UXxRn2RB 2TmiTRw8oNY VNFVCFwU-gEn/view?usp=sharing
4	TE	Software Design Lab	22.4.2021	Prof. Manasi Choche	2	Identifying the requirements, modeling use case diagram	2	http://vlabs.iitkgp.ac.in/se/	25	https://drive.google.com/open?id=1CmK4tV SId9OXV8T7soHSASAFQ-XE3VTs
			23.4.2021			State chart, data flow diagram	2		17	https://drive.google.com/open?id=1C189h OHmpti_iOH-3Cn5Y7UO9y-hQvl
5	SE	Operating System	19.4.21	Prof Amuthavalli Yadav	1	Round robin scheduling algorithm experiment	1	http://vlabs.iitb.ac.in/vlabs-dev/vlab_bootcamp/bootca mp/CRUX/labs/index.html	48	**https://drive.google.com/drivefolders /1Ourj20g42JVuB2vJcNlwu1ZSzg67c Rzb**

Note : You can add more data if
you want related to virtual lab