

Shramajivi Shikshan Prasarak Mandal's ADARSH MAHAVIDYALAYA, OMERGA

NAAC Reaccredited – 'B' Grade with 2.92 CGPA

ARTS, COMMERCE & SCIENCE

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Reg. A.C.C./2022-2023

Date: / /

Dr. Dilip P. Garud (M. Sc. Ph.D.) Principal

1.3.2: Percentage of students undertaking project work/field work/ internships (Data for the latest completed academic year)

1.3.2.1: Number of students undertaking project work/field work / internships

Dept of Botany,

Adarsh College Omerga.

M.Sc.II, Project Allotment 2021- 2022

Sr. No.	Student Name	Name of the Project
1.	Birajdar jaymala	Disease Management by Fungicides
2,	Chinchole Tanuja	Diseases of Potato
3.	Jadhav Anant	Diseases of Sugarcane
4.	Kulkarni Neha	Rhizospehere Mycoflora of Soybean
5.	Lobhe Sumati	Rhizospehere Mycoflora of Jowar
6.	Lohar Bandusha	Diseases of Soybean
7.	Mane Chetan	Diseases of Rice
8.	Mote Ashwni	Diseases of Wheat
9.	Mule Priyanka	Use of Bio-pesticides in Disease Management
10.	Shaikh Parveen	Use of Botanicals as Bio-pesticides
11.	Shinde Vaishnavi	Diseases of Cotton
12.	Ku. Tolnure Pratikshya	Role of Bio-pesticides in disease Management
13.	Ku. Kambale Pornima	Rhizospehere Mycoflora of Sorehum
14.	Ku. Shital Mangrulkar	Diseases of chili

Head, Dept. of Botany

Adarsh Mahavidyalaya,Omerga Fg.Omerga Dist.Osmanabad (MS) Adarsh Mahavidyalaya,Omerga

AHAVIT

PRINCIPAL Adarsh Mahavidyalaya, Omerga Tq. Omerga, Dist. Osmanabad (M.S.)

AADARSH MAHAVIDYALAYA, OMERGA, OSMANABAD 413606 MAHARASHTRA

DISSERTATION SUBMITTED IN THE PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE DEGREE OF MASTER OF SCIENCE IN BOTANY

BY

MISS. PRATIKSHA PRAKASH THOLNURE (M.SC.. II BOTANY) ACADEMIC YEAR 2021-2022

SHRAMJIVI SHIKSHAN PRASARAK MANDAL'S

AADARSH MAHAVIDYALAYA, OMERGA

DEPARTMENT OF BOTANY

TQ OMERGA :- 413606 DIST.OSMANABAD PH :- (02475)2252401

UNDER THE GUIDANCE OF

Professor Dr. Kesare U.T.

(Head of the Department Botany)

Professor and Head Dept. of Botany Adarsh Mahavidyalaya, Omerga

"Different Types Of Sprayers In The Pest Management"

PROJECT REPORT

Submitted to

Dr. Kesare U.T. Head Of Department Of Botany AADARSH MAHAVIDYALAYA, OMERGA

MASTER OF SCIENCE

IN

BOTANY

Submitted by :-MISS. PRATIKSHA PRAKASH TOLNURE

DEPARTMENT OF BOTANY

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ACKNOWLEDGEMENT

I thank the Almighty whose blessings have enabled me to accomplish my dissertation work successfully. The success of the project would have been incomplete without the support of my beloved parents.

I expree my sincere thanks to prof. Dr Umesh Kesare, Head of Botany Department, of Adarsh college Omerga, for her encouragement to do my dissertation work & his cooperation in correcting and commenting on my project. It was her benevolent guidance & directions extended throughout the project. I gained a lot of knowledge under her guidance.

My heartfelt thanks to all my colleagues and friends, who directly or indirectly helped and inspired me during my dissertation.

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DISSERTATION SUBMITTED IN THE PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE DEGREE OF MASTER OF SCIENCE IN BOTANY

BY

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(M.S.C.II BOTANY) ACADEMIC YEAR 2021-2022

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UNDER THE GUIDANCE OF

Professor. Dr. Kesare U.T (HEAD OF THE DEPARTMENT BOTANY) "ROLE OF FUNGICIDES INTHE DISEASE MANAGEMENT OF CROP PLANTS"

PROJECT REPORT ON PLANT PATHOLOGY

* Submitted to * DR. KESARE U.T.

HEAD OF DEPARTMENT OF BOTANY ADARSH

MAHAVIDYALAYA, OMERGA

MASTER OF SCIENCE

IN BOTANY

* SUBMITTED BY *

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DEPARTMENT OF BOTANY

ADARSH MAHAVIDYALAYA, OMERGA, OSMANABAD 413606 MAHARASHTRA

ROLE OF FUNCICIDES INTHE DISEASE MANAGEMENT OF GROP PLANTS"

PROJECT REPORT ON PLANT PATHOLOGY

MAHAVIDYALAYA,OMERGA

MASTER OF SCIENCE IN BOTARY SUBMITTED BY * MISS. SHITAL ADSULE

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Miss. Pratiksha Prakash Tolnure

"DISEASES OF POTATO, ITs USE IN DISEASE MANAGEMENT

A

PROJECT REPORT

Submitted to Dr Kesare U.T Professor HEAD OF DEPARTMENT(BOTANY) ADARSH MAHVIDYALAYA, OMERGA.

MASTER OF SCIENCE

IN

BOTANY

SUBMITTED BY

MR. Wagh Kumarsagar Bhagwanrao



ADARSH MAHAVIDYALAYA , OMERGA OSMANABAD , 413606 MAHARASHTRA "DISEASES OF POTATO, IT'S USE IN DISEASE MANAGEMENT"

PROJECT REPORT

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DISSERATION SUBMITTED IN THE PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE DEGREE OF MASTER OF SCIENCE IN BOTANY

BY

MR. Wagh Kumarsagar Bhagwanrao

(M.Sc.BOTANY)

ACADEMIC YEAR 2021-2022

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Professor and Hode Dept. of Botany Adarsh Nahavidralata, Optrga

DECLARATION

I the undersigned, hereby declare that the project entitled "DISEASES OF POTATO, ITS USE IN DISEASE MANAGEMENT is written by me and submitted to Department of Botany, Adarsh Senior College, Omerga, for the award of M.Sc Degree in Science of Dr. Babasaheb Ambedkar Marthwada university, Aurangabad (as a part of syllabus). The present research work is of original nature and has not been submitted for the award of any degree of any University.

Professor Dr Kesare U.T

Date : Place :Omerga

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Professor Dr Kesare U.T M.Sc – II Year

Date -

Place : Omerga

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Professor Dr Kesare U.T

Date : Place :Omerga

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Sr.	Name of student	Name of the projects
No.		
1	Adiba Fatima Iqbal	Bio-molecular modelling utilizingRasMol and PDB
		resources for various enzymesLysozyme
2	Bachke Kisan Martand	Bio-molecular modelling utilizing RasMol and
		PDB resources for various enzymes Lysozyme
3	Balwade Aishwarya Somnath	Bio-molecular modelling utilizing RasMol and
		PDB resources for various enzymes Catalase
4	Bansode Tanaji Babruvan	Bio-molecular modelling utilizing RasMol and
		PDB resources for various enzymes Catalase
5	Bhujbal Shubham Dattatray	Bio-molecular modelling utilizing RasMol and
		PDB resources for various enzymes Oxidase
6	Birajdar Aishwarya	Bio-molecular modelling utilizing RasMol and
	Madhukarrao	PDB resources for various enzymes Oxidase
7	Birajdar Vishal Dattatrya	Bio-molecular modelling utilizing RasMol and
		PDB resources for various enzymes Caseinase
8	Dhole Vishnu Rajkumar	Bio-molecular modelling utilizing RasMol and
		PDB resources for various enzymes Caseinase
9	Fulari Nasrin Dastagir	Bio-molecular modelling utilizing RasMol and
		PDB resources for various enzymes Gelatinase
10	Gavali Umesh Rajendra	Bio-molecular modelling utilizing RasMol and
		PDB resources for various enzymes Gelatinase
11	Gawali Pratiksha Pralahdrao	Bio-molecular modelling utilizing RasMol and
		PDB resources for various enzymes Trypsin
12	Gophane Ajit Sugriv	Bio-molecular modelling utilizing RasMol and
		PDB resources for various enzymes Trypsin
13	Gumte Swapnali Devidas	Bio-molecular modelling utilizing RasMol and
		PDB resources for various enzymes Pepsin
14	Hore Parmeshwar Dadarao	Bio-molecular modelling utilizing RasMol and
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16	Jagdale Pranali Tatyasaheb	Bio-molecular modelling utilizing RasMol and
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1/	Jamadar Kashinath Yadav	Use of 16S rKNA sequence for the Identification of
10	V-11-4- NI42: C1 '	bacterial species by using BLAS1 of Sequence 1
18	Kaidate Nitin Shivaji	Use of 165 rKNA sequence for the Identification of
10	Kala Daaral' V'l	bacterial species by using BLAS1 of Sequence 1
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		bacterial species by using BLASI of Sequence 2

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		bacterial species by using BLAST of Sequence 3
22	Mote Arjun Shrimant	Use of 16S rRNA sequence for the Identification of
		bacterial species by using BLAST of Sequence 3
23	Patel Farin Rayaz	Use of 16S rRNA sequence for the Identification of
		bacterial species by using BLAST of Sequence 3
24	Patil Arjun Sunil	Use of 16S rRNA sequence for the Identification of
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25	Patil Mithun Tanaji	Use of 16S rRNA sequence for the Identification of
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26	Patil Prapti Hanumant	Use of 16S rRNA sequence for the Identification of
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33	Thombare Uday Pratap	Use of 16S rRNA sequence for the Identification of
		bacterial species by using BLAST of Sequence 8

Dr. Babasaheb Ambedkar Marathwada University,

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Adarsh Mahavidyalaya, Omerga. Dist. Osmanabad

Department of Microbiology

Project for M.Sc. degree in Microbiology

Bio-molecular modelling utilizing RasMol and PDB resources for various enzymes Submitted by Kum. ADIBA FATIMA IQBAL

Under the supervision of

Dr. Mali S. B.

2021-22



IQAC Co-Ordinator Adarsh Mahavidyalaya,Omerga Tg.Omerga Dist.Osmanabad (MS) PRINCIPAL Adarsh Mahavidyalaya, Omerga Tq. Omerga, Dist. Osmanabad (M.S.) Adarsh Mahavidyalaya Omerga, Dist. Osmanabad

Department of Microbiology Certificate

Project work for paper - XV and XVI

Certified that Kum. ADIBA FATIMA IQBAL have satisfactorily completed the course of project work in M. Sc. II YEAR (SEMESTER IV) prescribed by Dr. B. A. M. University, Aurangabad under my supervision in the Microbiology Laboratory during the Academic Year 2021-22



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Signature of the Examiner

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PRINCIPAL Adarsh Mahavidyalaya, Omerga Tq. Omerga, Dist. Osmanabad (M.S.)

Bio-molecular modelling utilizing RasMol and PDB resources for various enzymes

Abstract

The availability of an excellent and freely available molecular visualisation package authored by Roger Sayle RasMol, coupled to the protein data bank (PDB) resource of molecular structure data makes the visualization and manipulation of molecular data accessible to the Internet community. Tutorials based on almost any protein deposited in the PDB can be utilized as an aid to understand bio-molecular modelling. The utility of these resources is illustrated for modelling and visualization of enzymes lysozyme, catalase, oxidase, caseinase, gelatinase, trypsin, pepsin, α -amylase, urease and hyluronidase.

Keywords: RasMol, PDB, Lysozyme, catalase, oxidase, caseinase, gelatinase, trypsin, pepsin, α -amylase, urease, hyluronidase.

1. Introduction

The detailed molecular diagrams and illustrations available in some of the excellent biochemistry textbooks currently available can be accessible to anyone with internet capability through the use of molecular information and good visualization and manipulation software packages which are freely available over the web. Individual students can utilize the visualization programmes to investigate the 3D structure of proteins, zoom in on the active site of enzymes, observe groups at the active site or involved in binding or look at the molecular dimensions between groups on a protein. Primary data on 3D structure of proteins are available at the protein data bank (PDB), the single international repository for the processing and distribution of 3D macromolecular structure data, mostly obtained by X-ray crystallography or solution nuclear magnetic resonance (NMR). The empirical results of these experimental methods accurately describe the 3D structure of a protein molecule in the state in which measurements were made. To illustrate the modelling capabilities of available programmes data on the 3D

structure of the enzymes lysozyme, catalase, oxidase, caseinase, gelatinase, trypsin, pepsin, α -amylase, urease and hyluronidase will be used. Even rather small proteins contain very complex 3D structures which are difficult to imagine from 2D representations. To determine the 3D structure of proteins such as enzymes the location of each atom in the macromolecule must be positioned, a process generally carried out via X-ray diffraction or solution NMR analysis. The data representing the 3D structure in its raw form is a set of coordinates representing the atomic co-ordinates of each atom of the protein with respect to a set of axes. These co-ordinates are given with respect to the Cartesian axes X, Y, and Z. Generally, because there are atoms of nitrogen, carbon, hydrogen, oxygen and sulphur in proteins the structure can become quite complicated even for small proteins. It is often the practice to draw only the α -carbon atom of each amino acid with the position of each carbon atom linked together giving a representation of the protein backbone. The PDB database contains files of such atomic co-ordinates which can be represented and manipulated via molecular visualization software.

For this project some background on the composition, structure and function of the macromolecule is useful. Such details on lysozyme, catalase, oxidase, caseinase, gelatinase, trypsin, pepsin, α -amylase, urease and hyluronidase can be obtained.

Protein structure is the biomolecular structure of a protein molecule. Proteins are polymers – specifically polypeptides -sequences formed from various L- α -amino acids. Each unit of a protein is called an amino acid residue because it is the residue of every amino acid that forms the protein by losing a water molecule. By convention, a chain under 40 residues is often identified as a peptide, rather than a protein. To be able to perform their biological function, proteins fold into one or more specific spatial conformations, driven by a number of non-covalent interactions such as hydrogen bonding, ionic interactions, Van der Waals forces, and hydrophobic packing. To understand the functions of proteins at a molecular level, it is often necessary to determine their three-dimensional structure. This is the topic of the scientific field of structural biology, which employs techniques such as X-ray crystallography, NMR spectroscopy, and dual polarization interferometry to determine the structure of proteins.

Protein structures range in size from tens to several thousand residues. By physical size, proteins are classified as nanoparticles, between 1–100 nm. Very large aggregates can be formed from protein subunits.

A protein may undergo reversible structural changes in performing its biological function. The alternative structures of the same protein are referred to as different conformations, and transitions between them are called conformational changes.



Primary structure

The primary structure of a protein refers to the linear sequence of amino acids in the polypeptide chain. The primary structure is held together by covalent bonds such as peptide bonds, which are made during the process of protein biosynthesis or translation. The two ends of the polypeptide chain are referred to as the carboxyl terminus (Cterminus) and the amino terminus (N-terminus) based on the nature of the free group on each extremity. Counting of residues always starts at the N-terminal end (NH₂-group), which is the end where the amino group is not involved in a peptide bond. The primary structure of a protein is determined by the gene corresponding to the protein. A specific sequence of nucleotides in DNA is transcribed into mRNA, which is read by the ribosome in a process called translation. The sequence of amino acids was discovered by Frederick Sanger. The sequence of a protein is unique to that protein, and defines the structure and function of the protein. The sequence of a protein can be determined by methods such as Edman degradation or tandem mass spectrometry. Often, however, it is read directly from the sequence of the gene using the genetic code. We know that there are over 10,000 proteins in the human body which are composed of different arrangements of 20 types of amino acid residues. It is strictly recommended to use the words "amino acid residues" when discussing proteins because when a peptide bond is formed, a water molecule is lost, so proteins are made up of amino acid residues. Posttranslational modification such as disulfide bond formation, phosphorylations and glycosylations are usually also considered a part of the primary structure, and cannot be read from the gene. For example, insulin is composed of 51 amino acids in 2 chains. One chain has 31 amino acids, and the other has 20 amino acids

Secondary structure

Secondary structure refers to highly regular local sub-structures. Two main types of secondary structure, the alpha helix and the beta strand or beta sheets, were suggested in 1951 by Linus Pauling and coworkers. These secondary structures are defined by patterns of hydrogen bonds between the main-chain peptide groups. They have a regular geometry, being constrained to specific values of the dihedral angles ψ and ϕ on the Ramachandran plot. Both the alpha helix and the beta sheet represent a way of saturating all the hydrogen bond donors and acceptors in the peptide backbone. Some parts of the protein are ordered but do not form any regular structures. They should not be confused with random coil, an unfolded polypeptide chain lacking any fixed three-dimensional structure. Several sequential secondary structures may form a "supersecondary unit".

Tertiary structure

Tertiary structure refers to the three-dimensional structure of a single, double, or triple bonded protein molecule. The alpha-helixes and beta pleated-sheets are folded into a compact globular structure. The folding is driven by the *non-specific* hydrophobic interactions, the burial of hydrophobic residues from water, but the structure is stable only when the parts of a protein domain are locked into place by *specific* tertiary interactions, such as salt bridges, hydrogen bonds, and the tight packing of side chains and disulfide bonds. The disulfide bonds are extremely rare in cytosolic proteins, since the cytosol (intracellular fluid) is generally a reducing environment.

Quaternary structure

Quaternary structure is the three-dimensional structure of a multi-subunit protein and how the subunits fit together. In this context, the quaternary structure is stabilized by the same non-covalent interactions and disulfide bonds as the tertiary structure. Complexes of two or more polypeptides (i.e. multiple subunits) are called multimers. Specifically it would be called a dimer if it contains two subunits, a trimer if it contains three subunits, a tetramer if it contains four subunits, and a pentamer if it contains five subunits. The subunits are frequently related to one another by symmetry operations, such as a 2-fold axis in a dimer. Multimers made up of identical subunits are referred to with a prefix of "homo-" (e.g. a homotetramer) and those made up of different subunits are referred to with a prefix of "hetero-", for example, a heterotetramer, such as the two alpha and two beta chains of hemoglobin.

Protein structure determination

Around 90% of the protein structures available in the Protein Data Bank have been determined by X-ray crystallography. This method allows one to measure the threedimensional (3-D) density distribution of electrons in the protein, in the crystallized state, and thereby infer the 3-D coordinates of all the atoms to be determined to a certain resolution. Roughly 9% of the known protein structures have been obtained by nuclear magnetic resonance techniques. The secondary structure composition can be determined via circular dichroism. Vibrational spectroscopy can also be used to characterize the conformation of peptides, polypeptides, and proteins. Cryo-electron microscopy has recently become a means of determining protein structures to high resolution, less than 5 angstroms or 0.5 nanometer, and is anticipated to increase in power as a tool for high resolution work in the next decade. This technique is still a valuable resource for researchers working with very large protein complexes such as virus coat proteins and amyloid fibers. A more qualitative picture of protein structure is often obtained by proteolysis, which is also useful to screen for more crystallizable protein samples. Novel implementations of this approach, including fast parallel proteolysis (FASTpp), can probe the structured fraction and its stability without the need for purification

RasMol Features

RasMol is a program for molecular graphics visualization originally developed by Roger Sayle. This site is provided for the convenience of users of RasMol and developers of open source versions of RasMol. The site itself is provided courtesy of Bernstein + Sons. Maintenance of RasMol, much of the development, and integration of modifications provided by the community is done at the ARCiB laboratory at Dowling College.

RasMol is a molecular graphics program intended for the visualisation of proteins, nucleic acids and small molecules. The program is aimed at display, teaching and generation of publication quality images. RasMol runs on wide range of architectures and operating systems including Microsoft Windows, Apple Macintosh, UNIX and VMS

systems. UNIX and VMS versions require an 8, 24 or 32 bit colour X Windows display (X11R4 or later). The X Windows version of RasMol provides optional support for a hardware dials box and accelerated shared memory communication (via the XInput and MIT-SHM extensions) if available on the current X Server.

The program reads in a molecule coordinate file and interactively displays the molecule on the screen in a variety of colour schemes and molecule representations. Currently available representations include depth-cued wireframes, 'Dreiding' sticks, spacefilling (CPK) spheres, ball and stick, solid and strand biomolecular ribbons, atom labels and dot surfaces.

The X Windows version of RasMol provides optional support for a hardware dials box and accelerated shared memory communication (via the XInput and MIT-SHM extensions) if available on the current X Server.

The program reads in molecular coordinate files and interactively displays the molecule on the screen in a variety of representations and colour schemes. Supported input file formats include Protein Data Bank (PDB),

2. Methods

2.1. Obtaining molecular data from the PDB

The PDB resource can be accessed at http://www.rcsb.org/pdb/. At the home page one can interrogate the database using the PDB ID of the molecule (if known) or utilising the Search Lite facility using simple keywords. In this example click on Search Lite. This opens a window which requires search input. One can type in catalase, oxidase, caseinase, gelatinase, trypsin, pepsin, α -amylase, urease and hyluronidase, click search and the search returns with possibilities. If one clicks on explore one reaches the structure explore window for enzymes.

This gives details on the structure, the authors, the unit cell, number of residues, the atoms and the resolution. One can view the structure at the PDBs utilizing the View menus but for this exercise, we wish to download. Click on download/display. Here one has an option of looking at the display, the structure or clicking on text under the PDB heading. This will display a text edition of the data in the PDB which contains the atomic co-ordinates. In the section, download the structure choose the uncompressed "pdb" by selecting it with the mouse, right click and select save target as. It should default to .pdb

any name can be chosen and indeed any location, however, it must be saved as a .pdb ". RasMol only reads .pdb " and therefore it is necessary to save all from the PDB as .pdb .

2.2. Obtaining RasMol

RasMol is a powerful educational tool for showing the structure of DNA, proteins and smaller molecules. The program reads in molecular co-ordinate and interactively displays the molecule on the screen in a variety of representations and colour schemes. The programme was initially written by Roger Sayle and E. J. Milnerwhite and developed at the University of Edinburgh's Biocom- puting Research Unit and the Biomolecular Structure Department at Glaxo Research and Development, Greenford, UK. Information for getting and installing RasMol can be obtained at http://www.umass.edu/microbio/rasmol/getras.htm.

Various versions of RasMol can be downloaded for various operating systems including PC/windows, MAC, VAX, Unix, Acorn RISC OS. For example if downloading version 2.6 for PC or Windows one has the option of downloading a 32 bit version for Windows 95 or NT or higher or indeed a 16 bit version for windows 3.1 for those with less powerful machines. If one clicks on the download hypertext link one will be asked which option one requires. Upon clicking Get 32 bit RAS Win one will be asked whether one wishes to save to disk. The 32 bit version can be saved.

2.3. Working with RasMol

Quick start tutorials on how to use RasMol can be viewed at http://www.umass.edu/microbio/rasmol/rasquick.htm. To start RasMol under Microsoft Windows, double click on the RasMol icon in the program manager (or form the saved #oppy). When RasMol starts, the program displays a single main window (the display window) with a black background on the screen and provides the command line window minimised as a small icon at the bottom of the screen. The command line or terminal window may be opened by double clicking on this RasMol icon. The Command Line allows the user to denote various parts of the bio-molecular structure one wants to interact with and will be used in some of the examples described later. To open a .pdb " within RasMol go to the "le menu, click open. One can now open any of the PDB " one wishes having saved them from the PDB database. For the purpose of this example this will be the 1AZF.pdb " we saved earlier. The molecular structure should now be displayed within Ras-Mol. You will notice, if you use the PC version, that the two RasMol icons are at the bottom one of these is the display, the other is the RasMol command line.

3. Results and discussion

3.1. Using and exploring the display options

Many different kinds of display options are available to model the .pdb some examples are outlined below

1. Holding down the left mouse button rotate the molecule in any and all directions to visualize different parts of the molecule.

2. In the Display Menu alter the molecular display by selecting Space Ribbons, Cartoons, Wireframe or Ball and Stick.

3. Selecting the Display, Cartoons options select different colouring modes such as structure to view an outline of the macromolecule with a-helical regions and b-sheet regions

4. Using the options menu select stereo to get a stereo view of the molecule.

5. Holding down the right mouse bottom allows one to move the molecule to different parts of the screen.

6. Holding down the shift key and moving the mouse forward miniaturizes the display while moving it back blows up the display allowing the viewer to zoom in on the molecule. This can be particularly useful if one selects wire-frame within the Display option and set- ting Labels On within the Options menu. The positions of particular amino acids are clearly labelled and one can zoom into the molecule at these positions

Any of the molecular representations can be saved and exported using the export menu and selecting the option that best suits, such as a gif or graphic interface for future display in a presentation format such as Micro- soft's Power Point. In the menu if one selects information one gets a brief description of the molecule which can be useful if looking at lots of structures. From the "le menu one can also print the display

3.2. Using the command line options

Now for some of the really interesting things RasMol can do. Upon activating the RasMol command Line icon at the bottom of the desktop one enters the command line interface. At the RasMol icon (RasMol') one can enter specific commands RasMol ZAP clears display of a molecule if one wishes to load another. There are a number of commands which will allow better visualisation of the bio-molecule.

RasMol Colour blue or red or other colours will colour the molecule RasMol' Set background yellow (or other colours allow one to set coloured backgrounds)

RasMol' Restrict 34-55 command restricts the display to just that part of the molecule between the specified amino acids. One can zoom in on this section and use the options to label or vary the display options to visualise this part of the molecule more closely. In the case of lysozyme the active site and catalytic groups are contained here. By selecting wireframe display, label within options, and moving the fragment by holding down the right mouse button and rotating the catalytic groups within enzyme structure can be visualised and their orientation relative to each other observed. Using shift and pulling back the mouse one can zoom in to this part of the molecule.

RasMol' Set picking distance allows the distance between two crosshair points chosen to be calculated.

RasMol' Set picking monitor and using the mouse to point to two points on the display allows calculation of the atomic distances between these groups or residues. At any stage particular views of a molecule utilising the commands outlined above can be saved and viewed later

RasMol is a powerful visualisation and manipulation package for display of a range of macromolecules including drugs, DNA and proteins. Using a tutorial such as outlined for enzyme coupled with a detailed knowledge of its structure and catalytic mechanism available in biochemistry textbooks, the details of the groups involved in binding substrate and catalysis can be explored by individual students. In principle any macromolecule in the PDB or other macromolecular structural database could be investigated in a similar manner

Result

Following are the different 3D structures of enzymes Lysozyme, catalase, oxidase, caseinase, gelatinase, trypsin, pepsin, α -amylase, urease, hyluronidase.

Lysozyme (Sticks, Spacefill and Ball & Stick model)







Catalase (Sticks, Spacefill and Ball & Stick model)







Oxidase (Spacefill, Ball &stick and ribbon model)







Caseinase (Spacefill, ribbons & strands model)







Gelatinase (Spacefill, ribbons & strands model)






Trypsin (Spacefill, ribbons & strands model)







Pepsin (Spacefill, ribbons & strands model)







α -amylase (Spacefill, ribbons & strands model)







Urease (Spacefill, ribbons & strands model)







Hyluronidase (Spacefill, ribbons & strands model)







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HOTEL INFORMATION MANAGEMENT SYSTEM

PROJECT REPORT

Subimmited to Mr. Mulajkar A.R. Mrs. Gund B.B. Mr. Reddy Sanath Mr. Takale Sir

ADARSH MAHVIDYALAYA, OMERGA.

MASTER OF SCIENCE

IN

Computer Science

SUBMITTED BY :

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Adarsh Mahavidyalaya, Omerga Department of computer Science M.Sc II Year Project Report 2021-22

Sr.No.	Name of Student	B. C.
1	BHOSALE ANAGUN	Project Name
2	BONDER SUDDAY	a second second second second second
3	GAIKWAD NIVIER BUBHASH	Library Management System
4	IAGADE VISUAL BARRIER	
5	IAMADAR ABOUL HANNESHWAR	Hospital Management
6	KAMBLE AMOL SUDUACUDAG	trest in a second second
7	KILLARE GANESU DAVANAND	online book shop
8	KULKARNI SHRADDUA RAIFNDDA	
9	MUGLE VHAVKIMAR SUDVAVAR	Online Lottery Management
10	MANE PANKAI TANAH	
11	SURYAWANSHI SHITAL VASANT	E-Billing
12	PANCHAL DIPALI DHONDIRAM	5 bring
13	MULLA AFREEN RABBANI	10.000
14	MULLA AMREEN RABBANI	RTO Management
15	PATIL NISHIGNADHA BASWARAJ	County top aliting
16	MATOLE RANDHIR VYANKAT	Grack tracking
17	SWAMI KEDARNATH KASHINATH	Pailway recording System
18	KAMBLE SAILESHKUMAR BALAJI	Rauway reservation system
19	JADHAV VIKAS NANDKUMAR	Hotel information managemen
20	SHINDE GANESH RAM	System
21	KAMBLE VIKAS SANJAY	372.00
22	CHILVANT AVDHUT BALAJI	Online Auction System
23	DHANURE GITA VYANKAT	
24	KAMBLE PRIYA SANJAY	
25	KAMBLE RAJAT SHIRISH	Online E-book Maker
26	JAGDALE GAJANAN SUDHAKAR	
27	JADHAV VAIBHAV JAIVANT	E-Authentation System
28	GAIKWAD PRATIKSHA VINAYAK	
29	HIREMATH ABHISHEK RAVIKIRAN	PG-CET system
30	BOLSHETTE GAURAV VAIJINATH	and the second sec

dutalcale Dept. Of Computer Sch Adarsh Sr.College Omerie

ShramjiviShikshanPrasarkMendel's

AdarshSenior College Omerga



Department of Computer Science

Project Report On

HOTEL INFORMATION MANAGEMENT SYSTEM

This is to certify that Mr. Shinde Ganesh Ram, Jadhav Vikas Nandkumar, Kamble Vikas Sanjay Students of M.Sc. 2nd Year Completed Project Report on Hotel Information Management System successfully in year 2021-2022 Under Dr.B.A.M. University, Aurangabad.

Guide



Head of Dept.

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ABSTRACT

This project examines the aspect of the hospitality industry which is Hotel management. In the 21st century the use of the internet, computers and other electronic devices have made handling different jobs and aspects of management very easy. This project is the design and implementation of an electronic hotel management system that provides proper management of data and transactions in a centralized and organized manner and also provides a user friendly interface with which the user can interact easily with the just little or elementary knowledge of operating computers.

This project is designed to create a platform that allows booth the user and administrator to keep track of transactions like room reservations, room booking, financial administration of the hotel, staff record keeping, online reservation and other day to day activities involved in the running and management of a hotel. The implementation is based on the requirements for a hotel management system. The project work is divided into five major categories which are; Front Desk, Accommodation, Catering, Finance & Account and Personnel Staff Record (Human resource management).

This project accomplished the task of building a system that ensures accurate record maintenance which was done through proper identification of customers and the proper designation of user functions with most of the processes being done automatically. An electronic hotel management information system is required to assist management of data in the hospitality industry and also to make the entire hotel management process easier.

The project was designed with the use of Microsoft visual Studio which is an integrated development environment made by Microsoft. It can be used to develop console and graphical user interface applications along with windows form application websites. The database system was created using Microsoft SQL server (MSSQL).

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Abstract

Nitrobenzene is a chemical material use in the manufacture of various plastic monomers and polymers, rubber chemicals, drugs, pesticides, soaps, and as a solvent in petroleum refining and manufacture of cellulose ethers and cellulose acetate...etc.

Nitrobenzene is manufacture commercially by the direct nitration of benzene using a mixture of nitric acid and sulfuric acid, many processes for this manufacture but the more safety, economic and lower capital cost is the continuous isothermal nitration process.

This report is so limited to academic use .most of data are available from internet, so the authenticity of data has to been checked by the reader himself.

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Production of Technical
" <u>Nitro Benzen</u> "
Design Thesis Submitted By
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Exam Seat No-NAF668151
PRN.: 2018015200530954
ACADEMIC YEAR 2020-2021
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Adarsh Senior College,Omerga Dept of Industrial Chemistry B.Sc III Year 2020-21

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-	12	NAVALE VINOD VIJAYKUMAR	AB.
-	13	PANCHAL PRADUMNA SURYAKANT	Ammonia
	14	PATIL AKASH UDDHAV	AB.
1	15	PATIL PRAJWAL DILIP	Ammonia.
	16	PATIL SHRIKANT HEMANTRAO	Bleaching public
L	17	PATIL SOURABH JAYANT	Bleaching Powder
	18	SHAIKH SURAJ RAJAK	urea.
L	19	SHEVARE SURAJ BALAJI	AB.
	20	SOMWANSHI SUMIT VILAS	Ethyl. Aldrel
	21	SURYAWANSHI RUTVIK VASANT	Acetone
Ł	-22	TELANG VISHWAJEET GANESH	Hesoy
1	23	WAKALE VISHAL SHRAVAN	Coment
	24	ECHE MAHESH DHANAJI	Acetene
L		TANGA DIANAJI	Actione

Dr. Babasaheb Ambedkar Marathwada University, Aurangabad

Revised Syllabus of B.Sc. V & VI Semester Industrial Chemistry (Effective from the Academic Year 2015-2016) i.e. Since June 2015 & onwards.

B.Sc. Industrial Chemistry

Three Year Degree Course (Semester Pattern) Year 2015-2016

Year	Paper	Course Name	Hours	Marks
B.Sc. Semester V	XIII	Unit Processes in Organic	45	50
B.Sc. Semester V	XIV	Process Equipment Design	45	50
B.Sc. Semester V	XV	Practicals	120	100
B.Sc. Semester Vl	XVI	Unit Processes in Inorganic Synthesis & Industrial Safety	45	50
B.Sc. Semester VI	XVII	Process Instrumentation & Plant Utilities	45	50
B.Sc. Semester VI	XVIII e	Design Thesis	120	100

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AHAV

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B.Sc. Semester VI- Industrial Chemistry Paper XVIII - Design Thesis Marks :100 Hours : 120

 Submission of Design Thesis on Technical Product
 Writing of Synopsis on Thesis Write brief information about History, Physical &
 Chemical Properties, raw materials, methods of production, Manufacturing process description, Flow sheet, Material balance & Uses

3. Industrial Visit & Submission of visit report 20

4. Viva-voce

20

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	2nd Washing process Material Balance
	Reconcentrator Material Balance
	Distillation Material Balance

2



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Department of Industrial Chemistry

Production of Technical

Acetic Acid

Design Thesis Submitted By

GAVDE PRAMOD DNYANESHWAR

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Exam Seat No-NAF657317

PRN.: 2018015200530327

ACADEMIC YEAR 2021-2022

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I would like to express my sincere grateful thanks to my Guide Mr.Guide Dr.S.K.Patel, Mr.M.J.Mulla Head of the department of chemistry for his able valuable guidance.

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Mr. GAVDE PRAMOD DNYANESHWAR

B.Sc.IIIrd Year Department of Chemistry Adarsh Mahavidyalaya Collage, Omerga

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INTRODUCTION

Acetic acid is a mono carboxylic acid having general formula ch_3 it's contain carboxyl group (c=o) & hydroxyl group (oh) in I U.P.A.C. system it is called as ethnic acid.

If is over in the fruit and which have become sour as the result of ferment action. Is the chief constituent of vinegar.

It is produced 2 ${}^{1}A$ billion punts per year in the united state. The major use is the synthesis of vinyl I acetate, which is used in preparation of latex paints.

HISTORY					
The major part of the world produce acetic acid bt synthesis of using following process.					
1. Oxidization of acetaldehyde.					
2. Direct oxidization of ethanol I.					
3. Hydrocarbon oxidization.					
4. Methanol I carbon monoxide process.					
The acetic acid contain carbon I (c=o) & hydroxyl I(-Oh) group The production of					
acetic acid from air oxidization of					
acetaldehyde first is operated in					
1911 in Germany an 1920 united state					

PROPERTIES.

1. Acetic acid is color less, corrosive liquid with vinegar dour and sour testes. I

2. It has BP 118 c and MP 16.6 c. |

3. The vapor are suffocating & cause damage to the lunge.

4. Pure acetic acid is called glacial acetic acid, because it forms on icelike soiled.

5. If is soluble in water, either & ethanol.

6. The molecular weight of acetic acid is 60.
Physical properties Value
1. Normal BP 118c
2. Critical temp 594.45

3. Critical value (cc/r)	2.85
4. Surface tension	27.6
5. Head of dilution in water	6.3
6. Normal MP	16.6 с

CHEMICAL PROPERTIES.

The chemical properties are acetic acid is as fallows.

1)When acetic acid reacts with sodium hydroxide, sodium carbonate to from sodium salt.

1. Ch₃ COOH + ----- CH₃ COONA + H₂

2. 2CH₃ COOH+ NA₂ CO-----CH₃ COONA +H₂0+CO₂

3. CH₃COOH+ N HCO₃------ CH₃ COONA +

 $H_2O + CO_2$ &it can be regenerated by treating salt with dilute mineral acid.

4. CH₃COONA+ HCL----- CH₃-COOH +

NACL

2) When acetic acid reacted with phosphorus halides or thinly chlorideto form acid halides.

1. CH₃- COOH + PCL ------ CH COOCL + POCL₃ + HCL

2. CH_3 - COOH + SOCL₂------ CH_3 COL + SO₂ + HCL

Acetic acid

2021-22

3) when acetic acid reacted with NH_3 to given ace amide.

CH₃-COOH + NH₃ C-ONA ------ CH₃- C-ONA⁺⁴ ------

 $CH_3 - C - NH_2 + H_2O$

4).Acetic acid reacted with ethanol to form ethyl acetate

 $CH_{3}-COOH + C_{2}H_{5}OH ----- CH_{3}COOC_{2}H_{5} + H_{2}O$

5) When the reaction of acetic acid takes place in presence of to from ethanol

 $CH_3 - COOH ----- C_2H_5 - OH$

6) When dehydration of acetic acid in presence of phosphoruspent oxide to form acetic anhydride.

 $P_2 0_5 2CH_3$ - COOH — CH₃- C- OCH₃ + H₂0

SELECTION OF PROCESS

The following method are used for the large scale preparation for acetic acid '

1) By air oxidization of butane.

Acetic acid is manufacture by air oxidization of butane in the presence of cobalt acetate catalyst.

But the production of this reaction has not pure product & the product yield is

80% CH₃ CH₃CH₂ - CH₃ + 0₂-----CH₃(C0)₂ CO CH₃COH 200 C

2) Acetic acid from L.P.G :-

From this methods we can also prepare acetic acid but not get pure product co- product are from by this method are formic acid photonic acid, butyric acid.

Suneinic acid water product yield is 75% of liquid product purity is notmantain material of construction stainless steel.

3) Acetic acid from methanol

This also one of the good method for preparation of acetic acid from

Methanol because co-product are fromProduct yield : 85%

Product purity :95%

Martial of construction : cooper, zirconium

Acetic acid

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4) Acetic acid from ethanol:-

From this method we can produce acetic acid. Corporducts are formed by

This method $C0_2$ & H20 catalyst acetate solvent glasses acetic acid at about 60-125 c

Product yield is 90% material of construction stainless steel.5) Direct oxidization of hydro carbons.

Direct oxidization produces acetic acid it the a number of by product in the united states the major raw material is n- butane although world wide.

World wide considerable qua entities of 2PG & nuptial are used Butylenes oxidization has been piloted but no commercial operation has been accused the optimum choice of market & process economic in general it is attempted to mini miser the less marketable by product such as formic acid & to provided.

Some flexibility to satisfy market for methyl ethyl ketene ethyl

Acetate a certain & acetaldehyde plant location is largely by raw materials availability & gathering cotton is largely by raw materials availability & gathering cost.

6) Air oxidization of acetaldehyde :-

Air oxidization of acetaldehyde produce of acetic acid with little waste & choice of acetic anhydride as by product.

This is the good method for preparation of acetic acid.

The product of acetic acid from air oxidization of given following condition & materials

Catalyst: manganese acetate Phase : liquid Reactor type: tower Temp C (maintenance): 50° c to 70°c Pressure : 1 to 6 atm Reaction time :12 hours Product purity :99%

Materials of construction : stainless steel or aluminum.

USES

- 1) Acetic acid I used chiefly to produce acetic anhydride for cello use acetate manufacture.
- 2) Cellulose acetate & pharmaceuticals. Performs dyes plastic & pharmaceuticals.
- It is also used in preparation of insecticide's photo graphics chemical food additives as vinegar natural latex coagulant oil-well acidized & in textile printing.
- 4) Acetic acid is used for making white lead.

5) In mordant dyeing hug's quantity of (CHSC04).

A-1 (CHS CAO)2 CU & (CH3CCO) 3 Fe- used there aquatint are produced from acetic acid.

MANUFACTURING PROCESS

The preparation of acetic acid from acetaldehyde oxidation by oxygen or air product acetic acid with little waste & a choice of acetic of acetic hydride as a by product.

This is most good method for preparation of acetic acid preparation of acetic acid.

Catalyst	Maingandseacetate
Phase	liquid
Reactor used	tower
Solvent used	acetic acid
Temp° c	60 to 70°c
Pressure	Ito 6 atm
Reaction time	12 hours
Heat evolved	ves
Product yield	95 to 98%
Product purity	99%
Materials of construction	stainless steel or aluminum
Reactor	
Process description	


RAW MATERIALS

1) Aceted eyed

2) Manganese's acetate

Acetaldehyde oxidation by oxygen or air produces acetic acid

With little waste & choice of acetic anhydride as by product world wide.

This process has accounted for most of the synthetic aciteic acid produced & considerable amount of acetic acid anhydride on a for smaller scale.

Acetaldehyde for per acetic acid produces me by product acetic acid.

The fig. is indicate that the acetaldemude can be produces by ethylene butane.

The economical process for preparation of acetic acid process for preparation of acetic acid used of liquid phase so portion of 60 to 70 c & 1 to 6 atm catalyzed by about 0.1 manganese acetate cobalt acetate is generally used.

When by product acetic anhydride is desire at the higher tem premature of over pressure apply to the use of oxygen as lower temp a true & higher pressure utilize air the 95 to 98 % acetic acid are obtained by losses being mainly to carbon oxide in miner amount of methyl acetate. Finally dried acetic acid is distilled from recovery catalyst solution a small boilers & corrosion products a pasteurizing section hold mead total . Refuse at the top of the acetic acid column is illustrated in flow heat for cases in which it is needed to improve quality by constructing miner imparities such as formic acid for bleed off.

Recovery of by product acid.

In the manufacturing of externs involving the use of acetic acid anhydride to reliever the hydrolysis equilibrium limitation acetic acid is produced in washing & practical hydrolysis operations.

The most common problems of acetic acid recovery involve separation from reactively large amounts of water & small quantities of by product impurities.

Five alternative acetic acid recovery process & combined are generally considered.

1) Azeotopic distillation.

2) Simple distillation.

3) Liquid extraction.

4) Chemical treatment

5) Absorption.

Particularly incase of acetic acid production of acetic acid are ethyl alcohol & air & catalyst Mno_2 silver $k_2cr_2o_7$

So during washing of a equipment of removal of excess of water which was present in alcohol has to be rejected unmoral to waste from is liquid moreover it is acidic. As we known if PH₇ is natural. PH is 0-6 acidic.

If liquid waste in the acidic form the by adding cheap have medium liquid hence we can make if into nutria & reduces in to nearby river channels etc.

MATERIAL BALANCE

Molecular weight of CH₃ CHO =44 Molecular weight of 20= 32 Molecular weight of $CH_3 COOH = 60$ In preparation of acetic acid from acetaldehyde the reaction2CH₃ CHO+ O₂-----2 CH₃ CaoH 32 120 88 + 120 =120 The conversion is 95 % 120x95 = 114The basic calculation for 1 tone / day a) 0_2 requires for 1 ton / day of acetic acid !X/32 =1000 114 X= 1000x32 | 114 = 280.70 kg of o₂ Ton of acetic acid required 280. 701 kg of 0_2 25 ton acetic acid =? 0, 25000 =-----X 280.701 1000 = 7017.5 kg of o 25 ton acetic acid requires = 7017.5 ton of kg.

Acetic acid

Page 18

	b) Acetaldehyde X	required for 1 <u>1000</u>	L ton / day acetic acid
	88	114	
		$X = \frac{88}{114}$	X1000
	=771.9	9298 of acetic	acid.
1 toi	n of acetic acid giv	ve 771.9298 kg	of acetic acid
25	ton of	acetic	acid =? acetaldehyd
e250	00		
	X 771.9298	= 19298.245 kg	of acetaldehyde1000
Inpu	t material = outpu 7.0175 + 19 = 26	ıt material . 0175 ton.	
	36.0175 - 2500 = accumulationIng	1.0175 tone is out = accumula	s ation + output
	36.0175 = 1.0175 /dayHence	5 ton + 25 ton	
	Input = output		
Hen Inpu	ce the material ba t = accumulation :	lanced = output	
26.0 Heno Inpu	175 = 1.0175 ton = ce t = output	25 ton / day	
Hen	ce the material ba	lanced.	

Acetic acid

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PLANILOCATION

The best location for a chemical plant depend on a numbers of factors the best place is where the cost of production and distribution.

(Marketing) is minimum or where the aggregate cost of row material a transportation material to plant manufacturing selling and transportation finished product will be at minimum.

Location of chemical industries is determined by analysis of following factor.

1) Raw material

The source of raw material is one of the most imp. Factor including the selection of a plant site. This particularly true if large volume of raw materials are capsized :necaise : pcatopm, car the raw materials sources change attention Soule be given to the purchased price of the raw material distance from the source of supply fight of transportation expense availability and reliability of supply purity of the raw material and stronger requirement.

2) Market

The location of markets of intermediate distribution and the timerequired for shipping proximity to themajor markets is an impconsideration in the sedation of a plant site because the byre usually finds it advantages to purchase from nearly sources. It should be noted hatmarket are needed for by product as well as for major find products.

3) Energy availability

Power and steam requirements are high in most industrial plants and fuel is ordinarily required to supply these utilities. Consequently power and fuel can combined one major factor in the choice of a plant using electorally process are after location near large hydroelectric installations. If the plant require near a source fuel supply may be essential for operation.

4) Climate

If the plant is located in a cold climate costs may be increased by the process for construction of protective shelters around the processeors equipment and spec cooling power of air high excessive humidity or extremes of hot or cold weather can have serious effect on the economic operation of plant an there factors should be examined when selecting plant site.

5) Transportation facilities

Acetic acid

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Water fail roads and highways are the common means of transportation used materials concerns. The kind and amount of products of products and raw material determined the most suitable type of transportation facilities. In any case careful attention should be given to local fight rates and existing railroad lines. The proxing railroad

centers and the possibility of carnal, river take or ocean transport, be considerdotor trucking facilities are widely used and can serve as auction supplement to rain water facilities.

5) Water supply

The process industries use large quantities of water of cooling washing steams generation and as a raw material. The plant therefore must ne located where a supply of water is available . a large river or lake is preferable although deep wells or artesian wells may be satisfactory if the amount of water required is not too great. The lively of existing water table can be checked by consulting state geological survey and information in the constancy of the water table and the yr round capacity of local river of takes should be obtained. If the water supply shoes seasonal fluctuations , is may be desirable to constrict a reserve or to drill seval stand be wells the temp mineral content but or send to content bacteriological content and cor supply and purification treatment must also be considered when choosing water supply.

6) Waste disposal

In recent yrs a many legal restriction have placed on the method for disposing waste materials from the process in duties. The site selected for a plant should have dequote capacity and facilities for correct wet disposal even though a given area has mineral restriction on pollution should not be assumed that his condition will continue to exist. In choosing the plant site the permissible tolerance level for

10) Flood and fire protection

Many industrial plants are located along or near large bodies of water and there are risks of flood or hurricane damage. Before choosing a plant site the regional history of natural events of this type should be examined and the consequence of such occurrence considered.

Protection from losses by fire is another imp factor in selecting a plant location . in case of major fire assistance from the out side free department should be available fore hazards in the immediate area surrounding the plant must not the overlooked.

PLANT LAYOUT

This layout can play an imp part in determining constructions and manufacturing costs. And thus must be planned carefully with attention being given to further problems that may arise. Since each plant differs in many ways and no two plant sites are exactly a like.

There is so one ideal plant layout, however proper layout in case will include arrangement of processing areas, stronger areas and handling areas in efficient coordination and with regard to such factor as.

1) New site development or addition to previously developed site.

- 2) Type and quantity of products control.
- 3) Operational convenience and accessibility.
- 4) Economic distribution of utilize and service.
- 5) Type of buildings and building code requirements.
- 6) Health and safety considerations.
- 7) Waste disposal problems.
- 8) Auxiliary equipment.
- 9) Space available and space required.

Cost estimation

Fixed capital investment

17,05,000/-

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Direct cist	10,00,000/-
Purchased equipment	1,00,000/-
Purchased equipment installation	1,00,000/-
Instrumentation and control	1,00,000/-
Piping	10,000/-
Electrical equipment	25,000/-
Building	3,00,000/-
Service facilities	50,000/-
Yard improvement	25,000/-
Land	10,000/-
Andirect cost	
Engineering and supervision	10,000/-
Construction exp	50,000/-
Contractors fees	50,000/-
Contingency	30,000/-
Total product cost = manufacturing cost + ge	eneral exp
3250000+ 200000	3450000/-
Manufacturing cost = direct production cost	+ fixed charges + plant
overhead cost	
2500000 + 500000 = 250000	3250000/-
General exp. = distribution and market + adm	n. Exp .

100000 + 100000	200000/-
32,50,000 + 20,00,000	34,50,000/-
1) Manufacturing + cost	
2) Direct production cost (50 -60) (T.P.C) =	25,00,000/-
1. Operating label (10-20% IPS)	2,50,000/-
2. Raw material (10-50% TPS)	2,50,000/-
3. Director supervisory and clerical labor	25,000/-
4. Utilize (10-20% of FCI)	50,000/-
5. Maintenance and repairs (2-10% of FCI)	1,70,500/-
6. Operating supplies	17,500/-
7. Liberating charges (10-20 of OL)	2,500/-
8. Attempts of rues, toes (0-6 % of TPS)	5,000/-
II. fixed charges (10-20 of PPC)	5,00,000/-
1. Depreciation (10% of FCI)	17,500/-
2. Local taxes (1-4% of FCI)	17,050/-
3. Insurance (0-4 @ of FCI)	17,050/-
4. Rent (8-12% of building charges)	13,000/-

Ill, plant overhead cost (5-15% of TPC)

1,00,000/

-1 .administrative cost (2-6 % of TPC) 1,00,000/-

2. distribution and selling cost (2-20% of TPC) 2,50,000/-

3.researchand development (O+R+D)(5%ofTPC)

2,50,000/-

5. Financial interest (0-10% of TPC) 2,50,000/-

Gross earning = total production cost

=50,00,000-34,50,000

= 15,50,000

CONCLUSION

As the cost estimation shows that the return of total investment for the setup of the plant will be obtained within a period of 22 yrs. Since them whatever profit will be obtained will be too much. This profit can be utilized for welfare of the men power working the factory. Many facilities for goodness of the employee will be provided at the lowest price according all the men will be satisfied in aspect and will devote totally for the development of the factory.

IQAC Co-Ordinator Adarsh Mahavidyalaya,Omerga Tq.Omerga Dist.Osmanabad (MS)



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BIOE	<u>BLOGRAPHY</u>
Name of books	anther
1. Chemical engg	Dr. Kuznetsov
2. Industrial chemistry	Reigel
3. Organic chemistry	Finer I.L.
4. Chemical process Plant layout	Willeyant Dry don
design	
5. Outline of chemical technology	Gopalrao

S.al.

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Acetic acid

Shramjivi Shikshan Prasark Mandal's

Adarsh Senior College, Omerga.



Department of Computer Science Project Report On

" e- Billing System " CERTIFICATE

This is certify to that the following students of B.Sc. Illrd year computer science satisfactory completed the practical requirements as per instructed Dr.B.A.M.U. Aurangabad during the academic year21-23 as an Project fulfillment .

Seat Numbers .

11. N.A.E.664764

Submitted By

Puri Vimal Mahader

21. NA F66.46.47

3) NAE664497

Kharose Mayuri bhimashantan Birajdor Arpita suresh

4).....

Project Incharge (Mr.Mulajkar

Examiner

(Mr. Mulajkar A.S

ACKNOWLEDGEMENT

Knowledge is gained by practical experience. Since knowledge is a social enterprise, assistance from a selected group of expertise become a necessary and proves encouraging in the view of the limitation of time and our quest for a better understanding of this vast project.

My heartfelt gratitude to my honorable guide Mr. Mulajkar. A. R. for giving us a constant support, guidance and encouragement throughout the project.

We express our sincere thanks to HOD Mr. Mulajkar. A. R. and Course Coordinating Staff Mrs.Gund B.B., Miss. Pawar S.S., Miss. Owandkar U.B., Mr. Reddy.S.M. of our Department as well as the nonteaching staff too for their valuable guidance and support in fulfillment of the task.

eBilling and Invoice System

OBJECTIVE	
PROJECT SCOPE	EBOORI BOOK LANK NOT STORE
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OBJECTIVE

This project is made for one of the big decorator services in Mumbai, they supply decorating item to film industry for movie shooting. Presently they issue their client handwritten invoice and they enter details in manual register. And maintain MS Excel file for product rate. They want computerization of their manual invoice and bill generation process.

The client uses MS Excel, and maintains their product list, customer list, and prints the invoice, however it is not possible them to share the data from multiple system in multi user environment, there is lot of duplicate work, and chance of mistake. When the product price are changed they need to update each and every excel file. There is no option to find and print previous saved invoice.

There is no security; any body can access any report and sensitive data, also no reports to find out the sales volume, stock list, and summary report. This eBilling and invoicing system is used to overcome the entire problem which they are facing currently, and making complete atomization of manual billing and invoicing system

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PRINCIPAL Adarsh Mahavidyalaya, Omerga Tq. Omerga, Dist. Osmanabad (M.S.)

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PRINCIPAL Adarsh Mahavidyalaya,Omerga Tq. Omerga, Dist. Osmanabad (M.S.)

anal. **IQAC** Co-Ordinator

Adarsh Mahavidyalaya,Omerga Tq.Omerga Dist.Osmanabad (MS)

2021-22

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अंतर्गत

प्रा. बात्नाजी पिडांगे रुमाजशास्त्र विभाग प्रमुख

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IQAC Co-Ordinator Adarsh Mahavidyalaya, Omerga Tq.Omerga Dist.Osmanabad (MS)

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PRINCIPAL Adarsh Mahavidyalaya, Omerga Tq. Omerga, Dist. Osmanabad (M.S.)

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College : Adarsh Senior College,Omerga (57), Ni	H 65 Road Omerga, Osmanabad,	Omerge, Osmenabed Pin: 413606
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समाजशास्त्र Prof. P.D. Patil C TIT Head Dept of Sociology S.C.S. College, Omerga Dist. Osmanabad AHAVI OMERG **IQAC** Co-Ordinator PRINCIPAL Adarsh Mahavidyalaya, Omerga Adarsh Mahavidyalaya, Omerga Tq.Omerga Dist.Osmanabad (MS) Tq. Omerga, Dist. Osmanabad (M.S.) Report Generated By: Adaph Senior College, Omerga as an Wednesday, March 3, 2021 11:42:58 AM Page 1 of 1

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Dr. Babasaheb Ambedkar Marathwada University Recognized by USIC UP\$ 201 and 12(8), NAAC ReaCT ed-431004. Maharanters/hit with "A" (Smith Blank Mark List For B.A. Regular-P-2013 - T.Y.B.A. - Sixth Semester For ApriMay-2021 ad Pirc 413606 College : Adarsh Senior College, Omerga (57); NH 65 Rnad Omerga, Osmanabad, Omerga, Osmanab Count of Student 6 Hindi Project Based on(Paper-Xil & Paper-XVI) (HiN-15-13) Project Work UA (Max Mark 100 Mm Mark 40) Paper Name Total Marks Student Name Hundled PRN 100 \$r Seat Number Minty No. 90 JADHAV PRATIBHA ARUN 2018015200529533 NBF012898 1 sway (75 JOSHI SATYAPRAKASH SHANKARRAO 2018015200529243 2 NBF612912 SLUDAN STA 76 KAMBALE SHIVAJI GORAKHA 2016015200372307 3 NBF612918 Eighty KAMLE NAGNATH RAM NBF612933 2017015200158747 4 Ab Ab PAWAR PRAVIN BHASKAR 5 NBF612988 2018015200529131 EIGA HONA SI UMAPURE ARCHANA VYANKAT 2018015200530737 NBF613034 6 for Ans Department of Hindl Adarsh College Omerga HEAD 618121 11 Seal Date Your signal 1 Report Conversied By - Adersh Service College, Omerge as on Monday, July 26, 2021 11:04 25 AM Page 1 of 1 .

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Department of Hindl Adarsh College Omerga

 Instruction
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