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AN INTERNSHIP REPORT
ON

"Engineering SGPA/CGPA Calculator "

Bachelor of Engineering

In

Computer Science and Engineering

Submitted by:

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EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

COLLEGE: East Point College of Engineering And Technology

2021

ABOUT THE COMPANY

The race for digital transformation is on. In this globally connected on-demand world with rapid advancements in internet technologies, businesses worldwide are under constant pressure to add innovative real-time capabilities to their applications to respond to market opportunities. Every business worldwide is building event-driven, real-time applications - from financial services, transportation, and energy, to retail, healthcare, and Gaming companies.
Our endeavour is to make it easy to develop innovative real-time applications and efficient to operate them in production. We have a proven record of building highly scalable, world-class consulting processes that offer tremendous business advantages to our clients in the form of huge cost-benefits, definitive results and consistent project deliveries across the globe.

We prominently strive to improve your business by delivering the full range of competencies including operational performance, developing and applying business strategies to improve financial reports, defining strategic goals and measure and manage those goals along with measuring and managing them.

Vision

We are committed to going the extra mile to bring success to the clients consistently. We are dedicated to delivering the right people, solutions, and services to the clients that they require to meet their technology challenges and business goals.

Mission

Optimizing client satisfaction with quality services
Delivering the most efficient and the best solution to our clients to every client leveraging leading technologies & industry best practices.

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OVERVIEW OF THE PROJECT

Project Name: Engineering SGPA/CGPA Calculator

Team Members: RAMYA.M.R (1EP18CS086)
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This project is based on Full Stack Web Development. The main objective of this project is to learn the implementation of HTML, CSS ,JavaScript and phpMyAdmin(Database). The basic webpage of this project is created using HTML and styling of the webpage is done using CSS.

CGPA refers to the cumulative grade point average which literally translates to the sum total of all your credit points. This system helps in assessing the overall academic performance of a student. Although the evaluation criteria may vary from one country to another, the CGPA system is among the most common evaluation way in most professional/technical courses.

SGPA, which stands for Semester Grade Point Average is an evaluation method that highlights the semester wise performance of the student. It can be calculated by simply adding all the credit points awarded for the subjects and then dividing it by the total credits allotted to that semester.

ABOUT CGPA AND SGPA

SGPA : Semester Grade Point Average

The marks we score in our schools or colleges can be calculated in different ways. One of these ways includes SGPA. It is the grade point average that is calculated at the end of an academic session like a year at school or a semester at college. First, adding the grade points of all the subjects in an academic year or session are collected together and then their average is calculated which is referred to as the SGPA for that particular year or session. The SGPA is the weighted average of the grade points obtained in all the courses, seminars and projects registered by the student during the semester

CGPA: Cumulative Grade Point Average

Another prominent method of calculation of the marks we score in our colleges or schools is through CGPA. Simply put, CGPA is the abbreviated form of Cumulative Grade Point Average and depicts the total marks we score in a complete academic term or a certain time period like the 1st year or 3rd year of college. The total marks that we score in all the sessions of a college term or both half yearly examination in school, is taken together to calculate the CGPA scored in that academic term. Cumulative Grade Point Average (CGPA) is an assessment tool used to evaluate your academic performance. In the Bachelor of Engineering programs, CGPA is calculated to determine a student's current standing overall (this includes all courses counting towards the degree) and if applicable, in a minor.

DIFFERENCE BETWEEN SGPA AND CGPA

The central difference between sessional grade point average and cumulative grade point average is that we calculate CGPA at the end of the academic year with many SGPAs of different semesters or sessions. Students must understand that having an idea about what is CGPA will help them in getting a hold of how to go calculate SGPA.

How to Calculate SGPA?

Once you have understood what SGPA essentially is, the next step is to learn how it can be calculated. Semester Grade Point Average (SGPA) essentially reflects a student's performance over a stipulated time period, generally a semester. To find out your SGPA, you need to take all your credit points obtained in a semester and then divided the sum by the total credit points of the semester.

Here are the pointers explaining how you can calculate SGPA-

- First multiply the credit point of each subject to the grade point you have earned in the subject.
- Then, add all the total grade points you have got.
- Now, divide this sum by the total sum of credit points of the semester. You will get your SGPA.

To understand it with an example, let's say you have three subjects in a semester, and you have scored the following grade points,

Subject 1: 8; Subject 2: 6 and Subject 3: 7

Now, suppose the credit points for these subjects are:

Subject 1: 3; Subject 2: 4; Subject 3: 4

First, multiply your grade points with their respective credits:
Subject 1: 8*3= 24
Subject 2: 6*4= 24
Subject 3: 7*4= 28

Now, add these grade points you have got: 24+24+28= 76 as well as add

all the credit points, i.e. 3+4+4= 11

To get your SGPA, simply divide the total sum of grade points with sum of credit points,

= 74/11

=6.72 SGPA

How to Find CGPA from SGPA?

To find CGPA from SGPA, you need to follow this formula:

CGPA= (SGPAs of All semesters in an academic year)/ Number of semesters

Thus, by adding up all the SGPAs you have got in an academic year by the total number of semesters, you will find CGPA from SGPA.

For example, Suppose that you scored 7 SGPA and 9 SGPA in your two semesters.

1. First you need to add both these SGPAs.

2. Then, divide the total SGPA with the number of semesters, i.e. 2.

Your CGPA would be:

CGPA = **SGPA of all semesters in a year/Number of semesters**

= (7+9)/2 = 8 CGPA

TOOLS USED

Software Requirements

- Visual Studio Code2019.
- Google Chrome or Microsoft Edge of latest version.
- Front End: HTML,CSS,JS
- Backend: php , MySQL ,PhpMyAdmin(database)
- Server:Xampp
- Linux 7.1 or Windows XP/7/8/10OS or Mac OS

Hardware Requirements

- Pentium 200-MHz computer with a minimum of 64

MB of RAM (128 MB of RAM recommended).

- Monitor with a refresh rate of at least 40Hz for a smooth GUI experience(optional).

IMPLEMENTATION

Source code (HTML AND JS CODE) :

Index.html

```
<!DOCTYPE html>
<html lang="en" dir="ltr">
  <head>
    <meta charset="utf-8">
    <title>SGPA calculator</title>
    <meta name="viewport" content="width=device-width, initial-
scale=1.0">
    <<link rel="stylesheet" href="main.css">
  </head>
<body>
    <div class="main">
      <h1>SGPA Calculator</h1>
<div class="menu">
        <button id="sgpa" type="button" name="button">SGPA</button>
        <button id="cgpa" type="button" name="button">CGPA</button>
      </div>
      <div class="calculator">
        <input type="number" placeholder="Enter the number of subjects">
        <div class="grade">
</div>
        <button id="next" type="button" name="button">Next-></button>
        <button id="cal" type="button" name="button">Calculate</button>
        <button id="print" type="button" name="button">Print</button>
      </div>
</div>

    <footer id="Footnotes">
     Made by- Shirisha K A and Ramya M R
    </footer>
    <script type="text/javascript">
      sgpa_btn=document.querySelector("#sgpa")
      cgpa_btn=document.querySelector("#cgpa")
      heading=document.querySelector(".main h1")
      input=document.querySelector(".calculator input")
      next_btn=document.querySelector("#next")
      cal_btn=document.querySelector("#cal")
      cal=document.querySelector(".calculator")
      grade=document.querySelector(".grade")
```

```
print=document.querySelector("#print")
    const arrAvg = arr => arr.reduce((a,b) => a + b, 0) / arr.length
     let x=0;

flag=0;
     sgpa_btn.addEventListener("click",()=>{
      input.value='';
      heading.innerText="SGPA Calculator";
      heading.style.display="block";
      document.querySelector(".menu").style.flexDirection="row";
      cal.style.display="flex";
      input.placeholder="Enter the number of subjects";
      grade.innerHTML='';
      next_btn.style.display="block";
      cal_btn.style.display="none";
      print.style.display="none";
      flag=1
     });
cgpa_btn.addEventListener("click",()=>{
      input.value='';
      heading.innerText="CGPA Calculator";
      heading.style.display="block";
      document.querySelector(".menu").style.flexDirection="row";
      cal.style.display="flex";
      input.placeholder="Enter the number of semesters";
      grade.innerHTML='';
      next_btn.style.display="block";
      cal_btn.style.display="none";
      print.style.display="none";
      flag=2
     });
     next_btn.addEventListener("click",()=>{
      x=input.value;
      grade.style.display="flex";
      if(x.length==0)
      {alert("ENTER A Value");}
      else {
        for (let i=1;i<=x;i++){
          gradePoint = document.createElement('input');
          gradePoint.placeholder= `Grade point ${i}`;
          gradePoint.setAttribute('id', i);
          grade.appendChild(gradePoint);
      }
     }
next_btn.style.display="none";
```

```
cal_btn.style.display="block";

});
    cal_btn.addEventListener("click",()=>{
    score=[]

for(i of document.querySelectorAll(".grade input")){
      score.push(parseInt(i.value));
    }
    grade.innerHTML='';
    for(let i=0;i<score.length;i++){
      output=document.createElement('h2');
      output.innerText=`Grade point ${i+1}: ${score[i]}`;
      grade.appendChild(output);
    }
    if(flag==1){
      output=document.createElement('h2');
      output.innerText=`SGPA is: ${arrAvg(score)}`;
      grade.appendChild(output);
    }
else if (flag==2) {
      output=document.createElement('h2');
      output.innerText=`CGPA is: ${arrAvg(score)}`;
      grade.appendChild(output);
    }
    print.style.display="block";
    });
    print.addEventListener("click",()=>{
      var printContents = grade.innerHTML;
      w=window.open();
      w.document.write(printContents);
      w.print();
      w.close();
      next_btn.style.display="block";
      cal_btn.style.display="none";
print.style.display="none";
    });

  </script>
 </body>
</html>
```

Source Code(CSS code)

main.css

```
      *{
  margin: 0;
  padding: 0;
  box-sizing:border-box;
}
.main{
  min-height: 90vh;
  width: 100vw;
  background-image: url("bgimage.jpeg");
  display: flex;
  flex-direction: column;
  justify-content: center;
  align-items: center;
}
h1{
  color: #6679e0;
}
.menu{
  display: flex;
  flex-direction: column;
  justify-content: center;
  align-items: center;
  flex-wrap: wrap;
}
.menu button{
  width: 25vw;
  height: 7vh;
  margin: 1.5vh;
  border-radius: 20px;
  background: #6679e0;
  font-size: 1.5rem;
  border: 3px solid #6679e0;
  color: white;
}
.menu button:hover{
  background: white;
  font-size: 1.5rem;
  border: 3px solid black;
  color: black;
}
```

```
.main h1{
  display: none;
}
.calculator{
  margin: 1.5vh;
  display: none;
  flex-direction: column;
  justify-content: center;
  align-items: center;
}
.calculator input{
  margin: 0.2rem;
  height: 2.5rem;
  width: 25vw;
  text-align: center;
  border-radius: 15px;
}
.grade{
  display: none;
  flex-direction: column;
  justify-content: center;
  align-items: center;
}
.grade h2{
  color:#6679e0;
}
.calculator button{
  width: 10vw;
  height: 5vh;
margin: 1.5vh;
  border-radius: 20px;
  background: #6679e0;
  font-size: 1.5rem;
  border: 3px solid #6679e0;
  color: white;
}
.calculator button:hover{
  background: white;
  font-size: 1.5rem;
  border: 3px solid black;
  color: black;
}
#cal,#print{
```

```
    display: none;

}
footer{
  height: 10vh;
  width: 100vw;
  font-family: sans-serif;
  font-weight: bold;
  display: flex;
  align-items: center;
  justify-content: center;
  background: grey;
}
@media screen and (max-width:1024px){
  html{
    font-size: 80%;
  }
  .menu button{
    width: 30vw;
    }
}
@media screen and (max-width:786px) {
html{
  font-size: 60%;
}
.menu button{
  width: 70vw;
  }
.calculator input{
  margin: 0.2rem;
  height: 4rem;
  width: 70vw;
  }
  .calculator button{
    width: 50vw;
      }
  .grade h2{
       font-size: 2rem;
  }
}
```

PHP Code:

```
<?php
  //creating connection to database
$con=mysqli_connect("localhost","root","","VtuCalcula
tor") or die(mysqli_error());


  //check whether submit button is pressed or not
if((isset($_POST['submit'])))
{
  //fetching and storing the form data in variables for
cgpa
$Semester = $con-
>real_escape_string($_POST['Semester']);
$Grade Points = $con-
>real_escape_string($_POST['Grade Points']);
$Results = $con-
>real_escape_string($_POST['Results']);


//fetching and storing the form data in variables for sgpa
$Subjects = $con-
>real_escape_string($_POST['Semester']);
$Grade Points = $con-
>real_escape_string($_POST['Grade Points']);
$Results = $con-
>real_escape_string($_POST['Results']);


//query to insert the variable data into the database
$sql="INSERT INTO cgpa (semester, Grade Points,
message) VALUES ('".$semester."','".$Grade
Points."','".$Results."')";


$sql="INSERT INTO sgpa (subjects, Grade Points,
message) VALUES ('".$subjects."','".$Grade
Points."','".$Results."')";


  //Execute the query and returning a message
```

```
if(!$result = $con->query($sql)){
die('Error occured [' . $conn->error . ']');
}
else
  echo "Print";
}

?>
```

Source Code(MySql):

```
-- phpMyAdmin SQL Dump
-- version 5.0.3
-- https://www.phpmyadmin.net/
--
-- Host: 127.0.0.1
-- Generation Time: Oct 23, 2021 at 10:19 AM
-- Server version: 10.4.17-MariaDB
-- PHP Version: 7.2.34


SET SQL_MODE =
"NO_AUTO_VALUE_ON_ZERO";
START TRANSACTION;
SET time_zone = "+00:00";


/*!40101 SET
@OLD_CHARACTER_SET_CLIENT=@@CHARAC
TER_SET_CLIENT */;
/*!40101 SET
@OLD_CHARACTER_SET_RESULTS=@@CHARA
CTER_SET_RESULTS */;
/*!40101 SET
@OLD_COLLATION_CONNECTION=@@COLLAT
ION_CONNECTION */;
/*!40101 SET NAMES utf8mb4 */;


--
-- Database: `vtu calculator`
--
-- --------------------------------------------------------


--
-- Table structure for table `cgpa`
```

```
--

CREATE TABLE `cgpa` (
  `Semester` int(8) DEFAULT NULL,
  `Grade Points` int(10) DEFAULT NULL,
  `Results` int(11) DEFAULT NULL
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

-- --------------------------------------------------------
--
-- Table structure for table `sgpa`
--

CREATE TABLE `sgpa` (
  `Subjects` int(8) DEFAULT NULL,
  `Grade Points` int(10) DEFAULT NULL,
  `Results` int(11) DEFAULT NULL
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
COMMIT;
/*!40101 SET
CHARACTER_SET_CLIENT=@OLD_CHARACTER_SET_CLI
ENT */;
/*!40101 SET
CHARACTER_SET_RESULTS=@OLD_CHARACT
ER_SET_RESULTS */;
/*!40101 SET
COLLATION_CONNECTION=@OLD_COLLATION_CONNEC
TION */;
```

Snapshots:

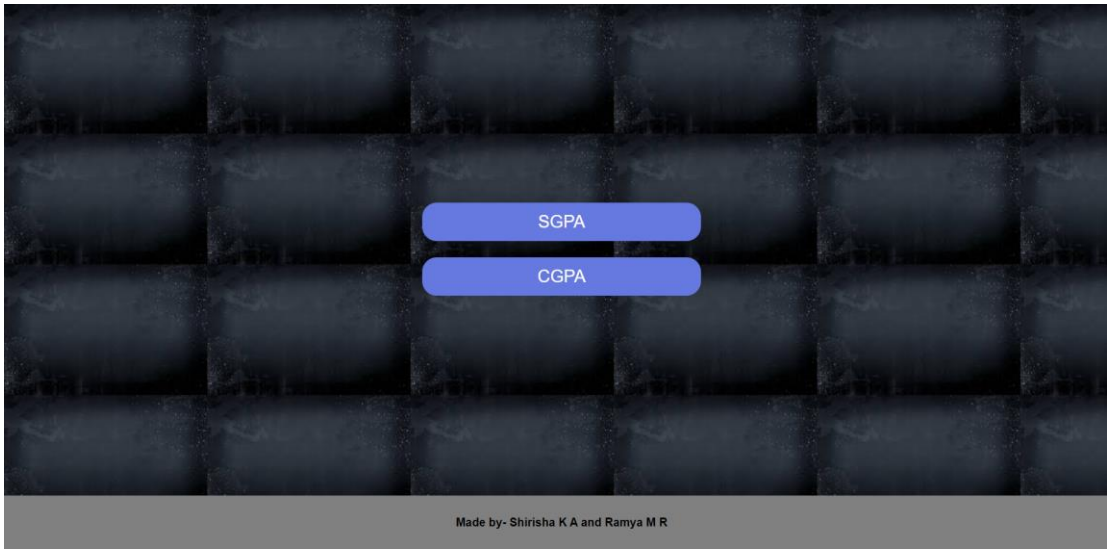

Fig:1,Home Page

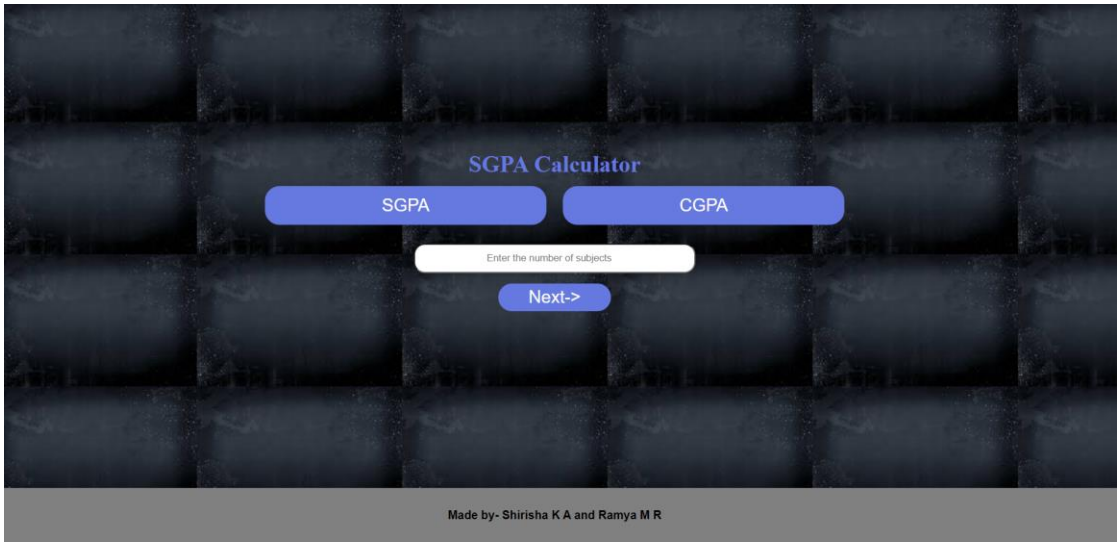

Fig:2,Selection of Sgpa or Cgpa

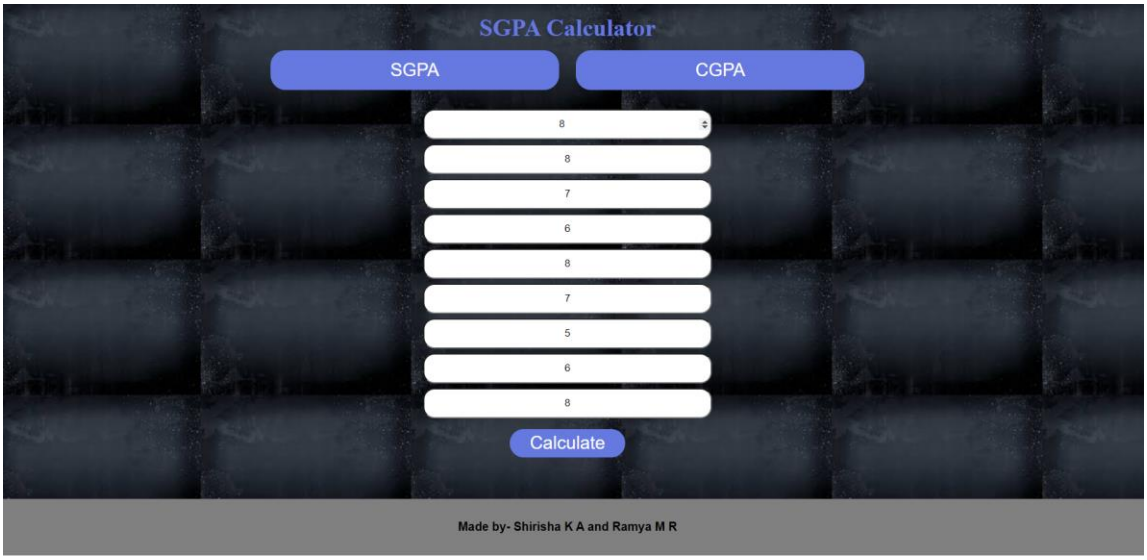

Fig:3,Sgpa Grade point data entry

Fig:4,Sgpa Results

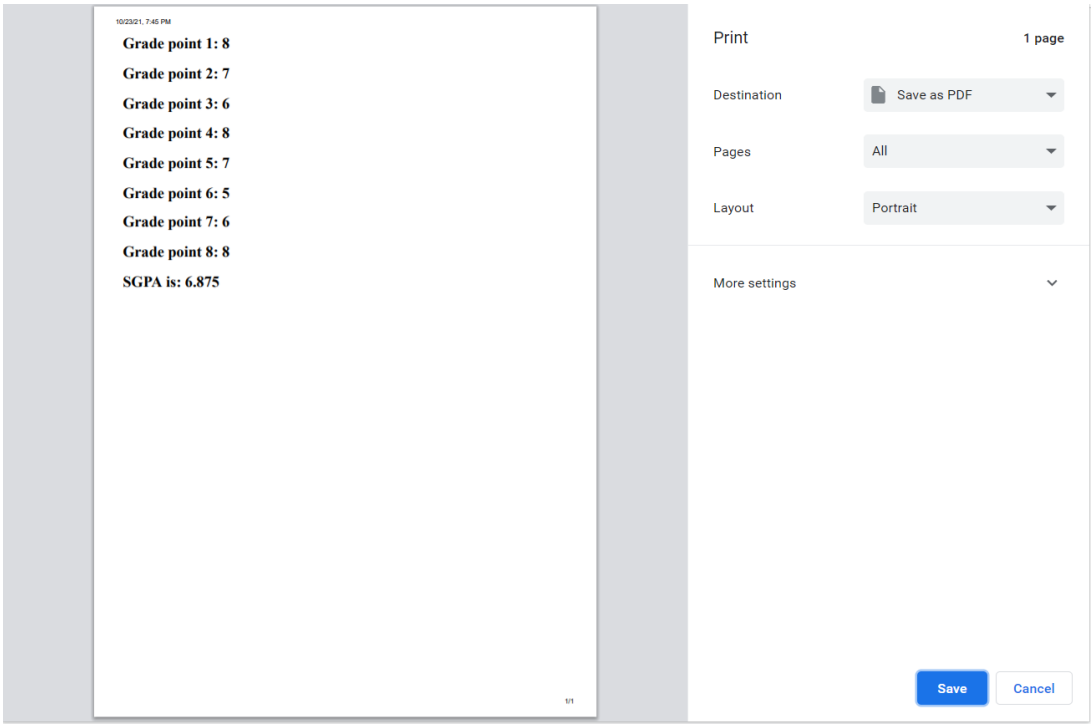

Fig:5, Printing the Results

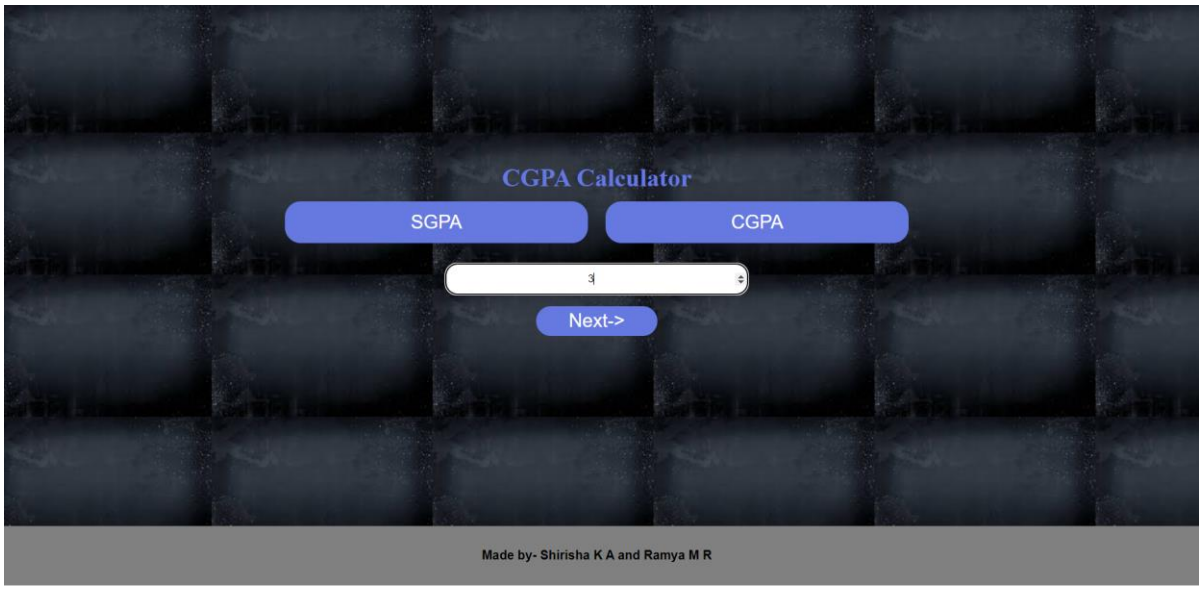

Fig:6,Cgpa number of Semesters selection

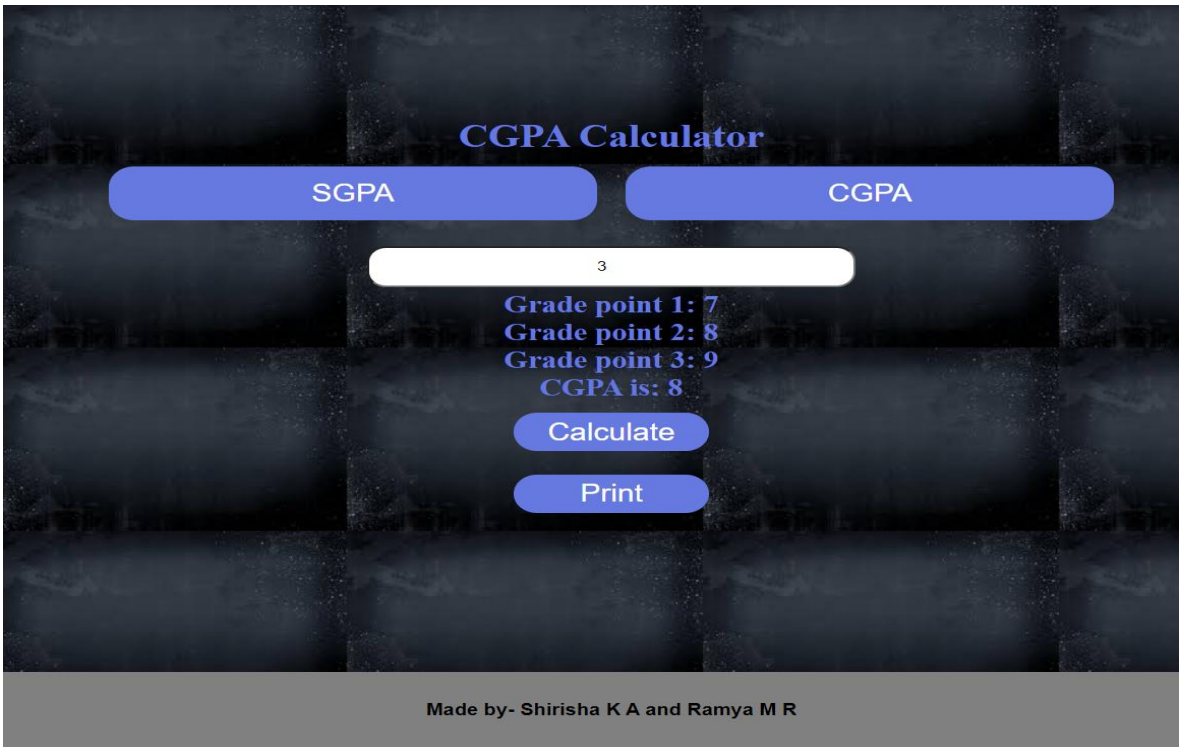

Fig:7,Cgpa calculated Results

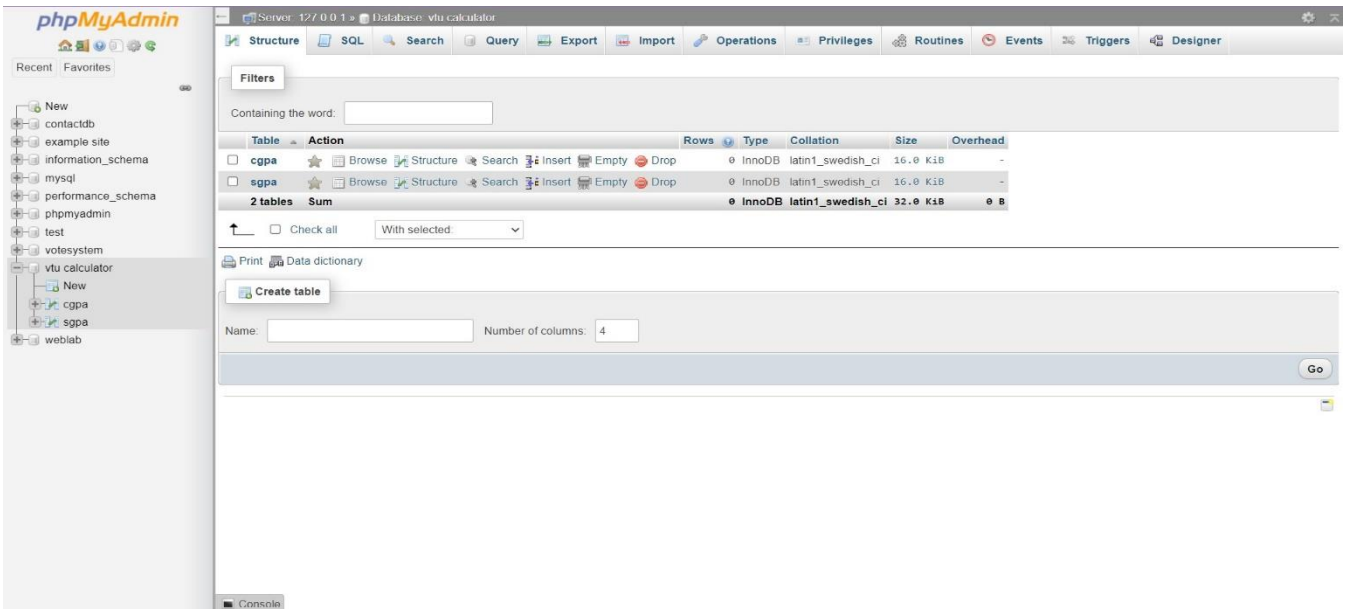

Fig:8,Database with Tables

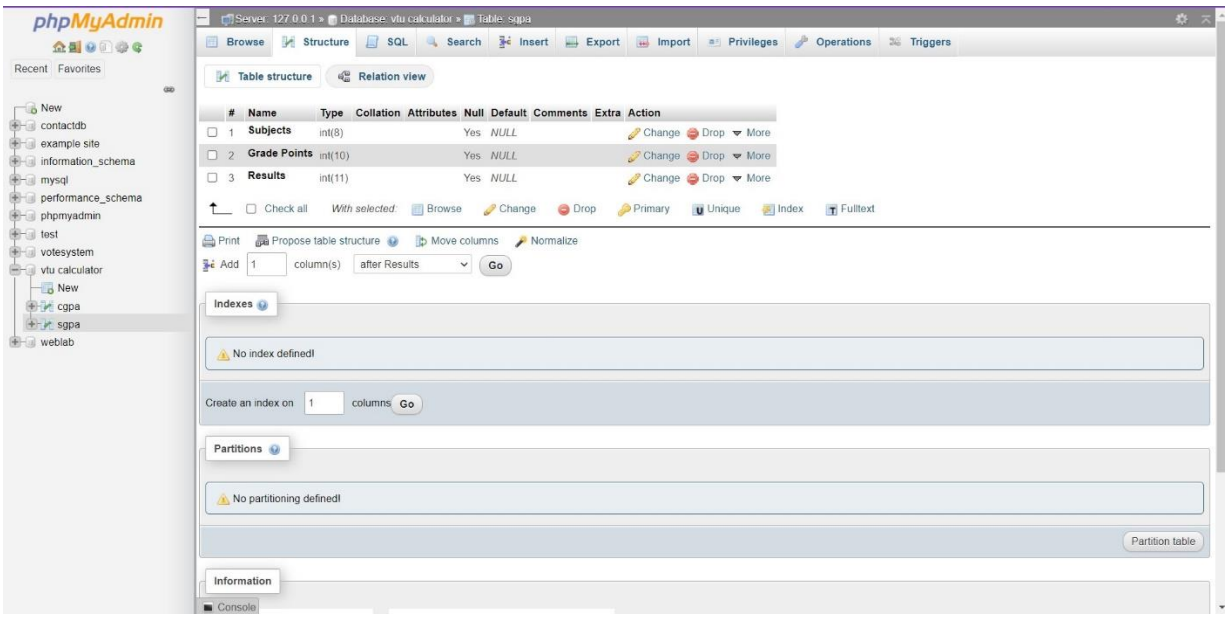

Fig:9, Sgpa Table with Columns

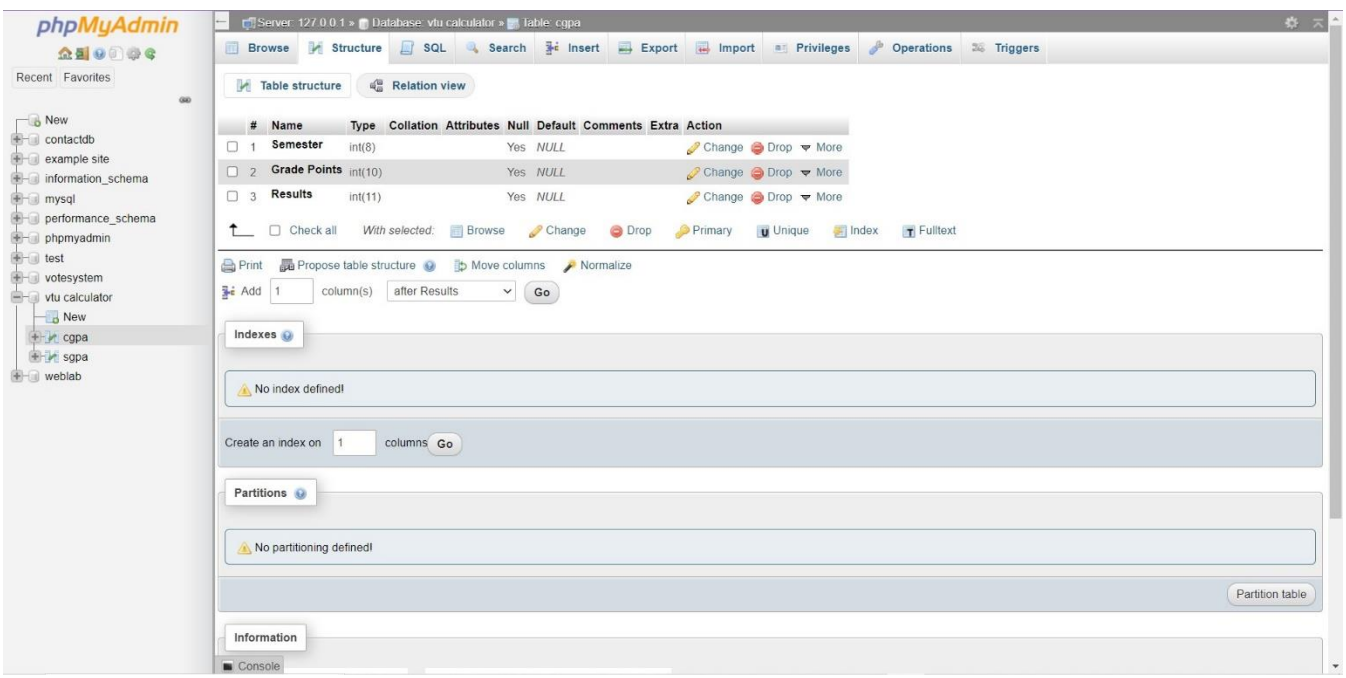

Fig:10, Cgpa Table with Columns

BIBLIOGRAPHY

- https://www.w3schools.com
- https://www.geeksforgeeks.org
- https://freefrontend.com

About my TEAM

Shirisha.K.A –Leader

Role : Creating html pages, designing everything using CSS, creating database, tables and columns in phpMyAdmin and giving the print option (downloading results in pdf format for users future reference) in the webpage.

Ramya.M.R- Team Member

Role: Giving Functions to Buttons using Javascript and connecting database to Webpage using Php and MySql.

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