C programming, DCA, 1st semester, 2017

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DCA assignments - Nagarjuna Science college, Raipur(CG)

1 - Write a program to print "Hello DCA"

```
/*
  Date of creation: 11 November 2017,
  Title: Write a program to print "Hello DCA",
  Coded by: Rishikesh Agrawani
*/

// Include header file
#include<stdio.h>

// Definition of main() function
void main()
{
  printf("Hello DCA");
}

/* Output:-
Hello DCA
*/
```

2 - Write a program for using integers, characters, floats & doubles

```
/*
  Date of creation: 11 November 2017,
  Title: Write a program for using integers, charaters & float & double,
  Coded by: Rishikesh Agrawani
*/

// Include header file
#include<stdio.h>

// Definition of main() function
void main()
{
  // Define integers
  int a = 10, b = 5;
  // Define characters
  char c = 'M', ch = 'H';
  //Define floats
  float f = 67.199692;
```

```
  //Define doubles
  double d = 120000.1231231234;

  printf("%d, %d", a, b);   // Printing integers
  printf("\n");   // Printing new line
  printf("Sum of %d and %d is %d", a, b, a+b);  // Printing integers and their sum
  printf("\n");   // Printing new line
  printf("%c, %c", c, ch);  // Printing characters with new line at end
  printf("\n");   //Printing newline
  printf("%f\n", f);  //Printing float followed by newline
  printf("%lf", d);   // Printing double
}

/* Output:-
10, 5
Sum of 10 and 5 is 15
M, H
67.199692
120000.123123
*/
```

3 - Write a program for storing integer values

```
/*
  Date of creation: 11 November 2017,
  Title: Write a program for storing integer values,
  Coded by: Rishikesh Agrawani
*/

#include<stdio.h>

void main()
{
  // Storing 10 into variable a, 5 into variable b, 12 into variable c
  int a = 10, b = 5;
  int c = 12;

  // Printing values stored into integer varaibles a, b, c
  printf("a = %d \n", a);
  printf("b = %d \n", b);
  printf("c = %d \n", c);
}

/* Output:-
a = 10
b = 5
c = 12
*/
```

4 - Write a program for storing character values

```
/*
  Date of creation: 11 November 2017,
```

```
  Title: Write a program for storing character values,
  Coded by: Rishikesh Agrawani
*/

#include<stdio.h>

void main()
{
  // Storing 'R' into variable c, 'H' into variable ch, 'M' into variable ch2
  char c = 'R';
  char ch = 'H';
  int ch2 = 'M';

  // Printing values stored into character varaibles c, ch, ch2
  printf("c = %c \n", c);
  printf("ch = %c \n", ch);
  printf("ch2 = %c", ch2);
}

/* Output:-
c = R
ch = H
ch2 = M
*/
```

5 - Write a program for storing float values

```
/*
  Date of creation: 11 November 2017,
  Title: Write a program for storing float values,
  Coded by: Rishikesh Agrawani
*/

#include<stdio.h>

void main()
{
  // Storing 12.67 into variable f, 34.89 into variable f2, 23.56 into variable f3
  float f = 12.67;
  float f2 = 34.89;
  float f3 = 23.56;

  // Printing values stored into flaot varaibles f, f2, f3
  printf("f = %f \n", f);
  printf("f2 = %f \n", f2);
  printf("f3 = %f", f3);
}

/* Output:-
f = 12.670000
f2 = 34.889999
f3 = 23.559999
*/
```

6 - Write a program for adding 2 integer numbers

```
/*
  Date of creation: 11 November 2017,
  Title: Write a program for adding two integer numbers,
  Coded by: Rishikesh Agrawani
*/

#include<stdio.h>

void main()
{
    int a = 10;
    int b = 5;
    int c;
    c = a + b;

    printf("%d + %d = %d", a, b, c);
}

/* Output:-
10 + 5 = 15
*/
```

7 - Write a program for subtracting one integer number from other

```
/*
  Date of creation: 11 November 2017,
  Title: Write a program for subtracting one integer number from other,
  Coded by: Rishikesh Agrawani
*/

#include<stdio.h>

void main()
{
    int a = 10;
    int b = 5;
    int c;
    c = a - b;

    printf("%d - %d = %d", a, b, c);
}

/* Output:-
10 - 5 = 5
*/
```

8 - Write a program for multiplying 2 integer numbers

```
/*
  Date of creation: 11 November 2017,
```

```
  Title: Write a program for multiplying 2 integer numbers,
  Coded by: Rishikesh Agrawani
*/

#include<stdio.h>

void main()
{
    int a = 10;
    int b = 5;
    int c;
    c = a * b;

    printf("%d * %d = %d", a, b, c);
}

/* Output:-
10 * 5 = 50
*/
```

9 - Write a program for dividing integers

```
/*
  Date of creation: 11 November 2017,
  Title: Write a program for dividing integers,
  Coded by: Rishikesh Agrawani
*/

#include<stdio.h>

void main()
{
    int a = 10;
    int b = 5;
    int c;
    c = a / b;

    printf("%d / %d = %d", a, b, c);
}

/* Output:-
10 / 5 = 2
*/
```

10 - Write a program for modulus of 2 integers

```
/*
  Date of creation: 11 November 2017,
  Title: Write a program for modulus of 2 integers,
  Coded by: Rishikesh Agrawani
*/

#include<stdio.h>
```

```c
void main()
{
    int a = 10;
    int b = 5, c = 3, d = 4;
    int r1, r2, r3;

    r1 = a % b;
    r2 = a % c;
    r3 = a % d;

    printf("%d, %d, %d\n", r1, r2, r3);   /* \n is for printing newline */
    printf("%d: %d: %d\n", r1, r2, r3);
    printf("%d\n%d\n%d", r1, r2, r3);
}

/* Output:-
0, 1, 2
0: 1: 2
0
1
2
*/
```

11 - Write a menu driven program for addition, subtraction, multiplication, division and modulus of 2 integer numbers

```c
/*
  Date of creation: 11 November 2017,
  Title: Write a menu driven program for addition, subtraction, multiplication, divi
  Coded by: Rishikesh Agrawani
*/

#include<stdio.h>

void main()
{
    int a = 10;
    int b = 5;
    int c, choice;

    printf("Arithmetic operations\n");
    printf("1. Addition\n");
    printf("2. Subratcion\n");
    printf("3. Multiplication\n");
    printf("4. Division\n");
    printf("5. Modulus\n");
    printf("Please choose one option:\t");
    scanf("%d", &choice);

    if(choice == 1) {
        c = a + b;
        printf("%d + %d = %d", a, b, c);
    }
```

```
    if(choice == 2) {
        c = a - b;
        printf("%d * %d = %d", a, b, c);
    }

    if(choice == 3) {
        c = a * b;
        printf("%d * %d = %d", a, b, c);
    }

    if(choice == 4) {
        c = a / b;
        printf("%d / %d = %d", a, b, c);
    }

    if(choice == 5) {
        c = a % b;
        printf("%d %% %d = %d", a, b, c);  /*  %% is used to print %  */
    }
}

/* Output */
/* 1st RUN
Arithmetic operations
1. Addition
2. Subratcion
3. Multiplication
4. Division
5. Modulus
Please choose one option:    1
10 + 5 = 15
*/

/* 2nd RUN
Arithmetic operations
1. Addition
2. Subratcion
3. Multiplication
4. Division
5. Modulus
Please choose one option:    2
10 * 5 = 5
*/

/* 3rd RUN
Arithmetic operations
1. Addition
2. Subratcion
3. Multiplication
4. Division
5. Modulus
Please choose one option:    3
10 * 5 = 50
*/

/* 4th RUN
```

```
Arithmetic operations
1. Addition
2. Subratcion
3. Multiplication
4. Division
5. Modulus
Please choose one option:    4
10 / 5 = 2
*/

/* 5th RUN
Arithmetic operations
1. Addition
2. Subratcion
3. Multiplication
4. Division
5. Modulus
Please choose one option:    5
10 % 5 = 0
*/
```

12 - Write a program to demonstrate the use of relational operators { <, <=, >, >=, ==, !=}

```c
/*
  Date of creation: 11 November 2017,
  Title: Write a program to demonstrate the use of relational operators,
  Coded by: Rishikesh Agrawani
*/

// Include header file
#include<stdio.h>

// Definition of main() function
void main()
{
  int a = 10;
  int b = 5;
  int c = 6;

  /* < operator (less than) */
  if( b < a ) {
      printf("%d is less than %d.\n", b, a);
  }

  /* <= operator (less than or equal than) */
  if( b <= 5 ) {
      printf("%d is less than or equal to %d\n", b, 5);
  }

  /* > operator (greater than) */
  if( a > c ) {
      printf("%d is greater than %d.\n", a, c);
  }

  /* <= operator (greater than or equal to) */
```

```
  if( b >= 4 ) {
      printf("%d is greater than or equal to %d.\n", b, 4);
  }

  /* == operator (equal to) */
  if( c == 6 ) {
      printf("%d is equal to %d.\n", c, 6);
  }

  /* != operator (not equal to) */
  if( a != 7) {
      printf("%d is not equal to %d", a, 7);
  } else {
      printf("Enjoy C programming");
  }

}

/* Output:-
5 is less than 10.
5 is less than or equal to 5
10 is greater than 6.
5 is greater than or equal to 4.
6 is equal to 6.
10 is not equal to 7
*/
```

13 - Write a program to demonstrate the use of logical operators

```
/*
  Date of creation: 11 November 2017,
  Title: Write a program to demonstrate the use of logical operators,
  Coded by: Rishikesh Agrawani
*/

#include<stdio.h>

void main()
{
  int a = 10;
  int b = 5;
  int c = 6;

  /* && operator (LOGICAL AND) */
  if( (b < a) && (c < a)) {
      printf("%d is less than %d AND %d is less than %d.\n", b, a, c, a);
  } else {
      printf("Great");
  }

   /* && operator (LOGICAL AND) */
  if( (b < a) || (c > a)) {
      printf("%d is less than %d OR %d is greater than %d.\n", b, a, c, a);
  } else {
      printf("Excellent");
```

```
  }

  /* ! operator (LOGICAL NOT) */
  if( !(b > a) ) {
      printf("%d is NOT greater than %d", b, a);
  } else {
      printf("Nice");
  }
}

/* Output:-
5 is less than 10 AND 6 is less than 10.
5 is less than 10 OR 6 is greater than 10.
5 is NOT greater than 10
*/
```

14 - Write a program to use increment operator

```
/*
  Date of creation: 11 November 2017,
  Title: Write a program to use increment operator,
  Coded by: Rishikesh Agrawani
*/

#include<stdio.h>

void main()
{
  int a = 10;
  int b = 5;
  int c;

  // Using post-increment operator
  // first assign current value 10 then increment by 1
  c = a++;
  printf("%d, %d", a, c);
  printf("\n");

  // Using pre-increment operator
  // first increment then assign incremented value
  c = ++b;
  printf("%d, %d\n", b, c);

  c = ++b;
  printf("%d, %d", b, c);
}

/* Output:-
11, 10
6, 6
7, 7
*/
```

15 - Write a program to use decrement operator

```c
/*
  Date of creation: 11 November 2017,
  Title: Write a program to use decrement operator,
  Coded by: Rishikesh Agrawani
*/

#include<stdio.h>

void main()
{
  int a = 10;
  int b = 5;
  int c;

  // Using post-decrement operator
  // first assign current value 10 then decrement by 1
  c = a--;
  printf("%d, %d", a, c);
  printf("\n");

  // Using pre-decrement operator
  // first decrement then assign decremented value
  c = --b;
  printf("%d, %d\n", b, c);

  c = --b;
  printf("%d, %d", b, c);
}

/* Output:-
9, 10
4, 4
3, 3
*/
```

16 - Write a program for conditional if statement

```c
/*
  Date of creation: 11 November 2017,
  Title: Write a program for conditional if statement,
  Coded by: Rishikesh Agrawani
*/

#include<stdio.h>

void main()
{
  int a = 10;
  int b = 5;

  // Example 1
  if(a > b) {
      printf("I am Malinikesh & I know %d is greater than %d\n", a, b);
  }
```

```
  // Example 2
  if( a == 10) {
      printf("%d is equal to 10", a);
  }
}

/* Output:-
I am Malinikesh & I know 10 is greater than 5
10 is equal to 10
*/
```

17 - Write a program for conditional if...else statement

```
/*
  Date of creation: 11 November 2017,
  Title: Write a program for conditional if...else statement,
  Coded by: Rishikesh Agrawani
*/

#include<stdio.h>

void main()
{
  int a = 10;
  int b = 5;

  // Example 1
  if(a < b) {
      printf("I am Malinikesh & I know %d is greater than %d\n", a, b);
  } else {
      printf("I am Malinikesh & I know %d is greater than %d\n", a, b);
  }

  // Example 2
  if( b != 10) {
      printf("%d is not equal to 10", b);
  } else {
      printf("%d is equal to 10", b);
  }
}

/* Output:-
I am Malinikesh & I know 10 is greater than 5
5 is not equal to 10
*/
```