**Notre Dame University Bangladesh**

**Lab Report**

 **CSE 1201: Structured Programming Language, Fall 2022**

**Submitted By Submitted To**

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**Subject: CSE 1201**

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**Sample Output for the different test-cases:-**

**Enter the number of items: 1**

**You have 1 item.**

**Enter the number of items: 2**

**You have 2 items. -----------------------------------------------------------------------------------------------16**

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**If-else If ladder**

**Problem Name Page**

1. **Admission to a professional course in subject to the**

**following conditions:**

**Marks in**

**mathematics >=60**

**Marks in**

**Physics >=50**

**Marks in**

**Chemistry >=40**

**Total in**

**all three subjects >=200**

**or**

**Total in mathematics and physics>=150.**

**Given the marks in the three subjects, write a program in C**

**to process the applications to list the eligible candidates.-----------------------------------------------21**

1. **An electric power distribution company charges its domestic consumers as follows:**

**Consumption**

**Units Rate of Charge**

**0 -**

**200 BDT 0.50**

**per unit**

**201 -**

**400 BDT 100**

**plus BDT 0.65 per unit excess of 200**

**401 -**

**600 BDT 230**

**plus BDT 0.80 per unit excess of 400**

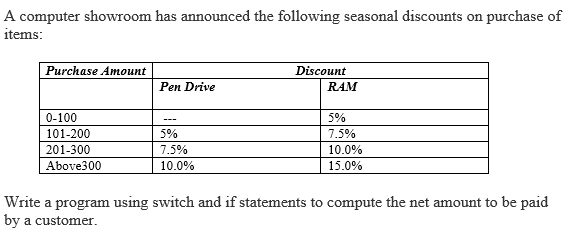
**601 and**

**above BDT 390 plus BDT**

**1.00 per unit excess of 600**

**Write a program to read number of units consumed and print**

**out the amount to be paid by the customer.-----------------------------------------------------------21-22**

**-------------------------23-24**

1. **Take values of length and breadth of a rectangle from user and check if it is square or not.--24**
2. **Take two int values from user and print greatest among them.--------------------------------------25**
3. **Write a C program to input amount from user and print minimum number of notes**

**(TK. 1000, 500, 100, 50, 20, 10, 5, 2, 1) required for the amount.**

**Sample Input:**

**Input**

**amount: 575**

**Sample Output :**

**Total number of notes:**

**1000: 0**

**500: 1**

**100: 0**

**50: 1**

**20: 1**

**10: 0**

**5: 1**

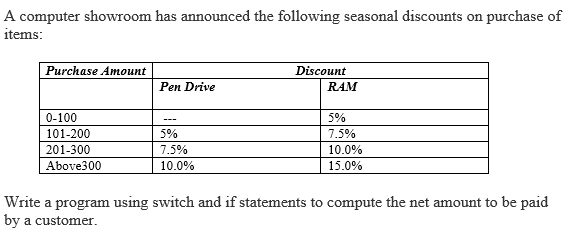
**2: 0**

**1: 0------------------------------------------------------------------------------------------------------------------26**

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**Problem Name Page**

1. **A computer showroom has announced the following seasonal discounts on purchase of items:**

** ---27-28**

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3. **Write a menu-driven C program to find the area of the circle, area of the triangle and area of the rectangle according to the user's input choice.**

**The area is given by,**

**circle PI\*x\*x**

**triangle 0.5"bare"height**

**rectangle length breadth----------------------------------------------------------------------------------30-31**

1. **Write a menu-driven C program to convert a given year into,**

**Months**

**Days**

**Hours**

**Minutes**

**Seconds**

**For simplicity don't include leap year, use**

**1 Year = 365 days**

**1 Month = 30 days----------------------------------------------------------------------------------------------31**

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8. **Combine all the 7 codes above.---------------------------------------------------------------------------39-41**

**Lab-1 Codes**

**Introduction to C**

**Code 1: Print ‘We are CSE Students’.**

**Source Code:**

#include <stdio.h>

main()

{

printf("We are CSE Students");

}

**Code 2: Line Break.**

**Source Code:**

#include <stdio.h>

main()

{

printf("NDUB\n");

printf("CSE\n");

printf("Shazidul Alam\n");

printf("009\n");

}

**Code 3: Create a triangle\Pyramid using #.**

**Source Code:**

#include <stdio.h>

main()

{

printf(" # # #\n");

printf(" #\n");

printf(" # # #\n");

printf(" #\n");

printf(" #\n");

printf(" #\n");

}

**Code 4: Draw ‘A’ using #.**

**Source Code:**

#include <stdio.h>

main()

{

printf(" # \n");

printf(" # # \n");

printf(" ##### \n");

printf(" # # \n");

printf(" # # \n");

}

**Code 5: Draw ‘C’ using #.**

**Source Code:**

**Page 1**

#include <stdio.h>

main()

{

printf(“ # # \n”);

printf(“ # # \n”);

printf(“ # # # \n”);

printf(“ # \n”);

printf(“ # \n”);

printf(“ # \n”);

printf(“ # \n”);

printf(“ # \n”);

printf(“ # \n”);

printf(“ # \n”);

printf(“ # \n”);

printf(“ # \n”);

printf(“ # \n”);

printf(“ # \n”);

printf(“ # \n”);

printf(“ # \n”);

printf(“ # \n”);

}

**Code 6: Display multiplication table of 5.**

**Source Code:**

#include <stdio.h>

main()

{

printf(“ 5X1=5 \n”);

printf(“ 5X2=10 \n”);

printf(“ 5X3=15 \n”);

printf(“ 5X4=20 \n”);

printf(“ 5X5=25 \n”);

printf(“ 5X6=30 \n”);

printf(“ 5X7=35 \n”);

printf(“ 5X8=40 \n”);

printf(“ 5X9=45 \n”);

printf(“ 5X10=50 \n”);

}

**Code 7: Draw a rectangle and parallelogram using #.**

**Source Code:**

#include <stdio.h>

main()

{

printf(“ ######################\n”);

printf(“ # #\n”);

printf(“ # #\n”);

printf(“ # #\n”);

printf(“ # #\n”);

printf(“ ######################\n”);

printf(“##############\n”);

printf(“# #\n”);

printf(“# #\n”);

printf(“# #\n”);

printf(“# #\n”);

printf(“##############\n”);

}

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**Lab-2 Codes**

**General Problem**

**Code 1: Input two numbers from the keyboard, find out the summation of two numbers.**

**Source Code:**

#include <stdio.h>

int main( void )

{

int integer1;

int integer2;

int sum;

printf("Enter the first integer\n");

scanf( "%d", &integer1 );

printf("Enter the second integer\n");

scanf( "%d", &integer2 );

sum = integer1 + integer2;

printf("Sum is %d\n", sum );

return 0;

}

**Code 2: Find out the area of a Rectangle shaped Room.**

**Source Code:**

#include<stdio.h>

int main( void )

{

int length;

int width;

int area;

printf("Enter length");

scanf( "%d",&length );

printf("Enter width\n");

scanf( "%d",&width );

area = length\*width;

printf("area is %d\n", area );

return 0;

}

**Code 3: Find out the area of a Square shaped Room.**

**Source Code:**

#include<stdio.h>

int main( void )

{

int length;

int area;

printf("Enter length");

scanf( "%d",&length);

area=length\*length;

printf("area is %d\n",area);

return 0; }

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**Code 4: Write down all three program from P1 to P3 in a single Code.**

**Source Code:**

#include <stdio.h>

int main( void )

{

int num1;

int num2;

int sum;

printf("Enter 1st integer");

scanf("%d",&num1);

printf("Enter 2nd integer");

scanf("%d",&num2);

sum=num1+num2;

printf("summation result is %d\n",sum);

int length;

int breadth;

int area;

printf("Enter length");

scanf("%d",&length);

printf("Enter breadth");

scanf("%d",&breadth);

area=length\*breadth;

printf("area is %d\n",area);

int side;

int area\_of\_the\_square;

printf("Enter the side");

scanf("%d",&side);

area\_of\_the\_square=side\*side;

printf("Area of the square is %d\n",area\_of\_the\_square);

return 0;

}

**Code 5: There were 4687 people in a village in the last year. in this year, 349 people moved in and 280 people moved out of the village. how many people are there in this year?**

**Source Code:**

#include <stdio.h>

int main( void )

{

int People\_in\_the\_village\_last\_year;

int People\_moved\_in;

int People\_moved\_out;

int People\_in\_the\_village\_this\_year;

printf("People in the village last year\n");

scanf("%d", & People\_in\_the\_village\_last\_year);

printf("enter Moved in\n");

scanf("%d", & People\_moved\_in);

printf("enter Moved out\n");

scanf("%d", & People\_moved\_out);

People\_in\_the\_village\_this\_year=People\_in\_the\_village\_last\_year+People\_moved\_in-People\_moved\_out;

printf("People in the village this year %d\n", People\_in\_the\_village\_this\_year);

}

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**Code 6: A butcher sells beef at 700 Taka per KG and mutton at 800 taka per kg. if we buy 3 kg of beef and 2 kg of mutton, and pay 4000 Taka, how much will be the change?**

**Source Code:**

#include <stdio.h>

int main( void )

{

int beef;

int mutton;

int kgm;

int kgb;

int pay;

int sum;

printf("enter the beef cost per kg\n");

scanf("%d",&beef);

printf("enter the mutton cost per kg\n");

scanf("%d",&mutton);

printf("enter the how many kg beef you need\n");

scanf("%d",& kgb);

printf("enter the how many kg mutton you need\n");

scanf("%d",& kgm);

printf("enter the how much money did the customer paid\n");

scanf("%d",& pay);

sum=pay-(beef\*kgb+mutton\*kgm);

printf("sum is %d\n", sum);

}

**Code 7: Mr. X’s monthly salary is P Taka. Every month he spends A Taka for house rent, B taka for household expenses. He saves the remaining money in a bank. What amount of money does Mr. X save in a year?**

**Source Code:**

#include <stdio.h>

int main( void )

{

int salary;

int house\_rent;

int monthly\_expenses;

int money\_saving;

printf("Enter salary");

scanf("%d",&salary);

printf("Enter house rent");

scanf("%d",&house\_rent);

printf("Enter monthly expenses");

scanf("%d",&monthly\_expenses);

money\_saving=salary-house\_rent-monthly\_expenses;

printf("Amount of money he is saving is %d",money\_saving);

return 0;

}

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**Code 8: M and R together have X amount of Taka. M has 550 Taka more than R. How much money does M and R each has? You have to input the total amount of money.**

**Source Code:**

#include <stdio.h>

int main( void )

{

int M\_and\_R\_together\_have;

int M\_has;

int R\_has;

printf("M and R together have\n");

scanf("%d", & M\_and\_R\_together\_have);

R\_has=(M\_and\_R\_together\_have-550)/2;

printf("R has %d\n", R\_has);

M\_has=(R\_has+550);

printf("M has %d\n", M\_has);

}

**Code 9: M and R together have 8500 Taka. M has 480 Taka less than R. how much money does M and**

**R each has?**

**Source code:**

#include <stdio.h>

int main( void )

{

int M\_and\_R\_together\_have;

int M\_has;

int R\_has;

printf("M and R together have\n");

scanf("%d", & M\_and\_R\_together\_have);

R\_has=(M\_and\_R\_together\_have+480)/2;

printf("R has %d\n", R\_has);

M\_has=(R\_has-480);

printf("M has %d\n", M\_has);

}

**Code 10: The sum of ages of a Father and his daughter is 80 years. Father’s age is four times the age of the daughter. What are their ages?**

**Source Code:**

#include <stdio.h>

int main( void )

{

int Father\_and\_daughters\_combined\_age;

int Fathers\_age;

int Daughters\_age;

printf("enter Father and daughters combined age\n");

scanf("%d", & Father\_and\_daughters\_combined\_age);

Daughters\_age=Father\_and\_daughters\_combined\_age/5;

printf("Daughters age %d\n", Daughters\_age);

Fathers\_age=Daughters\_age\*4;

printf("Fathers age %d\n", Fathers\_age);

}

**Page 6**

**Code 11: The price of 2 cows and 3 goats together 98050 Taka. The price of 1 goat is 6800 taka. what is the price of one cow?**

**Source Code:**

#include <stdio.h>

int main( void )

{

int Price\_of\_one\_goat;

int Price\_of\_one\_cow;

printf("Price of one goat\n");

scanf("%d", & Price\_of\_one\_goat);

Price\_of\_one\_cow=(98050-Price\_of\_one\_goat\*3)/3;

printf("Price of one goat %d\n", Price\_of\_one\_cow);

}

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**Lab-3 Codes**

**Arithmetic Operators**

**Code 1: Write a C program to convert a given integer (in seconds) to hours, minutes and seconds.**

**Sample Input :**

**Input seconds: 25300**

**Sample Output:**

**There are:**

**H:M:S - 7:1:40**

**Source Code:**

//Convert seconds into hours, minutes and seconds.

#include<stdio.h>

int main()

{

int hour,min,sec;

printf("Enter the sec\n");

scanf("%d",&sec);

hour=sec/3600;

sec=sec%3600;

min=sec/60;

sec=sec%60;

printf("hour:%d\t min:%d\t sec:%d", hour, min, sec);

return 0;

}

**Code 2: Write a C program to convert specified days into years, weeks and days. Ignore leap year.**

**Sample Input :**

**Number of days : 1329**

**Sample Output :**

**Years: 3**

**Weeks: 33**

**Days: 3**

**Source Code:**

/\* C Program to Convert Days to Years Weeks and Days \*/

#include <stdio.h>

int main()

{

int Days, years, weeks, days;

printf("\n Please Enter the Number of days : ");

scanf("%d", &Days);

years = Days / 365;

weeks = (Days % 365) / 7;

days = (Days % 365) % 7;

printf("\n Years = %d", years);

printf("\n Weeks = %d", weeks);

printf("\n Days = %d", days);

return 0;

}

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**Code 3: Write a C program to convert a given integer (in days) to years, months and days, assumes that all months have 30 days and all years have 365 days.**

**Sample Input :**

**Input no. of days: 2535**

**Sample Output:**

**6 Year(s)**

**11 Month(s)**

**15 Day(s)**

**Source Code:**

//Convert days to years, months and days assumes that all months have 30 days and all years have 365 days

#include <stdio.h>

int main() {

int ndays, years, months, days;

printf("Input no. of days: ");

scanf("%d", &ndays);

years = (int) ndays/365;

ndays = ndays-(365\*years);

months = (int)ndays/30;

days = (int)ndays-(months\*30);

printf(" %d Years \n %d Months \n %d Days", years, months, days);

return 0;

}

**Code 4: Write a C program to calculate a bike’s average consumption from the given total distance (integer value) traveled (in km) and spent fuel (in liters, float number – 2 decimal point).**

**Sample Input :**

**Input total distance in km: 350**

**Input total fuel spent in liters: 5**

**Sample Output:**

**Average consumption (km/lt) 70.000**

**Source Code:**

//Calculate a bike's average consumption from the given total distance

#include <stdio.h>

int main()

{

int x;

float y;

printf("Input total distance in km: ");

scanf("%d",&x);

printf("Input total fuel spent in liters: ");

scanf("%f", &y);

printf("Average consumption (km/liters) %.3f ",x/y);

printf("\n");

return 0;

}

**Page 9**

**Code 5: There are X grams of rice at home. If we eat Y (Y<X) grams of rice every day, when the rice will be finish?**

**Source Code:**

#include<stdio.h>

int main()

{

int total\_numofrice;

int daily\_cons;

int days\_to\_finish;

printf("Enter the amount of rice in the house\n");

scanf("%d",&total\_numofrice);

printf("Enter the number of rice daily consumed\n");

scanf("%d",&daily\_cons);

days\_to\_finish=total\_numofrice/daily\_cons;

printf("Rice will be consumed in %d days",days\_to\_finish);

return 0;

}

**Code 6: N pieces of papers are necessary to prepare one book, how many books can be prepared by M (M>N) pieces of papers?**

**Source Code:**

#include<stdio.h>

int main()

{

int num\_papers;

int num\_papers\_onebook;

int number\_book;

printf("Enter the number of papers for books\n");

scanf("%d",&num\_papers);

printf("Enter the numbers of papers for one book\n");

scanf("%d",&num\_papers\_onebook);

number\_book=num\_papers/num\_papers\_onebook;

printf("%d books can be made",number\_book);

return 0;

}

**Code 7: A company gained profit of 95200 Taka in business and wanted to distribute this money equally to its employees. if 800 taka was given to each employee, how many employees are there in the company?**

**Source Code:**

#include<stdio.h>

int main()

{

int profit;

int num\_employee;

printf("Enter the gained profit\n");

scanf("%d",&profit);

num\_employee=profit/800;

printf("There are %d employees",num\_employee);

return 0;

}

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**Code 8: Generalize the problem 7.**

**Source Code:**

#include<stdio.h>

int main()

{

int profit;

int num\_employee;

int money\_dist\_each;

printf("Enter the gained profit\n");

scanf("%d",&profit);

printf("Enter the money distributed to each employee\n");

scanf("%d",&money\_dist\_each);

num\_employee=profit/money\_dist\_each;

printf("There are %d employees",num\_employee);

return 0;

}

**Code 9: Every 250 products are packed in one cardboard box. in order to pack 43548 products, how many boxes will be necessary?**

**Source Code:**

#include<stdio.h>

int main()

{

int num\_products;

int num\_box;

printf("Enter number of number of products\n");

scanf("%d",&num\_products);

num\_box=num\_products/250;

printf("number of boxes %d",num\_box);

return 0;

}

**Code 10: Generalize the problem 9.**

**Source Code:**

#include<stdio.h>

int main()

{

int num\_products;

int num\_prod\_to\_fill;

int num\_box;

printf("Enter number of products\n");

scanf("%d",&num\_products);

printf("Number of products required to fill the box\n");

scanf("%d",&num\_prod\_to\_fill);

num\_box=num\_products/num\_prod\_to\_fill;

printf("The number of boxes required %d",num\_box);

return 0;

}

**Page 11**

**Code 11: The price of 8 eggs is 72 takas. If we buy 15 pieces of eggs, how much do we need to pay?**

**Source Code:**

#include<stdio.h>

int main()

{

int am\_eggs;

int bill;

printf("Enter amount of eggs\n");

scanf("%d",&am\_eggs);

bill=am\_eggs\*9;

printf("The bill is %d",bill);

return 0;

}

**Code 12: Generalize the problem 11.**

**Source Code:**

#include<stdio.h>

int main()

{

int am\_eggs;

int bill;

int cost\_pp;

printf("Enter amount of eggs\n");

scanf("%d",&am\_eggs);

printf("Cost per egg\n");

scanf("%d",&cost\_pp);

bill=am\_eggs\*cost\_pp;

printf("The bill is %d",bill);

return 0;

}

**Code 13: If the price of 4 bananas is 80 Taka, how much is the price for 10 bananas?**

**Source Code:**

#include<stdio.h>

int main()

{

int am\_banana;

int bill;

printf("Enter the number of banana");

scanf("%d",&am\_banana);

bill=am\_banana\*20;

printf("The bill is %d",bill);

return 0;

}

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**Code 14: Generalize the problem 13.**

**Source Code:**

#include<stdio.h>

int main()

{

int am\_banana;

int cost\_pb;

int bill;

printf("Enter the number of banana\n");

scanf("%d",&am\_banana);

printf("Enter cost per banana\n");

scanf("%d",&cost\_pb);

bill=am\_banana\*cost\_pb;

printf("The bill is %d",bill);

return 0;

}

**Code 15: Aysha bought 8 pencils at 64 Taka. How much will she pay if she buys 24 pencils?**

**Source Code:**

#include<stdio.h>

int main()

{

int num\_pencil;

int bill;

printf("Enter the number of pencil");

scanf("%d",&num\_pencil);

bill=num\_pencil\*8;

printf("The bill is %d",bill);

return 0;

}

**Code 16: Generalize the problem 15.**

**Source Code:**

#include<stdio.h>

int main()

{

int num\_pencil;

int cost\_pencil;

int bill;

printf("Enter the number of pencil\n");

scanf("%d",&num\_pencil);

printf("Cost per pencil\n");

scanf("%d",&cost\_pencil);

bill=num\_pencil\*cost\_pencil;

printf("The bill is %d",bill);

return 0;

}

**Page 13**

**Code 17: Write a program to calculate the sum of the first and the second last digit of a 5 digit number entered from the keyboard.**

**Source Code:**

#include<stdio.h>

int main()

{

int first,second,third,fourth,fifth;

int sum;

int remain\_numbers;

printf("Enter the 5 digits\n");

scanf("%d%d%d%d%d",&first,&second,&third,&fourth,&fifth);

sum=first+second+fifth;

printf("the sum is %d\n",sum);

remain\_numbers=(third,fourth);

printf("Remaining numbers are %d",remain\_numbers);

return 0;

}

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**Lab-4 Codes**

**Conditional and other Operators**

**Code 1: Write a C program to find the maximum in the given two numbers using the conditional operator.**

**Source Code:**

#include<stdio.h>

int main()

{

int num1, num2;

printf("Enter 2 numbers \n\n");

scanf("%d%d", &num1, &num2);

int max;

max = (num1>num2) ? num1 : num2;

printf("Maximum of %d and %d : %d", num1, num2, max);

}

**Code 2: Write a C program to find the inputted number is positive or negative using the conditional operator.**

**Source Code:**

void main()

{

int number;

printf("Enter a number:\t");

scanf("%d", &number);

(number > 0) ? printf("%d is a positive number\n", number):

(number < 0) ? printf("%d is a negative number\n", number):

printf("Number is zero\n");

}

**Code 3: Write a C program to check whether the given number is odd or even using the conditional operator in C.**

**Source Code:**

#include<stdio.h>

int main()

{

int num;

printf("Enter an integer: ");

scanf("%d", &num);

(num % 2 == 0) ? printf("%d is even.", num) : printf("%d is odd.", num);

return 0;

}

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**Code 4: Write a C program to find the minimum of two numbers using the conditional operator.**

**Source Code:**

#include<stdio.h>

void main()

{

int a,b,small;

printf("Enter two number\n");

scanf("%d %d",&a,&b);

small = a<b?a:b;

printf("Smallest among 2 number is : %d",small);

}

**Code 5:** **Write a program to enter two numbers. Make a comparison between them with the conditional operator. If the first number is greater than the second, perform a division operation otherwise multiplication operation.**

**Source Code:**

#include<stdio.h>

int main()

{

float a,b,result;

printf("enter two number;");

scanf("%f %f", &a, &b);

result= (a>b) ? a/b:a\*b;

printf("result:%.2f",result);

return 0;

}

**Code 6: Use the conditional operator to produce a code to have the following sample input and output**

**Sample Output for the different test-cases:-**

**Enter the number of items: 1**

**You have 1 item.**

**Enter the number of items: 2**

**You have 2 items.**

**Source Code:**

#include<stdio.h>

int main()

{

int num\_item;

printf("Enter number of item\n");

scanf("%d",&num\_item);

printf("You have %d items",num\_item);

return 0;

}

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**Code 7: Find the largest among three numbers using the conditional operator.**

**Source Code:**

#include<stdio.h>

void main()

{

int a, b, c, big;

printf("Enter three numbers : ");

scanf("%d %d %d", &a, &b, &c);

big = a>b ? (a > c ? a : c) : (b > c ? b : c) ;

printf("\The biggest number is : %d", big);

}

**Code 8: Length and breadth of a rectangle are 5 and 7 respectively. Write a program to calculate the area and perimeter of the rectangle.**

**Source Code:**

#include <stdio.h>

/\* height and width of a rectangle in inches \*/

int width;

int height;

int area;

int perimeter;

int main() {

height = 7;

width = 5;

perimeter = 2\*(height + width);

printf("Perimeter of the rectangle = %d inches\n", perimeter);

area = height \* width;

printf("Area of the rectangle = %d square inches\n", area);

return(0);

}

**Code 9: Write a program to input the value of the radius of a circle from keyboard and then calculate its perimeter and area.**

**Source code:**

#include<stdio.h>

int main()

{

int num,perimeter, area;

printf("Enter the radius of the circle: ");

scanf("%d", &num);

perimeter = 2 \* 3.1416 \* num;

area = 3.1416 \* (num\*num);

printf("In the given circle, perimeter is %d meter and area is %d square meter", perimeter,area);

return 0;

}

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**Code 10: Write a program to enter a 4-digit number from keyboard. Add 8 to the number and then divide it by 3. Now, the modulus of that number is taken with 5 and then multiply the resultant value by 5. Display the final result.**

**Source Code:**

#include<stdio.h>

int main()

{

int number1;

float number2;

printf("Enter the four digit number \n");

scanf("%d", &number1);

number2=(((number1 + 8)/3)%5)\*5;

printf("%f\n", number2);

return 0;

}

**Code 11: Now, solve the above question, P3 using assignment operators (eg. +=, -=, \*=).**

**Source Code:**

#include<stdio.h>

int main()

{

int number;

float i, i2, i3, i4;

printf("Enter the four digit number \n");

scanf("%d", &number);

i = number+=8;

i2 = number/=3;

i3 = number%=5;

i4 = number\*=5;

printf("%f\n", i4);

return 0;

}

**Code 12: Enter two numbers from keyboard. Write a program to check if the two numbers are equal.**

**Source Code:**

#include <stdio.h>

void main()

{

int num1, num2;

printf("Enter the two numbers\n");

scanf("%d %d", &num1, &num2);

if (num1 == num2)

printf("They are equal\n");

else

printf("They are not equal\n");

}

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**Code 13: Write a program to enter the values of two variables 'a' and 'b' from keyboard and then check if both the conditions 'a < 50' and 'a < b' are true.**

**Source Code:**

#include <stdio.h>

int main()

{

int num1,num2;

printf("Enter two numbers\n");

scanf("%d%d",&num1,&num2);

if (num1<50 && num1<num2)

printf("This is true");

else

printf("This is false");

return 0;

}

**Code 14: Now solve the above question P6 to check if atleast one of the conditions 'a < 50' and 'a < b' is true.**

**Source Code:**

#include <stdio.h>

int main()

{

int num1,num2;

printf("Enter two digits\n");

scanf("%d%d",&num1,&num2);

if (num1<50 || num1>num2)

printf("This is true");

else

printf("This is false");

return 0;

}

**Code 15: Write a program to convert Fahrenheit into Celsius.**

**Source Code:**

#include <stdio.h>

int main()

{

float Celsius, Fahrenheit;

printf("Enter temperature in Fahrenheit: ");

scanf("%f", &Fahrenheit);

Celsius = (Fahrenheit - 32) \* 5 / 9;

printf("%.2f Fahrenheit = %.2f Celsius", Fahrenheit, Celsius);

return 0;

}

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**Code 16: Write a program to calculate the sum of the digits of a 3-digit number which is entered from keyboard. E.g.-**

**INPUT : 132 OUTPUT : 6**

**Source Code:**

#include <stdio.h>

int main()

{

int n1,n2,n3,n4,sum,t1;

printf("Enter 3-Digit Number: ");

scanf("%d",&n1);

n3=n1/100;

t1=n1%100;

n2=t1%10;

n4=t1/10;

sum=n2+n4+n3;

printf("\nSum of All 3-Digits : %d",sum);

return 0;

}

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**Lab-5 Codes**

**If-else If ladder**

**Code 1:Admission to a professional course in subject to the**

**following conditions:**

**Marks in**

**mathematics >=60**

**Marks in**

**Physics >=50**

**Marks in**

**Chemistry >=40**

**Total in**

**all three subjects >=200**

**or**

**Total in mathematics and physics>=150.**

**Given the marks in the three subjects, write a program in C**

**to process the applications to list the eligible candidates.**

**Source Code:**

#include<stdio.h>

int main()

{

int mark1,mark2,mark3;

printf("Enter mark in mathematics:");

scanf("%d",&mark1);

printf("Enter mark in physics:");

scanf("%d",&mark2);

printf("Enter mark in chemistry:");

scanf("%d",&mark1);

if((mark1>=60)&&(mark2>=50)&&(mark3>=40)&&((mark1+mark2+mark3)>=200))

printf("Congrats! You are eligible to apply");

else if((mark1+mark2)>=150)

printf("Congrats! You are eligible to apply");

else

printf("Sad! You are not eligile");

return 0;

}

**Code 2:** **An electric power distribution company charges its domestic consumers as follows:**

**Consumption**

**Units Rate of Charge**

**0 -**

**200 BDT 0.50**

**per unit**

**201 -**

**400 BDT 100**

**plus BDT 0.65 per unit excess of 200**

**401 -**

**600 BDT 230**

**plus BDT 0.80 per unit excess of 400**

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**601 and**

**above BDT 390 plus BDT**

**1.00 per unit excess of 600**

**Write a program to read number of units consumed and print**

**out the amount to be paid by the customer.**

**Source Code:**

#include<stdio.h>

int main()

{

int units,bill;

printf("Enter the number of units:");

scanf("%d",&units);

if (units>=0 && units<=200)

{

bill=units\*0.50;

printf("bill=%d",bill);

}

else if

(units>=201 && units<=400)

{

bill=100+(units-200)\*0.65;

printf("bill=%d",bill);

}

else if

(units>=401 && units<=600)

{

bill=230+(units-400)\*0.80;

printf("bill=%d",bill);

}

else if

(units>=601)

{

bill=390+(units-600);

printf("bill=%d",bill);

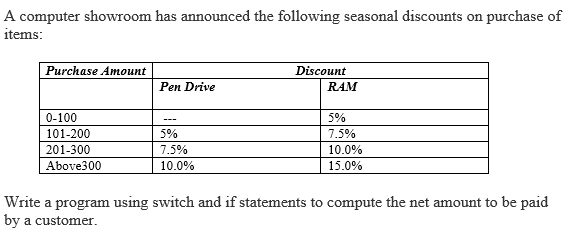
}

return 0;

}

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**Code 3:**

****

**Source Code:**

void main()

{

int ch,amount,price;

float net,discount,amountToBePaid;

printf("enter 1.if it is a pendrive purchase\n 2.if it is a ram purchase\n");

scanf("%d",&ch);

printf("\n Enter purchased amount: ");

scanf("%d",&amount);

printf("Enter the price per item: ");

scanf("%d", &price);

net = amount \* price;

switch(ch)

{

case 1:

if(amount<=100)

{

amountToBePaid = net;

printf("After applying the discount, you have to pay: %0.2f", amountToBePaid);

}

else if(amount>=101 && amount<=200)

{

discount = (net\*5)/100;

amountToBePaid = net-discount;

printf("After applying the discount, you have to pay: %0.2f", amountToBePaid);

}

else if(amount>=201 && amount<=300)

{

discount = (net\*7.5)/100;

amountToBePaid = net-discount;

printf("After applying the discount, you have to pay: %0.2f", amountToBePaid);

}

else if(amount>300)

{

discount = (net\*10)/100;

amountToBePaid = net-discount;

printf("After applying the discount, you have to pay: %0.2f", amountToBePaid);

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}

case 2:

if(amount<=100)

{

discount = (net\*5)/100;

amountToBePaid = net-discount;

printf("After applying the discount, you have to pay: %0.2f", amountToBePaid);

}

else if(amount>=101 && amount<=200)

{

discount = (net\*7.5)/100;

amountToBePaid = net-discount;

printf("After applying the discount, you have to pay: %0.2f", amountToBePaid);

}

else if(amount>=201 && amount<=300)

{

discount = (net\*10)/100;

amountToBePaid = net-discount;

printf("After applying the discount, you have to pay: %0.2f", amountToBePaid);

}

else if(amount>300)

{

discount = (net\*15)/100;

amountToBePaid = net-discount;

printf("After applying the discount, you have to pay: %0.2f", amountToBePaid);

}

}

getch();

}

**Code 4: Take values of length and breadth of a rectangle from user and check if it is square or not.**

**Source Code:**

main()

{

int L,B;

printf("\nEnter your length & breadth\n");

scanf("%d%d",&L,&B);

if(L==B)

printf("room is square shaped");

else

printf("room is rectangular shaped");

}

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**Code 5: Take two int values from user and print greatest among them.**

**Source Code:**

main()

{

int Larger,num1,num2;

printf("Enter two numbers\n");

scanf("%d%d",&num1,&num2);

if(num1>num2)

Larger=num1;

else

Larger=num2;

printf("Larger value :%d",Larger);

}

**Code 6: Write a C program to input amount from user and print minimum number of notes**

**(TK. 1000, 500, 100, 50, 20, 10, 5, 2, 1) required for the amount.**

**Sample Input:**

**Input**

**amount: 575**

**Sample Output :**

**Total number of notes:**

**1000: 0**

**500: 1**

**100: 0**

**50: 1**

**20: 1**

**10: 0**

**5: 1**

**2: 0**

**1: 0**

**Page 25**

**Source Code:**

int main()

{

int amount;

int note500, note100, note50, note20, note10, note5, note2, note1;

note500 = note100 = note50 = note20 = note10 = note5 = note2 = note1 = 0;

printf("Enter amount: ");

scanf("%d", &amount);

if(amount >= 500)

{

note500 = amount/500;

amount -= note500 \* 500;

}

if(amount >= 100)

{

note100 = amount/100;

amount -= note100 \* 100;

}

if(amount >= 50)

{

note50 = amount/50;

amount -= note50 \* 50;

}

if(amount >= 20)

{

note20 = amount/20;

amount -= note20 \* 20;

}

if(amount >= 10)

{

note10 = amount/10;

amount -= note10 \* 10;

}

if(amount >= 5)

{

note5 = amount/5;

amount -= note5 \* 5;

}

if(amount >= 2)

{

note2 = amount /2;

amount -= note2 \* 2;

}

if(amount >= 1)

{

note1 = amount;

}

printf("Total number of notes = \n");

printf("500 = %d\n", note500);

printf("100 = %d\n", note100);

printf("50 = %d\n", note50);

printf("20 = %d\n", note20);

printf("10 = %d\n", note10);

printf("5 = %d\n", note5);

printf("2 = %d\n", note2);

printf("1 = %d\n", note1);

return 0;

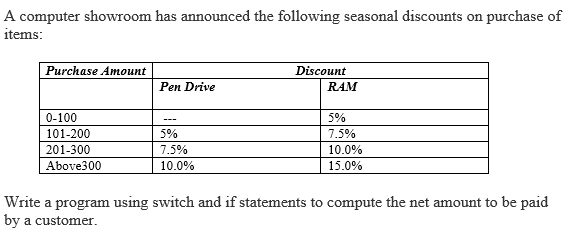
}

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**Lab-6 Codes**

**Switch Statement**

**Code 1:**

****

**Source Code:**

#include<stdio.h>

void main()

{

int amount,price,ch;

float net,discount,amountToBePaid;

printf("enter 1.if it is a pendrive purchase\n 2.if it is a ram purchase\n");

scanf("%d",&ch);

printf("\n Enter purchased amount: ");

scanf("%d",&amount);

printf("Enter the price per item: ");

scanf("%d", &price);

net = amount \* price;

switch(ch)

{

case 1:

if(amount<=100)

{

amountToBePaid = net;

printf("After applying the discount, you have to pay: %0.2f", amountToBePaid);

}

else if(amount>=101 && amount<=200)

{

discount = (net\*5)/100;

amountToBePaid = net-discount;

printf("After applying the discount, you have to pay: %0.2f", amountToBePaid);

}

else if(amount>=201 && amount<=300)

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{

discount = (net\*7.5)/100;

amountToBePaid = net-discount;

printf("After applying the discount, you have to pay: %0.2f", amountToBePaid);

}

else if(amount>300)

{

discount = (net\*10)/100;

amountToBePaid = net-discount;

printf("After applying the discount, you have to pay: %0.2f", amountToBePaid);

}

break;

case 2:

if(amount<=100)

{

discount = (net\*5)/100;

amountToBePaid = net-discount;

printf("After applying the discount, you have to pay: %0.2f", amountToBePaid);

}

else if(amount>=101 && amount<=200)

{

discount = (net\*7.5)/100;

amountToBePaid = net-discount;

printf("After applying the discount, you have to pay: %0.2f", amountToBePaid);

}

else if(amount>=201 && amount<=300)

{

discount = (net\*10)/100;

amountToBePaid = net-discount;

printf("After applying the discount, you have to pay: %0.2f", amountToBePaid);

}

else if(amount>300)

{

discount = (net\*15)/100;

amountToBePaid = net-discount;

printf("After applying the discount, you have to pay: %0.2f", amountToBePaid);

}

break;

}

getch();

}

**Code 2: Write a C program using a switch case to check whether the number entered by the user is odd or even.**

**Source Code:**

#include <stdio.h>

int main()

{

int number;

printf("Enter a positive integer number: ");

scanf("%d",&number);

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switch(number%2)

{

case 0:

printf("%d is an EVEN number.\n",number);

break;

case 1:

printf("%d is an ODD number.\n",number);

break;

}

return 0;

}

**Code 3: Write a C program to checks whether a character entered by the user is a vowel or not by using the switch case statement.**

**Source Code:**

#include <stdio.h>

int main()

{

char ch;

printf("Enter any alphabet: ");

scanf("%c", &ch);

switch(ch)

{

case 'a':

printf("Vowel");

break;

case 'e':

printf("Vowel");

break;

case 'i':

printf("Vowel");

break;

case 'o':

printf("Vowel");

break;

case 'u':

printf("Vowel");

break;

case 'A':

printf("Vowel");

break;

case 'E':

printf("Vowel");

break;

**Page 29**

case 'I':

printf("Vowel");

break;

case 'O':

printf("Vowel");

break;

case 'U':

printf("Vowel");

break;

default:

printf("Consonant");

}

return 0;

}

**Code 4:** **Write a menu-driven C program to find the area of the circle, area of the triangle and area of the rectangle according to the user's input choice.**

**The area is given by,**

**circle PI\*x\*x**

**triangle 0.5"bare"height**

**rectangle length breadth**

**Source Code:**

#include <stdio.h>

void main()

{

int fig\_code;

float base, length, breadth, height, area, radius;

printf("-------------------------\n");

printf(" 1 -->Area of Circle\n");

printf(" 2 -->Area of Rectangle\n");

printf(" 3 -->Area of Triangle\n");

printf("-------------------------\n");

printf("Enter the Figure code\n");

scanf("%d", &fig\_code);

switch(fig\_code)

{

case 1:

printf("Enter the radius\n");

scanf("%f", &radius);

area = 3.142 \* radius \* radius;

printf("Area of a circle = %f\n", area);

break;

case 2:

printf("Enter the breadth and length\n");

scanf("%f %f", &breadth, &length);

area = breadth \* length;

printf("Area of a Reactangle = %f\n", area);

break;

case 3:

printf("Enter the base and height\n");

scanf("%f %f", &base, &height);

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area = 0.5 \* base \* height;

printf("Area of a Triangle = %f\n", area);

break;

default:

printf("Error in figure code\n");

break;

}

}

**Code 5: Write a menu-driven C program to convert a given year into,**

**Months**

**Days**

**Hours**

**Minutes**

**Seconds**

**For simplicity don't include leap year, use**

**1 Year = 365 days**

**1 Month = 30 days**

**Source Code:**

#include<stdio.h

int main()

{

int years,months,days,hours,minutes,seconds;

printf("\n Enter the number of years: ");

scanf("%d",&years);

months = 12 \* years;

days = 365 \* years;

hours = 24 \* 365 \* years;

minutes = 60 \* 24 \* 365 \* years;

seconds = 60 \* 60 \* 24 \* 365 \* years;

printf("\n %d Months",months);

printf("\n %d Days",days);

printf("\n %d Hours",hours);

printf("\n %d minutes",minutes);

printf("\n %d seconds",seconds);

return 0;

}

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**Lab-7 Codes**

**Nested Loops**

**Code 1: Print 1 to 10 using loop.**

**Source Code:**

#include<stdio.h>

int main()

{

int i;

for(i=1;i<=10;i++)

printf("%d\t", i);

}

**Code 2: Print even numbers between 1 to 10 using loop.**

**Source Code:**

#include<stdio.h>

int main()

{

int i,even=0;

printf("\nEven numbers:");

for(i=1;i<=10;i++)

{

if(i%2==0)

{

printf("\n%d",i);

even++;

}}

return 0;

}

**Code 3: Print odd numbers between 1 to 10 using loop.**

**Source Code:**

#include <stdio.h>

int main()

{

int I;

printf(“All odd numbers from 1 to 10 are: \n”, i);

for(i=1; i<=10; i++)

{

if(i%2!=0)

{

printf(“%d\n”, i);

}}

return 0;

}

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**Code 4: Print the number of even numbers between 1 to 10 using loop.**

**Source Code:**

#include<stdio.h>

int main()

{

int i,even=0;

for(i=1;i<=10;i++)

{

if(i%2==0)

{

even++;

}}

printf("\nTotal even numbers between 1 to 10 :%d",even);

return 0;

}

**Code 5: Print the number of odd numbers between 1 to 10 using loop.**

**Source Code:**

#include<stdio.h>

int main()

{

int i,odd=0;

for(i=1;i<=10;i++)

{

if(i%2!=0)

{

odd++;

}

}

printf("\nTotal odd numbers between 1 to 10 :%d",odd);

return 0;

}

**Code 6: Summation of 1 to 5 using loop.**

**Source Code:**

#include <stdio.h>

int main()

{

int j, sum = 0;

for (j = 1; j <= 5; j++)

{

sum = sum + j;

}

printf("\nThe Summation of 1 to 5 is : %d\n", sum);

}

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**Code 7: Sum of all even numbers between 1 to 10.**

**Source Code:**

#include <stdio.h>

int main()

{

int i, sum=0;

for(i=2; i<=10; i+=2)

{

sum += i;

}

printf("Sum of all even number between 1 to 10 are = %d",sum);

return 0;

}

**Code 8: Sum of all odd numbers between 1 to 10.**

**Source Code:**

#include <stdio.h>

int main()

{

int i, n, sum=0;

for(i=1; i<=10; i+=2)

{

sum += i;

}

printf("Sum of odd numbers = %d", sum);

return 0;

}

**Code 9: Combine all the 8 codes above.**

**Source Code:**

#include<stdio.h>

int main()

{

int val;

char code;

printf("1. All numbers between 1 to 10 using loop\n2. Even numbers between 1 to 10\n3. Odd numbers between 1 to 10.\n4. Count of even between 1 to 10\n5. Count of odd between 1 to 10.\n6. Summation of 1 to 5\n7. Summation of even numbers between 1 to 10\n8. Summation of odd numbers between 1 to 10\n");

printf("\n Press 1,2,3,4,5,6,7 or 8");

scanf("%d",&val);

switch (val)

{

case 1:

{

int i;

for(i=1;i<=10;i++)

printf("%d\t", i);

}

break;

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case 2:

{

int i,even=0;

printf("\nEven numbers between:");

for(i=1;i<=10;i++)

{

if(i%2==0)

{

printf("\n%d",i);

even++;

}

}

return 0;

}

break;

case 3:

{

int i;

printf("All odd numbers from 1 to 10 are: \n", i);

for(i=1; i<=10; i++)

{

if(i%2!=0)

{

printf("%d\n", i);

}

}

return 0;

}

break;

case 4:

{

int i,even=0;

for(i=1;i<=10;i++)

{

if(i%2==0)

{

even++;

}

}

printf("\nTotal even numbers between 1 to 10 :%d",even);

return 0;

}

break;

case 5:

{

int i,odd=0;

for(i=1;i<=10;i++)

{

if(i%2!=0)

{

odd++;

}

}

printf("\nTotal odd numbers between 1 to 10 :%d",odd);

return 0;

}

break;

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case 6:

{

int j, sum = 0;

for (j = 1; j <= 5; j++)

{

sum = sum + j;

}

printf("\nThe Summation of 1 to 5 is : %d\n", sum);

}

break;

case 7:

{

int i, sum=0;

for(i=2; i<=10; i+=2)

{

sum += i;

}

printf("Sum of all even number between 1 to 10 are = %d",sum);

return 0;

}

break;

case 8:

{

int i, n, sum=0;

for(i=1; i<=10; i+=2)

{

sum += i;

}

printf("Sum of odd numbers = %d", sum);

return 0;

}

break;

default;

printf("Input error!!");

}}

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**Lab-8 Codes**

**Array**

**Code 1: Display the array element.**

**Source Code:**

main()

{

int i,a[12];

printf("Enter array elements\n");

for(i=0;i<=11;i++)

scanf("%d",& a[i]);

for(i=0;i<=11;i++)

printf("marks [%d]: %d\n",i,a[i]);

}

**Code 2: Show the square of each array element.**

**Source Code:**

main()

{

int i,a[12];

printf("Enter array elements\n");

for(i=0;i<=11;i++)

scanf("%d",& a[i]);

for(i=0;i<=11;i++)

{

a[i]=a[i]\*a[i];

printf("marks [%d]: %d\n",i,a[i]);

}

}

**Code 3: Display the even number of an array.**

**Source Code:**

main()

{

int i,a[12];

printf("Enter array elements\n");

for(i=0;i<=11;i++)

scanf("%d",& a[i]);

for(i=0;i<=11;i++)

{

if(a[i]%2==0)

printf("Even number is ");

else

printf("No Even Number");

printf("marks [%d]: %d\n",i,a[i]);

}

}

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**Code 4: Display the odd number of an array.**

**Source Code:**

main()

{

int i,a[12];

printf("Enter array elements\n");

for(i=0;i<=11;i++)

scanf("%d",& a[i]);

for(i=0;i<=11;i++)

{

if(a[i]%2!=0)

printf("Odd number is ");

else

printf("No Odd Number is ");

printf("marks [%d]: %d\n",i,a[i]);

}}

**Code 5: Count the odd number of the array.**

**Source Code:**

main()

{

int i,a[3],even=0;

printf("Enter array elements\n");

for(i=0;i<=2;i++)

scanf("%d",& a[i]);

for(i=0;i<=2;i++)

{

if(a[i]%2==0)

{

even++;

}

}

printf("Total even array elements is %d",even);

}

**Code 6: Count the odd number of the array.**

**Source Code:**

main()

{

int i,a[13],odd=0;

printf("Enter array elements\n");

for(i=0;i<=12;i++)

scanf("%d",& a[i]);

for(i=0;i<=12;i++)

{

if(a[i]%2==0)

{

odd++;

}

}

printf("Total even array elements is %d",odd);

}

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**Code 7: Show the summation of the array element.**

**Source Code:**

main()

{

int i,a[12];

printf("Enter array elements\n");

for(i=0;i<=11;i++)

scanf("%d",& a[i]);

for(i=0;i<=11;i++)

{

a[i]=a[i]+a[i];

printf("marks [%d]: %d\n",i,a[i]);

}

}

**Code 8: Combine all the 7 codes above.**

**Source Code:**

main()

{

int val;

printf("1. Display the Array elements.\n2. Show the Square of each Array elements.\n3. Display the Even number of Array elements.\n4. Display the Odd number of Array elements. \n5. Count the Even Number of Array element.\n6. Count the Odd Number of Array element.\n7. Show the Summation of the Array elements\n");

printf("\n Press 1,2,3,4,5,6,or 7\n");

scanf("%d",&val);

switch (val)

{

case 1:

{

int i,a[12];

printf("Enter array elements\n");

for(i=0;i<=11;i++)

scanf("%d",& a[i]);

for(i=0;i<=11;i++)

printf("marks [%d]: %d\n",i,a[i]);

}

break;

case 2:

{

int i,a[12];

printf("Enter array elements\n");

for(i=0;i<=11;i++)

scanf("%d",& a[i]);

for(i=0;i<=11;i++)

{

a[i]=a[i]\*a[i];

printf("marks [%d]: %d\n",i,a[i]);

}}

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break;

case 3:

{

int i,a[12];

printf("Enter array elements\n");

for(i=0;i<=11;i++)

scanf("%d",& a[i]);

for(i=0;i<=11;i++)

{

if(a[i]%2==0)

printf("Even number is ");

else

printf("No Even Number");

printf("marks [%d]: %d\n",i,a[i]);

}

}

break;

case 4:

{

int i,a[12];

printf("Enter array elements\n");

for(i=0;i<=11;i++)

scanf("%d",& a[i]);

for(i=0;i<=11;i++)

{

if(a[i]%2!=0)

printf("Odd number is ");

else

printf("No Odd Number is ");

printf("marks [%d]: %d\n",i,a[i]);

}

}

break;

case 5:

{

int i,a[3],even=0;

printf("Enter array elements\n");

for(i=0;i<=2;i++)

scanf("%d",& a[i]);

for(i=0;i<=2;i++)

{

if(a[i]%2==0)

{

even++;

}

}

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printf("Total even array elements is %d",even);

}

break;

case 6:

{

int i,a[13],odd=0;

printf("Enter array elements\n");

for(i=0;i<=12;i++)

scanf("%d",& a[i]);

for(i=0;i<=12;i++)

{

if(a[i]%2==0)

{

odd++;

}

}

printf("Total even array elements is %d",odd);

}

break;

case 7:

{

int i,a[12];

printf("Enter array elements\n");

for(i=0;i<=11;i++)

scanf("%d",& a[i]);

for(i=0;i<=11;i++)

{

a[i]=a[i]+a[i];

printf("marks [%d]: %d\n",i,a[i]);

}

}

break;

}

}

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