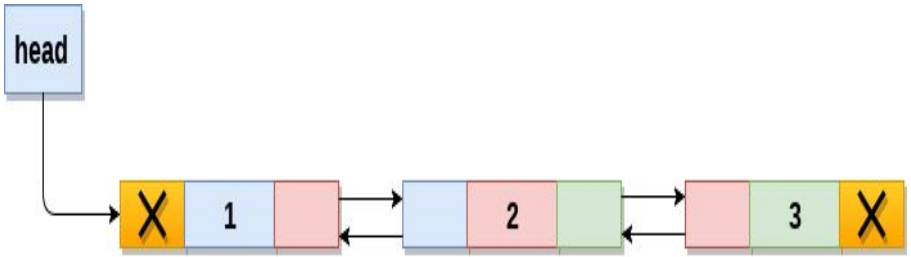
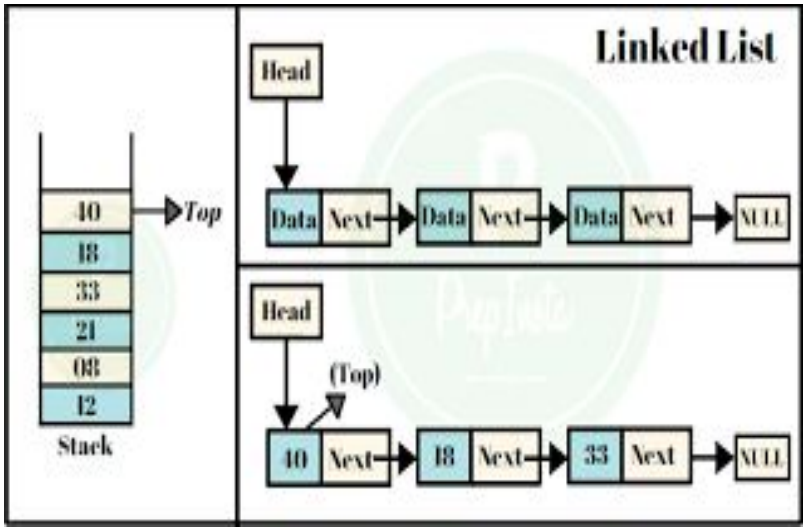
Project Documentation

DATA STRUCTURES

PROJECT ATTRIBUTE

Title: Learning Networking by Reproducing Research Results
Date-18-12-2021





LEARNING NETWORKING BY REPRODUCING RESEARCH RESULTS

TECHNICAL CODETHAN REPORT
SUBMITTED TO
RAMAIAH INSTITUTE OF TECHNOLOGY
(Autonomous Institute, Affiliated to VTU)
Bangalore – 560054

SUBMITTED BY

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As part of the Course **Data Structures– CS32**
SUPERVISED BY
Faculty
Dr.Parkavi.A

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
RAMAIAH INSTITUTE OF TECHNOLOGY

Oct-Feb 2021

Department of Computer Science and Engineering

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Bangalore – 54

CERTIFICATE

This is to certify thatARYAN,ANIKET,AMRTANSHU,ARYAN have completed the **"<**LEARNING NETWORKING BY REPRODUCING RESEARCH RESULTS.**>"** as part of Technical Codethan. We declare that the entire content embodied in this B.E. 3rd Semester report contents are not copied.

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Evaluation Sheet

Sl. No	USN	Name	Research Content understanding and Coding (10)	Demo & Report submission (10)	Total Marks (20)

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HOD,CSE

Table of Contents

ABSTRACT OF OUR PROJECT

Our project is aimed in the area of networking , more appropriately the data structures which are used while making a real time networking project.
Our research problem was based upon reproducing the network research results which were conducted in the Stanford University.
The research document was analyzed and our team decided to implement one of the data structures that is used in such projects.
What we studied and perceivied while collecting data for our project was that linked list and stacks is majorly used in networking so we decided to implement linked list and stacks.
Our implemented code is attached in the Git repository and output is attached in this project report further.
Our team thank the Supervisor to give us this learning opportunity.

INTRODUCTION

The paper that was provided aimed towards reproducing the results of network research projects using emulators and simulations.

The paper stated that reproducing the results was an effective way of imparting education in computer networking as the students know and they anticipate in the experimental outcomes before entering the lab, it is seen that the process of reproducing experiments gives students a much deeper understanding of the underlying concepts. The main reason for adapting this scientific approach to networking class is for students to obtain a detailed, in-depth understanding of a significant paper, its key ideas, and its key results.

The above Process is accomplished through five major steps:

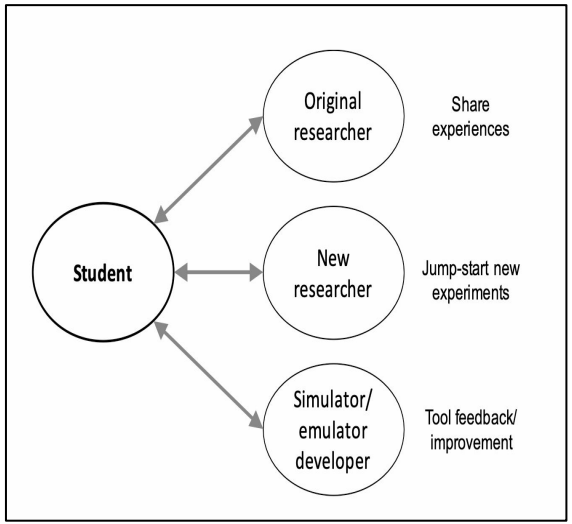
1.)Select a project.
2.)Choose a method of reproduction.
3.)Contact original authors.
4.)Contact original authors.
5.)Write a public blog.

LITERATURE SURVEY

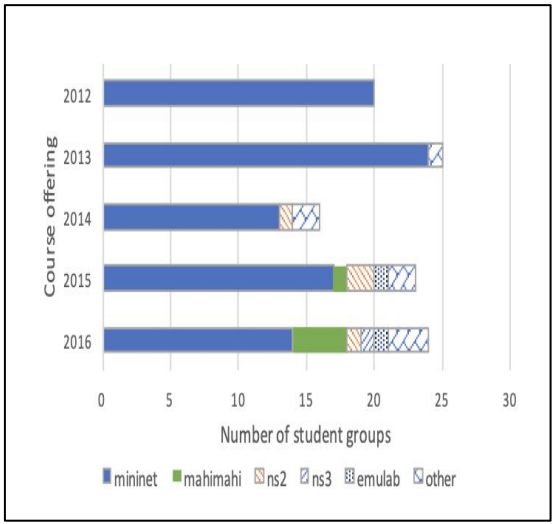
The key points opted by Students to reproduce the actual research results were:
1.Selecting a project
2.Choose a method of reproducing the result
3.Contact original author
4.Work with instructors and peers
5.Writing a public blog.

This method benefited the students by knowing what actually happens inside a fully working networking system.

BAR GRAPH AND FLOW CHART FROM THE RESEARCH PAPER



Influences of student project on other parts of networking community.



Emulator and simulator platforms used by students for reproducing research, listed by course year.

ABSTRACT DATA TYPE OF STRUCTURES IN PROJECT

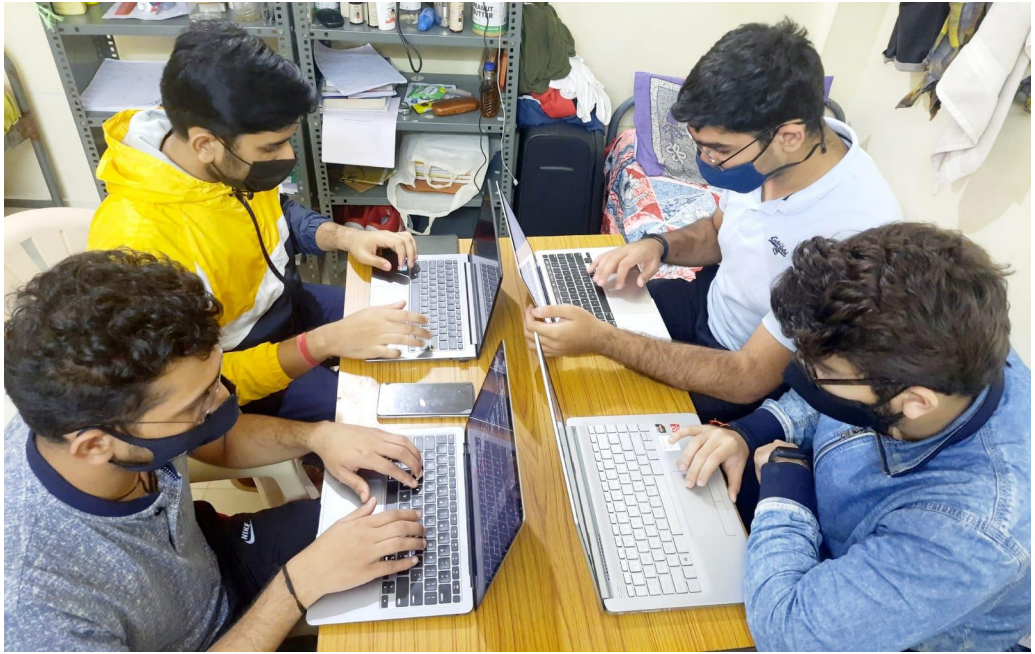
structure *Stack* is
objects: a finite ordered list with zero or more elements.
functions:
for all *stack* ∈ *Stack*, *item* ∈ *element*, *max_stack_size*
∈ positive integer
Stack CreateS(*max_stack_size*) ::=
create an empty stack whose maximum size is *max_stack_size*
Boolean IsFull(*stack, max_stack_size*) ::=
if (number of elements in *stack* == *max_stack_size*)
return TRUE
else return FALSE
Stack Add(*stack, item*) ::=
if (IsFull(*stack*)) *stack_full*
else insert *item* into top of *stack* and **return**

Boolean IsEmpty(*stack*) ::=
if(*stack* == CreateS(*max_stack_size*))
return TRUE
else return FALSE
Element Delete(*stack*) ::=
if(IsEmpty(*stack*)) **return**
else remove and return the *item* on the top
of the stack

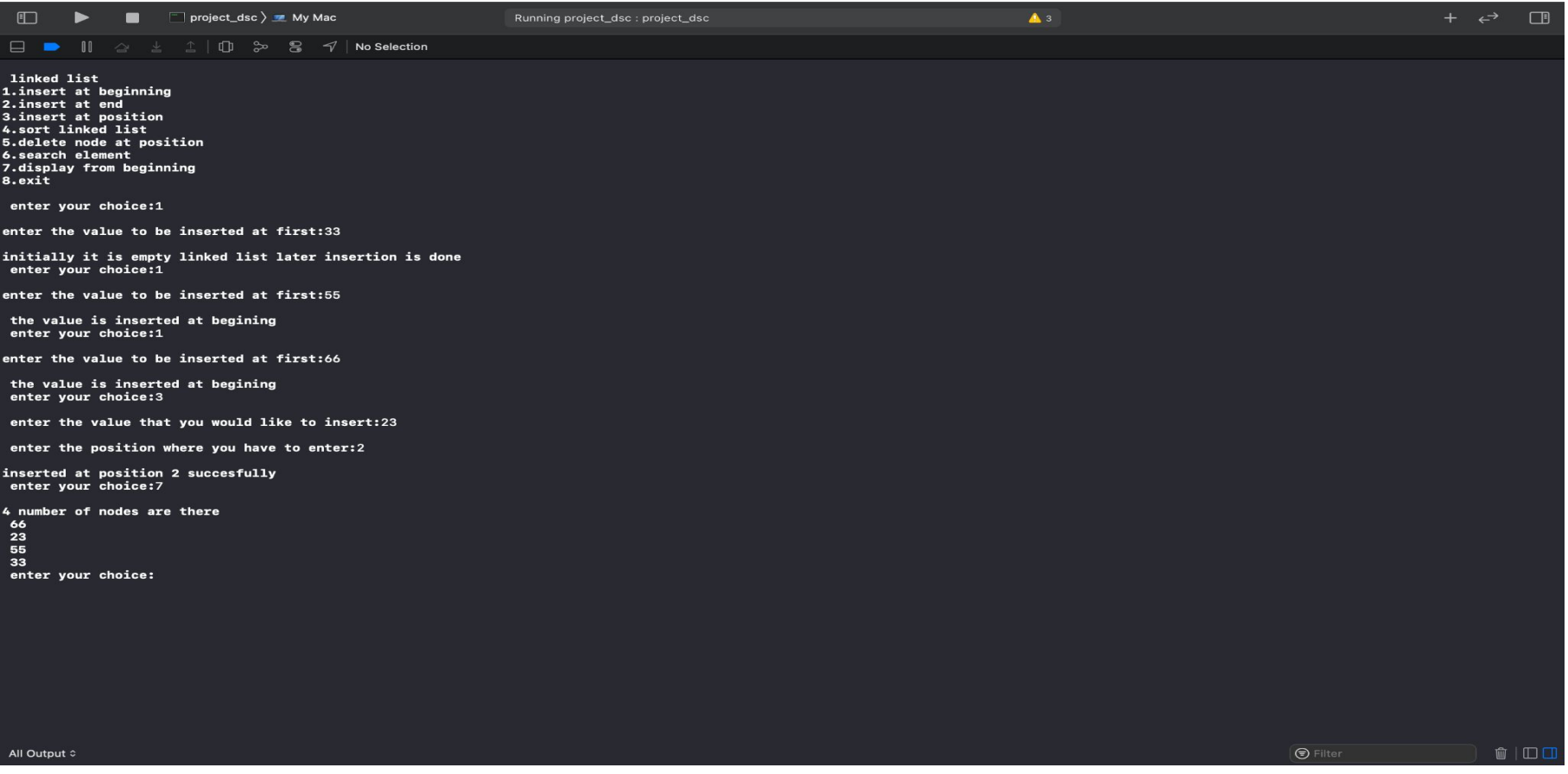
SOURCE CODE - https://github.com/Amrtanshu7/DS-projects/blob/main/Networking%20project.C

RESEARCH PAPER - https://github.com/Amrtanshu7/DS-projects/blob/main/acmdl17-97%20(1).pdf

WORKING ON THE CODE



IMPLEMENTATION OF THE CODE



REFERENCES

1. RESEARCH PAPER PROVIDED
2. FUNDAMENTAL OF DATA STRUCTURES IN C - HOROWITZ,SAHANI&ANDERSON-FREED
3. GOOGLE
4. https://urc.ucdavis.edu
5. Study material provided by Dr.Parkavi.A .

Conclusion:Our code depicted the usage of stacks data structure.