***Switch case***

* Write a program to print day of week name using switch case.
* [Write a program to input month number and print number of days in that month.](https://codeforwin.org/2015/05/c-program-to-print-number-of-days-in-month.html)
* Write a program to check whether an alphabet is vowel or consonant using switch case.
* Write a program to find maximum between two numbers using switch case.
* Write a program to check whether a number is even or odd using switch case.
* Write a program to check whether a number is positive, negative or zero using switch case.
* Write a program to create Simple Calculator using switch case.
* Write a program to take grade from user and print message accordingly.

|  |  |
| --- | --- |
| GRADE | MESSAGE |
| A | Excellent |
| B | Very Good |
| C and D | You have passed |
| F | Better try again |
| Default | Enter valid grade |

* Write a program to check whether entered character is alphabet, digit or special character.
* Write a menu driven program which has following options:

1. Factorial of a number
2. Prime or not
3. Odd or Even
4. Exit

Once a menu item is selected the appropriate action should be taken. Unless the user selects the ‘Exit’ option the program should continue to work.

* Write a C program to find the grace marks for a student using switch. The user should enter the class obtained by the student and the number of subjects he has failed in. Use the following logic:

-- If the student gets first class and the number of subjects, he failed in is greater than 3, then he does not get any grace. Otherwise, the grace is of 5 marks per subject.

-- If the student gets second class and the number of subjects, he failed in is greater than 2, then he does not get any grace. Otherwise, the grace is of 4 marks per subject.

-- If the student gets third class and the number of subjects, he failed in is greater than 1, then he does not get any grace. Otherwise, the grace is of 5 marks per subject.

***if else***

* Write a program to find minimum between two numbers.
* Write a program to find maximum between two numbers.
* Write a program to check whether number is even or odd.
* Write a program to check whether number is positive or negative.
* Write a program to find absolute value of a number.
* Write a program to check whether number is divisible by 4 or not.
* Write a program to check whether number is divisible by 3 or divisible by 4.
* Write a program to check whether number is divisible by 5 and 11 or not.
* Write a program to take Age from user. Display message accordingly

Age > 18 then “License will be granted”

Age <= 18 then “License will not be granted”

* Write a program to take Balance from user. Display message accordingly

Balance > 1000 then “You can withdraw money”

Balance <= 1000 then “You can’t withdraw money”

* Write a program to take gender (M=Male, F=Female) and Age input through keyboard. Display message accordingly

Age>=18 and Gender = ‘F’ then “You are eligible for marriage”

Age>=21 and Gender = ‘M’ then “You are eligible for marriage”

In all other cases “You are not eligible for marriage”

* A company insures its driver in the following cases:

-- If the driver is married

-- If the driver is unmarried, male and above 30 years of age

-- If the driver is unmarried, female and above 25 years of age

In all other cases the driver is not insured. If the marital status (M=Married, U=Unmarried), gender (M=Male, F=Female) and age of driver are inputs, write a program to determine whether the driver should be insured or not.

* Write a program to check whether entered character is alphabet or not.
* Write a program to check whether entered letter is vowel or consonant.
* Write a program to check whether entered alphabet is lowercase letter or uppercase letter.
* While purchasing certain items, a discount of 10% is offered if the quantity purchased is more than 1000. If quantity and price per item are input through keyboard, write a program to calculate total expenses.
* In a company an employee is paid as under:

--If his Basic Salary (BS) is less than Rs.1500, then HRA = 10% of basic salary and DA = 90% of basic salary.

--If his Basic Salary is equal to or above Rs.1500, then HRA = Rs. 500 of basic salary and DA = 98% of basic salary.

--If the employee’s salary is input through the keyboard write a program to find his Gross Salary (Gross Salary = BS + HRA + DA).

* Write a program to check whether a triangle is valid or not. Take three angles as input from user (If sum of the angles of triangle=180 then it is a valid triangle)
* Given three points (x1, y1), (x2, y2) and (x3, y3), write a C program to check if all the three points fall on one straight line.
* Write a program to count number of notes in amount OR to count minimum number of denominations for given amount.

***Nested if…else***

* Write a program to check whether number is positive, negative or zero.
* Write a program to check whether number is odd or even. If even then check whether divisible by 4 or not. If odd check whether divisible by 5 or not.
* Write a program to find maximum between three numbers.(Use only relational operators)
* Write a program to find minimum between three numbers. (Use only relational operators)
* Write a program to check whether three numbers are equal or not.
* Write a program to compare three numbers. Print message accordingly whether equal or print greater number and smaller number.
* Write a program to check equal numbers out of three numbers entered by user.
* Write a program to check whether year is leap year or not.
* Write a program to check whether a triangle is valid or not. Take three sides from user. (If sum of two sides of triangle is greater than largest of three sides, then it is valid triangle)
* Write a program to check whether entered character is alphabet or not. If yes, check whether it is a vowel or consonant.
* Write a program to check whether entered character is alphabet or not. If yes, check whether it is uppercase letter or lowercase letter and whether it is a vowel or consonant.

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*done till 28/3/2023\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

***if…else…if Ladder***

* Write a program to find maximum (or minimum) between three numbers.nb
* Write a program to find maximum(or minimum) between four numbers.
* Write a program to check whether number is positive, negative or zero.
* If the lengths of three sides of a triangle are entered through keyboard, [write a program to check whether it is equilateral, isosceles, scalene triangle or right angled triangle.](https://codeforwin.org/2015/05/c-program-to-check-whether-triangle-is-equilateral-isosceles-scalene.html) (Equilateral=all sides equal, Isosceles=2 sides equal, Scalene=No sides equal)
* [Write a program to input week number and print weekday](https://codeforwin.org/2015/05/c-program-to-print-week-name.html).(Hint: if 1 then Monday)
* [If month number (1 to 12) is input through keyboard, write a program that prints corresponding month.](https://codeforwin.org/2015/05/c-program-to-print-week-name.html)
* If cost price and selling price of an item is input through the keyboard, write a program to determine whether the seller has made profit or incurred loss. Also determine how much profit he made or loss he incurred.
* Write a program to check whether entered character is alphabet, digit or special character.
* Write a program to convert user entered character to its opposite case. Program should also flash an error message if the character entered by user is not an alphabet.
* Given the coordinates (x, y) of centre of a circle and its radius, write a program which will determine whether a point lies inside the circle, on the circle or outside the circle. (Hint: Use sqrt() and pow() functions)
* Given a point (x, y), write a program to find out if it lies on the X-axis, Y-axis or origin.
* According to the Gregorian calendar, it was Monday on the date 01/01/01. If any year is input through the keyboard, write a program to find out what is the day on 1st January of this year.
* Write a program to validate date entered by user in format dd/mm/yyyy
* Enter date in dd/mm/yyyy format. Write a program to print total number of days in month and the month in words. For example, if date is entered as 23/07/2009 then display the message as – “July has 31 days”. Your program should take care of leap years.
* Write a program to create Simple Calculator. Take two numbers and Symbol input through keyboard and perform operation accordingly.

-- Symbol ‘+’ for Addition

-- Symbol ‘-’ for Subtraction

-- Symbol ‘\*’ for Multiplication

-- Symbol ‘/’ for Division

* Write a program to print grade of student based on marks. Take marks from user.

|  |  |
| --- | --- |
| MARKS | GRADE |
| Between 75 to 100 | A |
| Between 45 to 74 | B |
| Between 35 to 44 | C |
| Less than 35 | D |

* If a character is entered through the keyboard, write a program to determine whether the character is capital letter, small letter, digit or special symbol. The following table shows ASCII values of various characters:

|  |  |
| --- | --- |
| CHARACTER | ASCII values |
| A – Z | 65 – 90 |
| a – z | 97 – 122 |
| 0 – 9 | 48 – 57 |
| Special Symbols | 0 - 47, 58 – 64, 91 – 96, 123 -127 |

* Write a program to accept an empID and deptNo as numeric data and designCode as character data. Display the entered data with proper messages.

|  |  |  |  |
| --- | --- | --- | --- |
| DEPARTMENT NO. | DEPARTMENT NAME | DESIGNATION CODE | DESIGNATION |
| 10 | Purchase | ‘M’ | Manager |
| 20 | Sales | ‘A’ | Analyst |
| 30 | Production | ‘W’ | Worker |
| 40 | Marketing | ‘S’ | Salesperson |
| 50 | Accounts | ‘C’ | Clerk |

If empId=101, designCode=’M’ and deptCode=10 then the message displayed should be like this – “Employee with id 101 works in PURCHASE department as “MANAGER”

* If Gender (M or F), Years of Service and Qualification (G or P) is entered through keyboard, write a program to print salary as per the following table:

|  |  |  |  |
| --- | --- | --- | --- |
| GENDER  (M=Male, F=Female) | YEARS OF SERVICE | QUALIFICATION  (G=Graduate, P=PostGraduate) | SALARY |
| MALE | >=10 | Post-Graduate | 11000 |
| >=10 | Graduate | 10000 |
| <10 | Post-Graduate | 10000 |
| <10 | Graduate | 7000 |
| FEMALE | >=10 | Post-Graduate | 12000 |
| >=10 | Graduate | 9000 |
| <10 | Post-Graduate | 10000 |
| <10 | Graduate | 6000 |

* The Body Mass Index (BMI) is defined as ratio of the weight of a person (in kgs) to the square of the height (in m). Write a program that receives weight and height, calculates the BMI and reports the BMI category as per the table:

|  |  |
| --- | --- |
| BMI Category | BMI |
| Starvation | < 15 |
| Anorexic | 15.1 to 17.5 |
| Underweight | 17.6 to 18.5 |
| Ideal | 18.6 to 24.9 |
| Overweight | 25 to 25.9 |
| Obese | 30 to 30.9 |
| Morbidly Obese | >=40 |

* Write a program for calculating bonus of employee depending on salary. Print bonus and net salary.

Bonus = Salary\*(Bonus percentage/100)

Net salary = Salary + Bonus

|  |  |
| --- | --- |
| SALARY | Bonus in percentage |
| Greater than 50000 | 20% |
| 40001 to 50000 | 15% |
| 30001 to 40000 | 10% |
| Less than 30000 | 5% |

* Write a program to take Basic Salary (BS) from user and calculate Gross Salary (GS) according to given conditions:

|  |  |  |
| --- | --- | --- |
| BASIC SALARY | HRA | DA |
| Less than 10000 | 20% | 80% |
| 10001 to 20000 | 25% | 90% |
| Greater than 20001 | 30% | 95% |

GS = BS + HRA + DA (Use float values and print Gross Salary upto 2 decimal places)

* A certain grade of steel is graded according to the following conditions:

-- Hardness must be greater than 50

-- Carbon content must be less than 0.7

-- Tensile strength must be greater than 5600

The grades are as follows:

Grade is 10 if all three conditions are met

Grade is 9 if conditions (i) and (ii) are met

Grade is 8 if conditions (ii) and (iii) are met

Grade is 7 if conditions (i) and (iii) are met

Grade is 6 if only one condition is met

Grade is 5 if none of the conditions are met

Write a program which will require the user to give values of hardness, carbon content and tensile strength of the steel under consideration and output the grade of the steel.

* Write a program to input marks of five subjects Physics, Chemistry, Biology, Mathematics and Computer (Marks are out of 100). Calculate percentage and grade and print according to following: Percentage >= 90% : Grade A

Percentage >= 80% : Grade B

Percentage >= 70% : Grade C

Percentage >= 60% : Grade D

Percentage >= 40% : Grade E

Percentage < 40% : Grade F

***Conditional Operator***

* Write a program to find maximum of two numbers.
* Write a program to find minimum between two numbers.
* Write a program to check whether number is even or odd.
* Write a program to check whether number is positive or negative.
* Write a program to check whether year is leap year or not
* Write a program to find absolute value of a number.
* Write a program to check whether entered alphabet is lowercase letter or uppercase letter.
* Write a program to check whether entered character is special symbol or not.
* Write a program to find greatest of the three numbers entered through keyboard.
* Write a program which takes salary from user and accordingly print designation.

|  |  |
| --- | --- |
| SALARY | DESIGNATION |
| 25001 to 40000 | Manager |
| 15001 to 25000 | Accountant |
| 8000 to 15000 | Clerk |