PRACTISE QUESTIONS BASED ON CONTROL STATEMENT

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PRACTISE QUESTION...

PRACTISE QUESTIONS BASED ON CONTROL STATEMENTS

Find the output of following code snippets

```
#include <stdio.h>
    int main()
    {
        int i = 1024;
        for (; i; i >>= 1)
            printf("HelloWorld");
        return 0;
    }
```

" HelloWorld" will be printed 10 times in concatenation

How many times will HelloWorld be printed in the above program?

```
#include <stdio.h>
int main()
{
    int i = 0;
    switch (i)
    {
        case '0': printf("Hello");
                break;
        case '1': printf("World");
                break;
        default: printf("HelloWorld");
    }
    return 0;
}
```

Char — Control flow will go to default case as its of int datatype

```
#include <stdio.h>
int main()
{
    int i = 3;
    switch (i)
    {
        case 0+1: printf("Hello");
                break;
        case 1+2: printf("World");
                break;
        default: printf("HelloWorld");
    }
    return 0;
}
```

Control Flow → " World" will be printed

```
#include <stdio.h>
#define EVEN 0
#define ODD 1
int main()
{
    int i = 3;
    switch (i & 1)
    {
        case EVEN: printf("Even");
                break;
        case ODD: printf("Odd");
                break;
        default: printf("Default");
    }
    return 0;
}
```

0011
& 0001
0001

control flow will go to ODD case

" Odd" will be printed

```
#include <stdio.h>
int main()
{
    int i;
    if (printf("0"))
        i = 3;
    else
        i = 5;
    printf("%d", i);
    return 0;
}
```

printf("0") returns 1 so i=3 so output = 3

```
#include <stdio.h>
int i;
int main()
{
    if (i);
    else
        printf("Else");
    return 0;
}
```

By default i=0 so, output = "Else"

```
#include<stdio.h>
int main()
{
   int n;
   for (n = 9; n!=0; n--)
     printf("n = %d", n--);
   return 0;
}
```

output: 9 7 5 3 1 -1 -3 ⋮ infinity

```
#include <stdio.h>
int main()
{
    int c = 5, no = 10;
    do {
        no /= c;
    } while(c--);

    printf ("%d\n", no);
    return 0;
}
```

Nothing will be printed

```
# include <stdio.h>
int main()
{
   int i = 0;
   for (i=0; i<20; i++)
   {
     switch(i)
     {
       case 0:
         i += 5;
       case 1:
         i += 2;
       case 5:
         i += 5;
       default:
         i += 4;
         break;
     }
     printf("%d  ", i);
   }
   return 0;
}
```

Output: 16 21

no break statement

```
#include<stdio.h>
int main()
{
    int i = 0;
    for (printf("1st\n"); i < 2 && printf("2nd\n"); ++i &&
printf("3rd\n"))
    {
        printf("*\n");
    }
    return 0;
}
```

```
#include <stdio.h>
int main()
{
  int i;
  for (i = 1; i != 10; i += 2)
    printf(" HelloWorld ");
  return 0;
}
```

Infinite loop

Condition in for loop will be true always

HelloWorld HelloWorld......

```
char inchar = 'A';
switch (inchar)
{
case 'A' :
    printf ("choice A n") ;
case 'B' :
    printf ("choice B ") ;
case 'C' :
case 'D' :
case 'E' :
default:
    printf ("No Choice") ;
}
```

No break statement in Switch-case statements

output: choice A nchoice B nNo Choice

```
#include <stdio.h>
int main()
{
    int i = 3;
    switch(i)
    {
        printf("Outside ");
        case 1: printf("Hello");
            break;
        case 2: printf("World");
            break;
        default: printf("HelloWorld");
    }
    return 0;
}
```

There will be no output due to printf statement inside switch-case statement

```
#include <stdio.h>
int main()
{
    char check = 'a';
    switch (check)
    {
        case 'a' || 1: printf("Hello ");
        case 'b' || 2: printf("World ");
                break;
        default: printf("HelloWorld");
    }
    return 0;
}
```

Syntax Error

There should be no OR condition in case statement

```
#include <stdio.h>
int main()
{
    int check = 20, arr[] = {10, 20, 30};
    switch (check)
    {
        case arr[0]: printf("Hello ");
        case arr[1]: printf("World ");
        case arr[2]: printf("HelloWorld");
    }
    return 0;
}
```

Error

we cant pass array in case statement

```
#include<stdio.h>
int main()
{
    int i = -5;
    while (i <= 5)
    {
        if (i >= 0)
            break;
        else
        {
            i++;
            continue;
        }
        printf("HelloWorld");
    }
    return 0;
}
```

It won't print anything due to break and continue keywords

```
#include <stdio.h>
int main()
{
    int i = 3;
    while (i--)
    {
        int i = 100;
        i--;
        printf("%d ", i);
    }
    return 0;
}
```

These 2 i's are different

output: 99 99 99

```
#include <stdio.h>
int main()
{
    int x = 3;
    if (x == 2); x = 0;
    if (x == 3) x++;
    else x += 2;

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

    return 0;
}
```

If condition, terminates here

output: x=2

```
#include<stdio.h>
int main()
{
    int a = 5;
    switch(a)
    {
    default:
        a = 4;
    case 6:
        a--;
    case 5:
        a = a+1;
    case 1:
        a = a-1;
    }
    printf("%d n", a);
    return 0;
}
```

output: 5 n

No break statement

```
#include "stdio.h"

int main()
{
  int i = 1, j;
  for ( ; ; )
  {
    if (i)
        j = --i;
    if (j < 10)
       printf("HelloWorld", j++);
    else
       break;
  }
  return 0;
}
```

output: " HelloWorld" will be printed 10 times in concatenation

```
#include "stdio.h"
int main()
{
 int j = 0;
 for ( ; j < 10 ; )
 {
   if (j < 10)
     printf("Hello", j++);
   else
     continue;
   printf("World");
 }
 return 0;
}
```

Output: " HelloWorld" will be printed 10 times in concatenation

```
#include <stdio.h>

int main()
{
    unsigned int i = 65000;
    while (i++ != 0);
    printf("%d", i);
    return 0;
}
```

There wont be any output

```
#include <stdio.h>
int main()
{
int i;
for ( i=0; i<5; i++ )
{
  int i = 10;
  printf ( "%d ", i );
  i++;
}
return 0;
}
```

output: 10 10 10 10 10

These 2 i's are different

Programming Assignment

1. Write a program to read 10 integers. Display these numbers by printing three numbers in a line separated by commas.
2. Write a program to print the count of even numbers between 1–200. Also print their sum.
3. Write a program to count the number of vowels in a text. (eg: Enter text: hello world, Output: No.of vowels- 3).
4. Write a program to read two floating point numbers. Add these numbers and assign the result to an integer. Finally, display the value of all the three variables.
5. Write a program to read a floating point number. Display the rightmost digit of the integral part of the number.
6. Write a program to calculate simple interest and compound interest.
7. Write a program to calculate salary of an employee given his basic pay (to be entered by the user), HRA = 10% of the basic pay, TA = 5% of basic pay. Define HRA and TA as constants and use them to calculate the salary of the employee.
8. Write a program to prepare a grocery bill. Enter the name of the items purchased, quantity in which it is purchased, and its price per unit. Then display the bill in the following format:

************ ********************************B I L L **

Item	Quantity	Price	Amount

Total Amount to be paid =

9. Write a program to read an integer. Display the value of that integer in decimal, octal, and hexadecimal notation.
10. Write a program that prints a floating point value in exponential format with the following specifications:
    a. correct to two decimal places;
    b. correct to four decimal places; and
    c. correct to eight decimal places.
    [Expected Output: value entered: 123456.453125 Value in exponent form: 1.234565e+05]
11. Write a program to read a character and print it. Also print its ASCII value. If the character is in lower case, print it in upper case and vice versa. Repeat the process until a '*' is entered.
12. Write a program to add three floating point numbers. The result should contain only two digits after the decimal.
13. Write a program to take input from the user and then check whether it is a number or a character. If it is a character, determine whether it is in upper case or lower case. Also print its ASCII value.
14. Write a program to display sum and average of numbers from 1 to n. Use for loop.
15. Write a program to print all odd numbers from m to n.
16. Write a program to print all prime numbers from m to n.
17. Write a program to read numbers until –1 is entered and display whether it is an Armstrong number or not.
18. The wind chill index (WCI) is calculated from the wind speed v in miles per hour and the temperature t in Fahrenheit. Three formulas are used, depending on the wind speed:
    if (0 <= v <= 4) then WCI = t
    if (v >=45) then WCI = 1.6t - 55
    otherwise, WCI = 91.4 + (91.4 - t)(0.0203v - 0.304(v)1/2 - 0.474).
    Write a program that can calculate the wind chill index.
19. Write a program that asks the user to enter an integer and determines whether it is divisible by 5 and 6, whether it is divisible by 5 or 6, and whether it is divisible by 5 or 6 but not both. For example, if your input is 10, the output should be:

Is 10 divisible by 5 and 6? false
Is 10 divisible by 5 or 6? true
Is 10 divisible by 5 or 6, but not both? True

20. McDonald's wants you to write a program to take orders from the Internet. Your program asks for the item, its price, and if overnight shipping is wanted. Regular shipping for items under Rs.100 is Rs20.00; for items Rs100 or more shipping is Rs30.00. For overnight delivery add Rs50.00. For example, the output might be: Enter the item: Burger Enter the price: 450 Overnight delivery (0==no, 1==yes): 1 Invoice: Burger Rs.450 shipping Rs.80 total Rs. 530.