

CMR Engineering College

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2022-26_I_CS_B_C Programming Lab

C PROGRAMMING_AUTOMATA FIX_CONDITIONAL STATEMENTS

Attempt : 1
Total Mark : 100
Marks Obtained : 98

Section 1 : Automata Fix

1. Write a program to calculate and print the Electricity bill of a given customer. The customer id., name, and unit consumed by the user should be taken from the keyboard and display the total amount to pay to the customer. The charge is as follow :

If the bill exceeds Rs. 400 then a surcharge of 15% will be charged and the minimum bill should be Rs. 100/-

Answer

```
#include <stdio.h>
#include <string.h>
int main()
{
    int custid, conu;
    float chg, surchg=0, gramt,netamt;
    char connm[25];
    scanf("%d",&custid);
    scanf("%s",connm);
    scanf("%d",&conu);

    float surchgper=0;
```

```

if(conu<200){
    chg=1.2;
}
else if(conu<400){
    chg=1.5;
}
else if(conu<600){
    chg=1.8;
}
else{
    chg=2;
}
gramt=conu*chg;
if(gramt>400) surchgper=0.15;
surchg=gramt*surchgper;
netamt=gramt+surchg;

printf("Electricity Bill\n");
printf("Customer IDNO: %d\n",custid);
printf("Customer Name: %s\n",connm);
printf("unit Consumed: %d\n",conu);
printf("Amount Charges @Rs. %.2f per unit: %.2f\n",chg,gramt);
printf("Surcharge Amount: %.2f\n",surchg);
printf("Net Amount Paid By the Customer: %.2f\n",netamt);

}

```

Status : Correct

Marks : 10/10

2. Write a Menu-Driven program to compute the area of various geometrical shapes.

Answer

```

#include <stdio.h>
int main ()
{
    int choice,r,l,w,b,h;
    float area;
    scanf("%d",&choice);
    switch(choice)
    {

```

```

case 1:
    scanf("%d",&r);
    area=3.14*r*r;
    break;
case 2:
    scanf("%d%d",&l,&w);
    area=l*w;
    break;
case 3:
    scanf("%d%d",&b,&h);
    area=b*h;
    break;
default:
    printf("error");
    break;
}
printf("%.2f",area);
}

```

Status : Partially correct

Marks : 8/10

3. Write a program to find whether a character is an alphabet, digit or special character.

Answer

```

// You are using GCC
#include <stdio.h>
int main()
{
    char sing_ch;
    scanf("%c", &sing_ch);
    if(sing_ch>=65&&sing_ch<=90 || sing_ch>=97&&sing_ch<=122)
    {
        printf("This is an alphabet.");
    }
    else if(sing_ch>=48 && sing_ch<=57)
    {
        printf("This is a digit.");
    }
    else

```

```
{  
    printf("This is a special character.");  
}  
}
```

Status : Correct

Marks : 10/10

4. Write a program to accept a person's height in centimeters and categorize the person according to their height.

If the height is less than 150cm, then the person is a Dwarf.

If the height of the person is greater than or equal to 150cm and less than 165cm, then the person is of average height.

If the height of the person is greater than or equal to 165cm and less than or equal to 195cm, then the person is taller.

Else, abnormal height.

Answer

```
#include <stdio.h>  
int main()  
{  
    float PerHeight;  
    scanf("%f", &PerHeight);  
  
    if(PerHeight<150)    printf("The person is Dwarf.");  
    else if(PerHeight<165) printf("The person is average height.");  
    else if(PerHeight<=195) printf("The person is taller.");  
    else                printf("Abnormal height.");  
}
```

Status : Correct

Marks : 10/10

5. Write a program to find whether the given year is a leap year or not.

Answer

```
// You are using GCC  
#include <stdio.h>
```

```

int main()
{
    int chk_year;
    scanf("%d", &chk_year);
    if ((chk_year % 400) == 0)
        printf("%d is a leap year.", chk_year);
    else if ((chk_year % 100) == 0)
        printf("%d is a not leap year.", chk_year);
    else if ((chk_year % 4) == 0)
        printf("%d is a leap year.", chk_year);
    else
        printf("%d is not a leap year.", chk_year);
}

```

Status : Correct

Marks : 10/10

6. Write a program to accept a coordinate point in an XY coordinate system and determine in which quadrant the coordinate point lies.

Answer

```

// You are using GCC
#include <stdio.h>
int main()
{
    int co1,co2;

    scanf("%d %d",&co1,&co2);

    if( co1 > 0 && co2 > 0)
        printf("The coordinate point (%d,%d) lies in the First quadrant.\n",co1,co2);
    else if( co1 < 0 && co2 > 0)
        printf("The coordinate point (%d,%d) lies in the Second quadrant.\n",co1,co2);
    else if( co1 < 0 && co2 < 0)
        printf("The coordinate point (%d, %d) lies in the Third quadrant.\n",co1,co2);
    else if( co1 > 0 && co2 < 0)
        printf("The coordinate point (%d,%d) lies in the Fourth quadrant.\n",co1,co2);
    else if( co1 == 0 && co2 == 0)
        printf("The coordinate point (%d,%d) lies at the origin.\n",co1,co2);

}

```

Status : Correct

Marks : 10/10

7. Write a program to check whether a triangle can be formed by the given values for the angles.

Answer

```
// You are using GCC
#include <stdio.h>
int main()
{
    int anga, angb, angc, sum;
    scanf("%d %d %d", &anga, &angb, &angc);
    sum = anga + angb + angc;
    if(sum == 180)
    {
        printf("The triangle is valid.");
    }
    else
    {
        printf("The triangle is not valid.");
    }
}
```

Status : Correct

Marks : 10/10

8. Write a program to calculate the profit and loss of a transaction.

Answer

```
// You are using GCC
#include <stdio.h>
int main()
{
    int cprice, sprice, plamt;
    scanf("%d", &cprice);
    scanf("%d", &sprice);

    if(sprice > cprice)
    {
        plamt = sprice - cprice;
    }
}
```

```

        printf("profit amount: %d", plamt);
    }
    else if(cprice>sprice)
    {
        plamt = cprice-sprice;
        printf("loss amount : %d", plamt);
    }
    else
    {
        printf("You are running in no profit no loss condition");
    }
}

```

Status : Correct

Marks : 10/10

9. Write a program to find the eligibility of admission for a professional course based on the following criteria:

Marks in Maths >=65

Marks in Phy >=55

Marks in Chem>=50

Total in all three subjects >=190

or

Total in Math and Physics >=140

Answer

```

#include <stdio.h>
int main()
{
    int p,c,m,t,mp;
    scanf("%d",&p);
    scanf("%d",&c);
    scanf("%d",&m);

    int pcm=p+c+m;
    int pm=p+m;
    bool eligible=0;
    if(p>=55 && c>=50 && m>=65 && pcm>=190 || pm>=140) eligible=1;
}

```

```
printf("Total marks of Maths, Physics, and Chemistry : %d\n",pcm);
printf("Total marks of Maths and Physics : %d\n",pm);

if(eligible) printf("The candidate is eligible for admission.");
else        printf("The candidate is not eligible.");
}
```

Status : Correct

Marks : 10/10

10. Write a program to read a month's number and print the number of days in that month.

Answer

```
#include <stdio.h>
int main()
{
    int monno;
    char monnm[15];
    scanf("%d",&monno);
    switch(monno)
    {
        case 1:
        case 3:
        case 5:
        case 7:
        case 8:
        case 10:
        case 12:
            printf("Month have 31 days.");
            break;
        case 4:
        case 6:
        case 9:
        case 11:
            printf("Month have 30 days.");
            break;
        default:
            printf("The 2nd month is a February and have 28 days.\n");
            printf("In leap year The February month Have 29 days.");
    }
}
```



```
}  
}
```

Status : Correct

Marks : 10/10