

**A PROPOSED DESIGN AND IMPLEMENTATION OF A VITIAN
FRIENDLY PLATFORM NAMED AS
VIT INVENTORY
A PROJECT REPORT**

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VIT BHOPAL UNIVERSITY**

**KOTRIKALAN, SEHORE
MADHYA PRADESH - 466114**

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BONAFIDE CERTIFICATE

Certified that this project report titled “**VIT INVENTORY**” is the bonafide work of “**Ashutosh Kumar (20BCE10324), Sparsh Jain (20BCE10718), Shubham Mishra (20BCE10074), Shauryan Bhardwaj (20BCE10389), Shrey Srivastava (20BCE10601)**” who carried out the project work under my supervision. Certified further that to the best of my knowledge the work reported at this time does not form part of any other project/research work based on which a degree or award was conferred on an earlier occasion on this or any other candidate.

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ABSTRACT

Now a days the students are learning from home, there are the certain things which they want to access for their betterment of studies.

Most of the Students especially in the engineering field, want to set the target and want to score good Grades and GPA so due to the inner process of colleges they even don't know that how they can achieve required CGPA and GPA i.e in what subject they should target what grade to attain the targeted CGPA.

Even they don't have access to check their attendance that how many classes they can leave in case of emergency without appearing in DEBAR LIST in VIT.

Hence for solving these problems we the TECHION group has come up with an initiative to design such a platform where the students can continue their learning from home easily with all the resource which they want during this time.

We have developed a Review system so that the students who are getting confused while doing FFCS procedure can get reviews of a faculty.

As the FFCS is the crucial procedure for every student hence it is needed that something should be there which tells students about the rating of any faculty so that it helps them to choose. And we have given this platform a name that is **VIT INVENTORY**.

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CHAPTER-1: PROJECT DESCRIPTION AND OUTLINE

Presently the students are learning from home, there are the certain things which they want to access for their betterment of studies.

Most of the Students especially in the engineering field, want to set the target and want to score good Grades and GPA so due to the inner process of colleges they even don't know that how they can achieve required CGPA and GPA i.e in what subject they should target what grade to attain the targeted CGPA.

Even they don't have access to check their attendance that how many classes they can leave in case of emergency without appearing in DEBAR LIST in VIT.

Hence for solving these problems we the TECHION group has come up with an initiative to design such a platform where the students can continue their learning from home easily with all the resource which they want during this time.

The main Motivation of this project is to put all the resources in one website so that the students of VIT mainly who are going through the Online classes get all the needed resources in one place. We have developed a Review system so that the students who are getting confused while doing FFCS procedure can get reviews of a faculty.

As the FFCS is the crucial procedure for every student hence it is needed that something should be there which tells students about the rating of any faculty so that it helps them to choose.

VIT UNIVERSITY offers its students a chance to select their teachers for the semester. It is unknown to students that who are those teachers who should be most likely to choose, more likely to choose and who are satisfactory, so this problem can be solved so that they have a excellent semester and they also enjoy learning.

The objective of this project is to design a platform for VIT students and to integrate all the requirements of student under one domain so that they continue their online education easily.

For fulfilling the objective of our project, we will design a website where we will integrate all of the resources which VIT students want to access during their learning, under this we will design a GPA, CGPA calculator which will help them to compute their result from grades and also help them to set a target for upcoming exams, they will also have attendance calculator which will help them in keeping track of their attendance. Even for solving FFCS problem we will design the FFCS helper i.e. that is teacher review system where the students can give reviews on teacher based on most likely, more likely and the satisfactory one. From this the student will get great help in the ffcs.

CHAPTER-2: RELATED WORK INVESTIGATION

The main purpose of the VIT INVENTORY revolves around providing students a means to get idea about their Grades and to know how much they need to improve. Our project also allows the students to predict their attendance and how much should be regular attending lectures to avoid getting their names mentioned in the Debar List.

In present time, internet as become a source through which the students are able to continue their studies. They don't have much resource to study, don't have a target to achieve and they don't even know that if emergency occurs then how many lectures they can miss so that maintain the decent attendance percentage.

Hence keeping these points in mind we have designed our website, which is easily accessible at any standard browser in any standard system. Here we have designed the CGPA estimator so that students can set targets, and through the attendance calculator they can see that how many classes they can miss so that their name will not appear in the debar list.

The investigations were made in order to bring something different and unique to our project. Investigations included websites for calculating cgpa. A website by Sabarish Reddy had grade predictor and several calculators.

It is observed and was our personal experience that students face difficulty to choose their faculties during registration. So, in order to assist them in this matter we have created an FFCS review system where students can rate as well as review. In this way our students can have a comfortable experience and will enjoy studying. During this pandemic and challenging situation these resources will give comfort and ease to our students. The integrated design of CGPA, GPA and FFCS enables us to achieve this purpose.

This integrated design will help students avoid visiting different websites for any of above resources. Even with 2 GB RAM the user experience will be good on our website. Our Project is henceforth novel.

CHAPTER-3: REQUIREMENT ARTIFACTS

A requirement describes a condition or capability to which a system must conform.

A requirement in our website is either derived directly from our user needs or stated in a contract, standard, specification, or other formally imposed functions in our project. We ensure that all functionality in our project runs with full accuracy.

In general requirement artifacts describe capability of the system which gives us features and functionality of our project. In our project, artifacts relate to information, templates, outputs or a specific deliverable.

There are many websites which provide the GPA calculator, CGPA calculator and estimators and we also have taken the reference of one but in our website we have enhanced the features CGPA estimator and Attendance calculator in our website

As VIT conducts FFCS but students get confused sometimes that whom to choose , hence for solving this we have designed the Faculty review system, where students can easily retrieve the review and post the review on the faculty, this is never designed by anyone in the past.

Hence we have designed the website so that user on any system can access it, If the user don't have Smartphone and laptop also then he/she can access it from nearby cybercafes

Hardware and Software Requirement

1. As we have designed calculators hence to perform calculations, we have used JavaScript.
2. In our website we have a faculty review system that needs to store data for that, so for this purpose we have used My-Sql database and to establish the connection to the dom we have used PHP.
3. For local hosting we have used the live server feature of VS code editor.
4. For implementing the files of the faculty review system, we have used XAMPP software.
5. There are many functions included in the code which will lead users to get their desired results.
6. This website is compatible on any browser but highly recommended are chrome, Microsoft edge, Firefox, opera.

CHAPTER-4: DESIGN METHODOLOGY AND ITS NOVELTY

For designing this project, we are using HTML, CSS, JavaScript along with a bootstrap framework for responsiveness in our VIT INVENTORY website. For all our Front-end needs we used HTML, CSS, JavaScript. Methodology involved- For our attendance calculator we have used a methodology of 75% attendance in our calculator.

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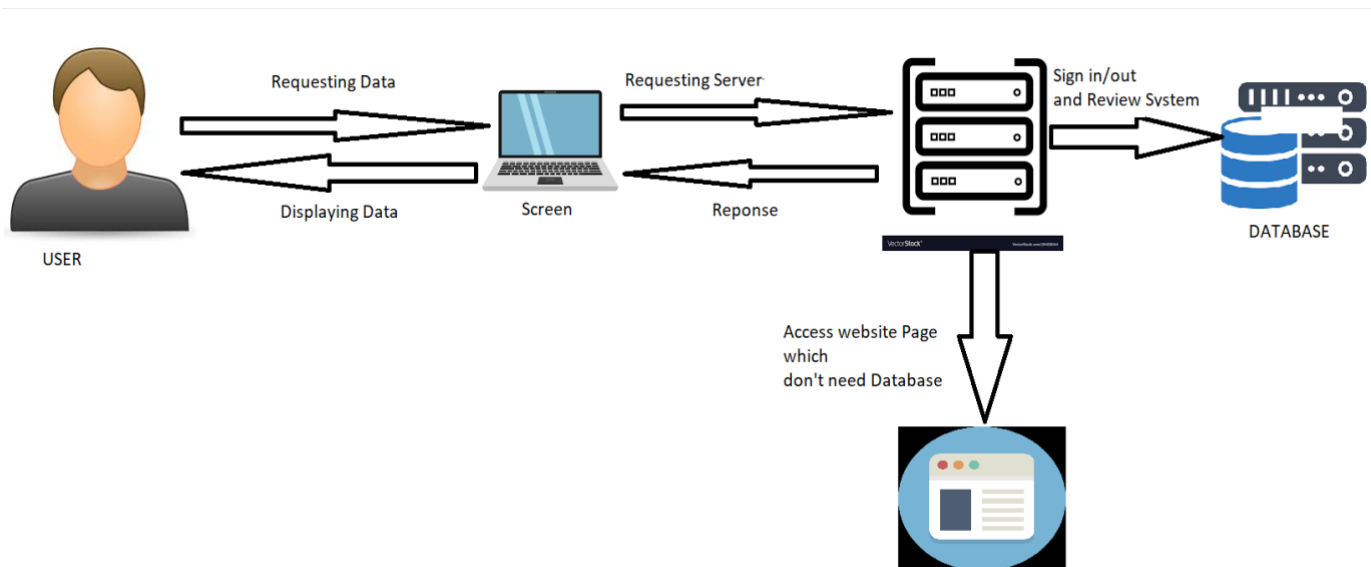
Here our website is divided majorly among modules,

1. Admin Mode
2. Student / user Mode

Here in the Student / user mode, the user can submit the data and retrieve the output, for example the review system, the students can submit the faculty name whom they want to review and the rating they want to give to that faculty, and even they can retrieve the review by just submitting the name of that faculty in the form and the average rating can be calculated through SQL query and the output will be shown with the help of PHP.In the student / user mode the student can input the data in the form and get the results in the CGPA, GPA ,attendance calculator and estimator.

Now looking at Admin module, The admin is able to see the responses of the user which is submitted through the registration form in the review system, The admin can add the webpages in it, The admin maintains the website such that the user gets a good experience. The whole functionality of the calculators will be maintained by the admin.The admin can change the UI of the website to enhance the user experience.

SOFTWARE ARCHITECTURE DIAGRAM



For GPA calculator we have designed a form like page where USER will input the course, course credit and the grade achieved by him/her, and by this data the GPA of a user will be calculated.

For CGPA, we have also designed a form only, where user will input the semesters, the total credits in the semester and the GPA achieved in the semester, by this data the CGPA will be calculated. For Attendance we have designed a page where user will input the Total classes in the semester and the number of classes missed from this it will output the number of classes the user can miss without appearing in the DEBAR list

We have Designed the CGPA estimator where USER will input the Desired CGPA, Current CGPA, Credits taken, Total credits till now, Current semester.

Lastly, we have designed the faculty review system, where we have designed the two forms first one is the Review form where students will give their review on the faculty and their response will get saved in the PHP-MYSQL database.

And from that database the avg rating will be retrieved through the Retrieval form.

Novelty is an important characteristic framework in our project for creative ideas, forming a core component of creating and building new creations. For fulfilling the objective of our project, we are designed a website where we are integrating all of the resources which VIT students wants to access during their learning, under this we will design a GPA, CGPA calculator which will help them to compute their result from grades and also help them to set a target for upcoming exams, they will also have attendance calculator which

will help them in keeping track of their attendance. Even for solving FFCS problems we will design the FFCS helper i.e that is a teacher review system where the students can give reviews on teachers based on most likely, more likely and the satisfactory one. From this the student will get great help in the ffcs.

Our website is novel, because there may be GPA and CGPA calculator in other websites but our group has taken initiative in which we will put all the resources in the one website. We will provide the attendance calculator through which they can keep track of their attendance in this time where everyone is involved in online education.

Even the student has to visit different websites for different resources, but from our website they can access all those resources which they can access from several different websites. Even we have designed the faculty review system so that students will get benefit of that in the teacher choosing procedure

CHAPTER-5: TECHNICAL IMPLEMENTATION & ANALYSIS



VIT-Inventory

[GPA CALCULATOR](#)

[CGPA CALCULATOR](#)

[CGPA ESTIMATOR](#)

[ATTENDANCE CALCULATOR](#)

[VITB-CLUBS](#)

[CODING RESOURCES](#)

All Rounder Website for
VITIANS!

 SIGN UP



Sign in



1) GPA CALCULATOR

GPA CALCULATOR

This gpa Calculator is based on the VIT grading system.

Courses:

Credits:

Grades:

CAO

4

S

OS

4

S

OR

4

A

+ Add Course

- Remove Course

Calculate GPA

Your gpa is 9.67

```

1  function gradeCalc(grade, unit) {
2      if (grade === "S") {
3          return 10 * unit;
4      } else if (grade === "A") {
5          return 9 * unit;
6      } else if (grade === "B") {
7          return 8 * unit;
8      } else if (grade === "C") {
9          return 7 * unit;
10     } else if (grade === "D") {
11         return 6 * unit;
12     } else if (grade === "E") {
13         return 5 * unit;
14     } else if (grade === "F") {
15         return 0 * unit;
16     }
17 }

```

We create a function named as “gradeCalc” taking grade and unit as parameter where, unit is “credit unit”. In this function we consider many cases. Where our first condition is if the grade is equal to “S” we simply return the (10 multiply by unit). and else if the grade is equal to “A” we return the (9 multiply by unit) and similarly we consider all the cases such as if B then (8 multiply by unit) and for C (7 multiply by unit) and for D (6 multiply by unit) and for E (5 multiply by unit) and our last case if grade = F we return (0 multiply by the unit which is simply 0).

```

let counter = 1;

function addCourse() {
    let addNew = document.createElement("form");
    addNew.classList.add("add_new", `key-${counter}`);
    const course_name = `
    <form class="add_new key-${counter}">
        <input type="text" placeholder="Course" class="courses key-${counter}" required>
        <input type="number" placeholder="Credit Unit" class="credit-units key-
    ${counter}" required>
        <select class="grade key-${counter}" required>
            <option value="select">Select</option>
            <option value="10">S</option>
            <option value="9">A</option>
            <option value="8">B</option>
            <option value="7">C</option>
            <option value="6">D</option>
            <option value="5">E</option>
            <option value="0">F</option>
        </select>
    </form>
    `;
    addNew.innerHTML = course_name;
}

```



```

document.getElementById("courses").appendChild(addNew);
counter++;
}

function removeCourse() {
  let mainForm = document.querySelector("form.add_new");
  mainForm.remove();
  counter--;
}

const reports = [];

function calcgpa() {
  const gpaPARAGRAPH = document.getElementById("gpa-calc");
  const GRADESSELECT = document.querySelectorAll("select.grade");
  const UNIT = document.querySelectorAll("input.credit-units");

  const listOfGrades = [];
  const listOfUnits = [];
  let totalUnits = 0;

  GRADESSELECT.forEach((e) => {
    console.log(e)
    let GRADES = e.options;
    const selectedIndex = e.selectedIndex;
    const selectedGrade = GRADES[selectedIndex];
    const gradeValue = selectedGrade.text.toUpperCase();
    listOfGrades.push(gradeValue);
  });
  console.log(listOfGrades);

  UNIT.forEach((e) => {
    const unitValue = parseInt(e.value);
    totalUnits += unitValue;
    listOfUnits.push(unitValue);
  });
  console.log(listOfUnits);

  let totalEarnedUnits = 0;

  for (let i = 0; i < listOfUnits.length; i++) {
    totalEarnedUnits += gradeCalc(listOfGrades[i], listOfUnits[i]);
  }
  const gpa = totalEarnedUnits / totalUnits;

  if (gpa >= 0){

```

```

    gpaPARAGRAPH.textContent = "Your gpa is " + gpa.toFixed(2);
  } else {
    gpaPARAGRAPH.textContent = "Please enter your correct grade and credit units";
  }
}

```

- Counter variable is initialized by 1 which denotes the no. of courses In the semester.
- Function add course adds the html text for input new courses with three divisions viz. course name ,grade acquired and credit units in that course.all elements have classes add new and key which is equal to the counter variable.
- Function remove course removes or deletes the first instance of html elements of type form and class addnew.
- Function calcgpa is where the gpa for the semester is calculated
- 3 variables are initialized first is gparagraph which is used to manipulate the html element with id 'calc-gpa' it refers to the html div which is used to show the final result of gpa calculation.
- Second is gradeselect which refers to all the html div with type select and class grade
- Third is UNIT which refers to all the html divs with type input and class credit units.
- Next we create two arrays listofgrades and listofunits
- Totalunits variable is initialized to 0
- Now for each html element in gradeselect we extract the value of grade acquired and push it into the list of grades for this we create an array of all the options of grades that can be given and chose the acquired one by pointing to the index where the selected grade is by using selectedIndexproperty of select element .
- Similarly all the credit units are pushed to listofunits array.
- We initialize a variable totalearnedunits with 0
- Then a for loop initialized with i =0 runs until i<length of units array and for each iteration the grade acquired and units in the course are passed to gradeclacl function which gives the grade value for that course and each result is added to totalearnedUnits.
- Now finally gpa is calculated by dividing total units by total earned units.
- The formula used can be written as -:
- $$\text{(course credit units * grade acquired in the course) / (sum of all credit units in the semester * 10)}$$
- This value is assigned to the variable gpa and it is assigned to the textcontent of gparagraph variable.
- Hence the acquired gpa value is shown when calculate button is clicked.

2) CGPA CALCULATOR

- Counter variable is initialized by 1 which denotes the no. of semesters.
- Function add course adds the html text for input new semester details with three divisions viz. semester no., gpa acquired and credit units in that semester. All elements have classes add new and key which is equal to the counter variable.
- Function remove course removes or deletes the first instance of html elements of type form and class addnew which in turn removes the last row of the cgpa form.
- Function calcCgpa is where the cgpa for the semester is calculated
- Next we create two arrays listofgpa and listofcredits
- Three variables total gpi total credits and max cgpa initialized with 0
- Three variables declared cgpparagraph which refers to the html div which will hold and show the final calculated value of the cgpa.
- All credits which refers to all the dom elements with type input and class credits units
- All_gpa which points to all the html elements with type input and class gpa-units
- Next we run a for each loop for each element e of all-credits which takes the value of credits in each sem and appends it to the listofcredits and adds the same to total_credits
- Similarly a for each loop runs for each element of allgpa object and rounds its value to 2 digits after the decimal while appending it to the list of grades.
- Next a for loop runs initialized with I = 0 and until I < length of list of gpa adding 1 to I after each iteration
- Inside this loop we calculate the product of credits taken in one semester with the gpa acquired in that semester and add the product to sumofgpis variable
- Now we calculate max possible cgpa by multiplying sum of all credits in all semester with 10
- Now cgpa variable is declared and assigned the value of sumofgpis/max_cgpa
- If the value of cgpa is greater than equal to 0 the value of cgpa is shown when calculate button is clicked or the phrase 'please enter correct details' appears on the webpage.

3) ATTENDANCE CALCULATOR

Attendance Calculator

This Attendance Calculator is based on the VIT 75% attendance rule.

Total Classes in semester:

20

Number of classes Missed:

12

Calculate

Warning!!! Name will occur in Debar list

```

<script language="Javascript">
    var a;
    var b;
    var attendance;
    var left
    var percentage;

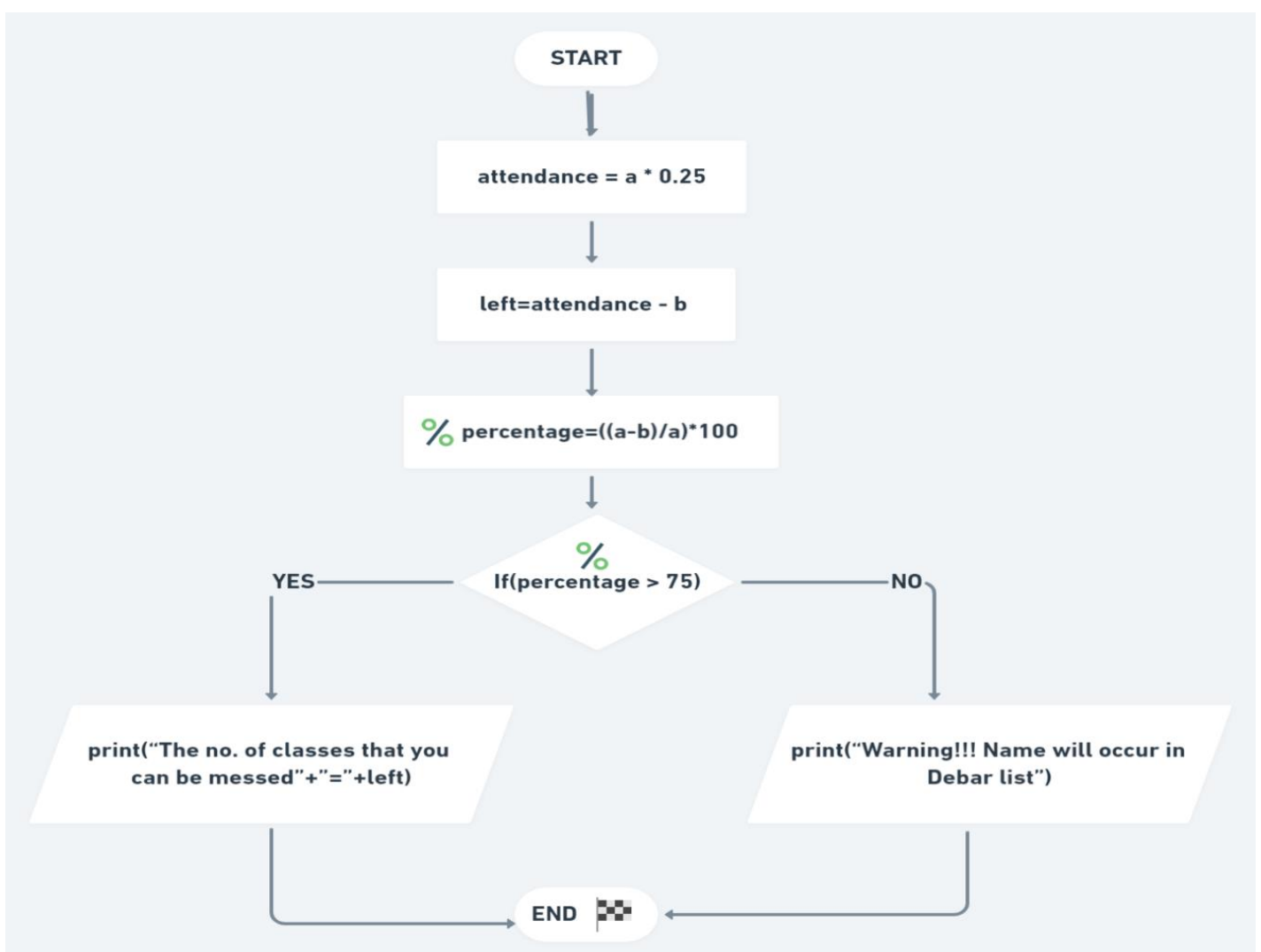
    function Calculate()
    {
        a=parseInt(form1.value1.value);
        console.log(a);
        b=parseInt(form1.value2.value);
        attendance=0.25*a;
        console.log(attendance);
        attendance=Math.round(attendance);
        console.log(attendance);
        left=attendance-b;
        console.log(left);
        percentage=((a-b)/a)*100;
        if(percentage>75)
        {
            alert("The Number of classes that can be missed"+"="+left)
        }
        else{
            alert("Warning!!! Name will occur in Debar list");
        }

        // document.write("The number of classes that can be missed "+"<b>"+left+"<b>"+ "<br>");
    }
</script>

```

- In this firstly we declare variable a, b, attendance, left and percentage.
- Now we create a function “Calculate”.
- In this “a” takes the value from the form (the value entered by the user). This “a” is basically the total no. of classes in the semester.
- And again “b” which takes the value from the form (the value entered by the user). This “b” is no. of missed class.
- Now we take the use of the assigned variable attendance. We do attendance * 0.25 and store in the same attendance variable. Here, we basically calculate the 25% of the total classes in semester. As we know in VIT there is 75% attendance rule means we must have to attend the 75% of class to sit in the examination and 25% of total class we can only miss in the semester. So, we here calculate how many classes one can miss according to the total classes in semester by calculating the 25% of the total classes.

- Then we use the `math.round()` function which basically rounds a number to nearest integer. As we do not consider the attendance variable in the decimal so we convert this in integer form.
- Now, we use the declared variable `left`. We defined `left` as `b` subtracted by the attendance. This basically calculate how many classes one can miss if he already misses “`b`” no. of classes.
- Now we calculate the attendance percentage as “ $((a-b)/a) * 100$ ”. We basically subtract the classes he attends by subtracting the no. of missed classes “`b`” by the no. of total classes “`a`” and we divided this attended class by the total no. of classes “`a`” and then whole multiplied by 100 which gives the attendance percentage.
- Then we apply the if condition which check if the percentage is greater than 75 or not. If it is greater than 75 then we print the no. of classes you can miss by printing the variable `left`. Else it prints that “Warning!!! Name will occur in debar list”



4) CGPA ESTIMATOR

CGPA Estimator

This CGPA Estimator Calculator is based on the VIT grading system.

Desired CGPA :	Current CGPA:	Credits taken:
<input type="text"/>	<input type="text"/>	<input type="text"/>
Total credits till now :		Current semester:
<input type="text"/>		<input type="text"/>
<input type="button" value="Calculate"/>		

```
295     var crecomp;
296     var current;
297     var crenow;
298     var desired;
299     var sumcre;
300     var mulcomp;
301     var semifinal;
302     var final;
303     var superfinal;
304     let final_p = document.getElementById('cgpa-final')
305     function multiseem() {
306         console.log('multi');
307     }
```

```
308
309     function calculate() {
310         crecomp = parseFloat(form1.crecomp.value);
311         console.log(crecomp);
312         //alert(crecomp);
313         current = parseFloat(form1.current.value);
314         console.log(current);
315         //alert(current);
316         crenow = parseFloat(form1.crenow.value);
317         console.log(crenow);
318         //alert(crenow);
319         desired = parseFloat(form1.desired.value);
320         console.log(desired);
321         //alert(desired);
322         sumcre = crecomp + crenow;
323         console.log(sumcre);
324         //alert(sumcre);
325         mulcomp = crecomp * current;
326         console.log(mulcomp);
327         semifinal = desired * sumcre;
328         console.log(semifinal);
329         final = semifinal - mulcomp;
330         console.log(final);
331         //alert(final);
332         superfinal = final / crenow;
333         superfinal = superfinal ? superfinal : 0;
334         if (superfinal <= 10 && superfinal > 0) {
335             final_p.textContent = "you should aim " + superfinal.toFixed(2) + " GPA. Best of Luck! ";
336         }
```


In this we firstly declare all the variables that we are going to use in the function. so our first variable is “crecomp” which indicates no. of credits completed. 2nd variable is “current” which indicates the current CGPA of the user. 3rd variable “crenow” which indicates the no. of credits taken in this semester. 4th variable “desired” which indicates the desired CGPA which the user enter.

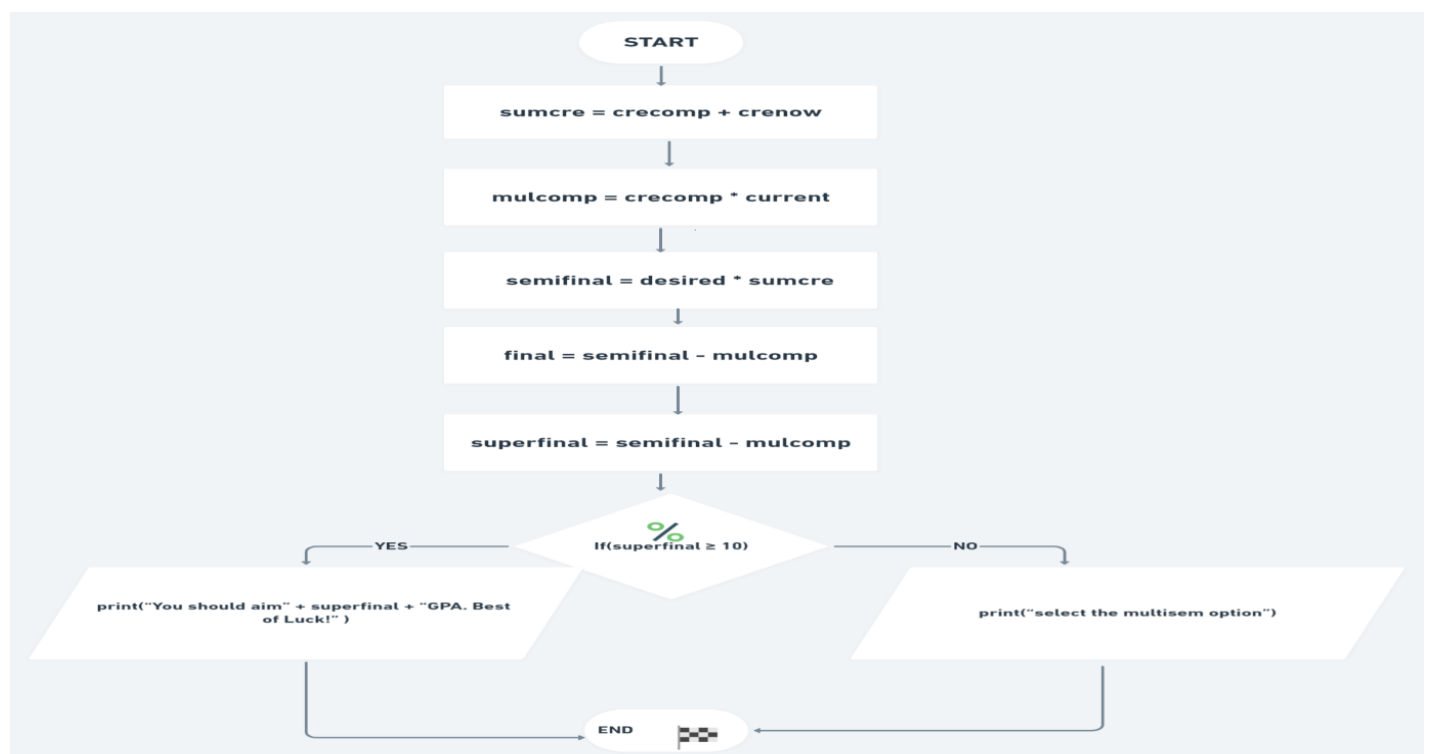
Now the next variables are “sumcre”, “mulcomp”, “semifinal”, “final”, “superfinal” which we declare in the function.

Now we declare the function calculate in which first we accept the value of crecomp, current, crenow, desired through form, all this value is entered by the user. Then we take the use of the declared variable sumcre which calculate the sum of all the credits till this semester.

It basically adds the value of crecomp and crenow. mulcomp which store the value of multiplication of crecomp and current. “mulcomp” is basically the multiplication of the credit completed and the current CGPA and now we take the use of declared variable “semifinal” which is the multiplication of desired CGPA and sumcre (that we assigned earlier).

Now the final will calculate the value of semifinal-mulcomp and finally we divide the final with the crenow (credit taken now) which gives us the superfinal.

Superfinal is basically the GPA that one should target to achieve the desired CGPA in the next semester. and after doing this all calculation we finally apply a if condition if the value of superfinal that is the GPA that one should target is smaller than or equal to 10 then we simply print the value else we calculate for the multisem.



FACULTY REVIEW SYSTEM

In Faculty review system we have two php – html form which is connected to the My-SQL database through PHP

1. INPUT FORM

Here we will take the input of registration number of reviewer, faculty on which he wants to give review, and the rating which he wants to give through the html input tag and we have a submit button on clicking which it gets submitted in the database.

Now we use PHP variables for storing the input given by the user so for this we have used the request method as post and assigned the input values to the respective variables.

Now we have assigned the local host as our server name username as root and we have named our database as _____

So to establish the connection we have use the command `mysqli_connect()` with arguments as servername, username, password and database name.

Now to insert the input values in the database tables we used the sql query of

Insert into TABLE_NAME (column_name) VALUES (all the php variables in which the input variable are stored)

And hence the values are stored in the database

2. DISPLAY FORM

Here also we have formed a form, in which reviewer can get reviews about the faculty, so for this we have here also used the input tag where only user has to input the teacher name so here we have formed the dropdown which contains the teachers name.

Same we have connected the php form by using the php `mysqli_connect()` with arguments as SERVERNAME, USERNAME, PASSWORD, DATABASE NAME

And the value of these values are same as before and here we declare the php variable where we will assign the input value by the user and now we use the sql query for taking the average rating of the faculty.

SELECT AVG(COLUMN NAME) FROM TABLE WHERE TEACHERNAME=INPUT VALUE

And this will be shown as an result.

CHAPTER-6: PROJECT OUTCOME AND APPLICABILITY

The project VIT inventory aims at playing a part in betterment of the students who wish to excel in academics. Therefore to achieve this objective our project is an integration of certain useful resources namely CGPA calculator,GPA calculator, attendance calculator and the FFCS review system .This project will enable the students to access all the much needed resources at one place and will not have to visit different websites for these resources.

Our project can guide even those students who are desirous to make projects in future as by investigating it they might get an idea of creating more useful websites with more resources.The one major outcome can be great academic performance from the students. It will also help students who could not fair well and got low cgpa to score higher in the forthcoming semesters.

Our website will run on any standard pc bout most compatible Operating System is Windows 7,8,10,11,Linux and even mac.It can run on i3 , i5 and higher series.The user with 2 gb ram will also have good experience.Our website is highly recommended on browsers like chrome,Microsoft edge,firefox,opera.

Not just this but the outcome of this project has also helped us students as a to understand working in a group and resolving each others doubts.This will be useful in creating more projects that will include much more progress and applicability in the near future.

CHAPTER-7: CONCLUSIONS AND RECOMMENDATION

In this Project we have done our best to sort out the confusions among students related to the faculties and related to the attendance and of their result in the form of CGPA and GPA.

We know that the FFCS is a crucial procedure for the students of VIT BHOPAL university hence there should be something which can tell about the ratings of teachers.

We have tried our best to give the best user experience possible, so that they can operate this website in a more beneficial manner.

We agree that there are some limitations in our project, but we ensure that this project will get enhanced with our knowledge.

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