**21/03/2024**

**Program 1:**

**Write a C program that takes the age and the number of books borrowed by a library member as input. Use the following criteria to determine the membership status:**

**If the member is under 18 years old and has borrowed more than 2 books, display "Junior Member".**

**If the member is between 18 and 60 years old (inclusive) and has borrowed less than or equal to 3 books, display "Regular Member".**

**If the member is 60 years old or older and has borrowed less than or equal to 5 books, display "Senior Member".**

**Otherwise, display "Membership Status: Unknown".**

**Your program should:**

**Prompt the user to enter the age and the number of books borrowed.**

**Use simple if and nested if statements to determine the membership status based on the given criteria.**

**Display the determined membership status.**

**Output :**

#include <stdio.h>

int main() {

int age,books\_count;

printf("enter the age :");

scanf("%d",&age);

printf("enter the books\_count :");

scanf("%d,&books\_count);

if(age>0 && age < 18 && books\_count>2)

{

printf("Membership Status: Junior Member");

}

else if((age>=18 && age<=60) && books\_count<=3)

{

printf("Membership Status: Regular Member");

}

else if( age>= 60 && books\_count<=5)

{

printf("Membership Status: Senior Member");

}

else

{

printf("Membership Status: Unknown");

}

}

#include <stdio.h>

int main() {

int x = 5, y = 3, z = 7;

printf("%d\n", x \* y % z);

int a = 10, b = 3;

printf("%d\n", a / b \* 2);

int c = 15, d = 4;

printf("%d\n", c % d + c / d);

return 0;

}

**Output :**

1 6 6

**Explanation :**

(5\*3)%7=15%7=1

(10/3)\*2=6

(15%4)+(15/4)=3+3=6

**Program 3:**

#include <stdio.h>

int main() {

int x = 10, y = 20;

if (x = y)

printf("x is equal to y\n");

else

printf("x is not equal to y\n");

int a = 5, b = 10;

printf("%d\n", (a > b) ? a : (b = a + 1));

int num = 7;

printf("%s\n", (num % 2 == 0) ? "Even" : (num > 5) ? "Greater than 5" : "Less than 5");

return 0;

}

**Output:**

x is equal to y

6

Greater than 5

**Program 4:**

#include <stdio.h>

int main() {

int x = 10, y = 20, z = 30;

printf("%d\n", (x > y) ? (x < z) ? x : z : (y < z) ? y : z);

int a = 10, b = 5;

printf("%d\n", (++a, b++));

int c = 5, d = 7;

printf("%d\n", c += d \*= 2);

return 0;

}

**Output:**

20

11,5

19

**Explanation:**

c=c+d=d\*2-> d\*2=7\*2=14

c=5+14=19

**Program 5 :**

#include <stdio.h>

int main() {

int x = 10, y = 5;

printf("%d\n", x & y);

int a = 7, b = 3;

printf("%d\n", a | b);

int c = 12, d = 3;

printf("%d\n", c ^ d);

return 0;

}

**Output:**

0

7

15

**Explanation:**

binary value of 10 =1010

binary value of 5 =0101

10&5=0000->0

binary value of 7 =0111

binary value of 3 =0011

7|3=0111->7

binary value of 12 =1100

binary value of 3 =0011

12|3=1111->15

**Program 6 :**

#include <stdio.h>

int main() {

int x = 5;

printf("%d\n", x << 2);

int a = 16;

printf("%d\n", a >> 2);

return 0;

}

**Output:**

20

4

**Explanation:**

binary number of 5 = 00000101

x<<2->00010100->20

binary number of 16=00010000

a>>2->00000100->4

**Program 7:**

#include <stdio.h>

int main() {

int x = 10;

x &= 3;

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

int a = 5;

a <<= 2;

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

return 0;

}

**Output:**

2

20

**Explanation :**

binary number of 10(x)=1010

binary number of 3=0011

x=x&3=1010&0011 ->0010 = 2

binary number of 5 = 00000101

a=a<<2->00010100 ->20

**Program 8:**

#include <stdio.h>

int main() {

char fullName[100];

printf("Enter your fullname :");

scanf("%s",fullName);

printf("Welcome %s!!!",fullName);

}

**Output :**

enter the fullname : meena ganesan

welcome meena!!!

**Assignments :**

**1) Scenario:**

**You are developing a program for a fast-food restaurant to handle customer orders. The program needs to display a menu of food items available for ordering and allow the customer to select an item using a number. After selecting an item, the program should display the price of the selected item and calculate the total bill amount based on the quantity ordered.**

**Exercise Question:**

**Write a C program for the fast-food restaurant to handle customer orders. The program should display a menu of food items along with their prices. The menu should include items such as burgers, fries, drinks, etc. The program should prompt the customer to select an item by entering its corresponding number from the menu. Once the item is selected, the program should prompt the customer to enter the quantity of the selected item. Finally, the program should calculate and display the total bill amount.**

**Your program should:**

**Display a menu of food items along with their prices.**

**Prompt the customer to select an item by entering its corresponding number from the menu.**

**Use a switch statement to determine the price of the selected item based on the user's choice.**

**Prompt the customer to enter the quantity of the selected item.**

**Calculate and display the total bill amount.**

**Output:**

#include <stdio.h>

int main() {

int item\_number,price,total\_amount,quantity ;

printf("FAST\_FOOD RESTAURANT - MENU\n");

printf("Item\_number 1: BURGER - RS.150 \n");

printf("Item\_number 2 : FRIES - RS.100 \n");

printf("Item\_number 3 : DRINKS - RS.50\n");

printf("Enter the item\_number (1-3) : \n");

scanf("%d",&item\_number);

switch(item\_number)

{

case 1:

price = 150;

break;

case 2:

price = 100;

break;

case 3:

price = 50;

break;

default:

printf("The Item\_number out of menu");

return -1;

}

printf("enter the quantity of the items : \n");

scanf("%d",&quantity);

total\_amount = price \* quantity;

printf("Total amount is : %d ",total\_amount);

return 0;

}

**2) Character Transformation:**

**Write a program that takes a string as input and transforms it into a new string where each character is replaced by the next character in the alphabet (e.g., 'a' becomes 'b', 'b' becomes 'c', ..., 'z' becomes 'a').**

**Output:**

int main() {

char string1[20];

scanf("%[^\n]", string1);

for (int i = 0; string1[i] != '\0'; i++) {

if (string1[i] >= 'a' && string1[i] < 'z') {

string1[i]++;

} else if (string1[i] == 'z') {

string1[i] = 'a';

} else if (string1[i] >= 'A' && string1[i] < 'Z') {

string1[i]++;

} else if (string1[i] == 'Z') {

string1[i] = 'A';

}

}

printf("%s", string1);

}

**3)Guessing Game:**

**Write a program that generates a random number between 1 and 100. Prompt the user to guess the number. Keep prompting the user until they guess the correct number. Provide hints such as "Too high" or "Too low". Use a do-while loop for the guessing game.**

**Output:**

#include <stdio.h>

#include <stdlib.h>

int main() {

int random\_number = rand() % 100 + 1;

printf("%d\n",random\_number);

int guessing\_number;

do{

printf("Guess the Number :\n");

scanf("%d",&guessing\_number);

if(random\_number==guessing\_number)

{

printf("Congratulations! You guessed the correct number: %d",guessing\_number);

break;

}

else if(random\_number < guessing\_number)

{

printf("Too High : \n");

}

else

{

printf("Too Low : \n");

}

}

while(1);

}