

Date 21.05.23.

① WAP in C to find greatest & smallest among 3 nos.

```
#include <stdio.h>
```

```
int main()
```

```
    int a, b, c;
```

```
    printf("enter three numbers: \n a:");
```

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

```
    printf("b:");
```

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

```
    printf("c:");
```

```
    scanf("%d", &c); // for bigger greatest number.
```

```
    if (a > b && a > c)
```

```
        printf("biggest number is %d", a);
```

```
    else if (b > a && b > c)
```

```
        printf("biggest number is %d", b);
```

```
    else (c > a && c > b)
```

```
        printf("biggest number is %d", c);
```

```
= return 0;
```

2) // for smaller number .

```
if (a < b && a < c)
```

```
    printf("smallest number is %d", a);
```

```
else if (b < a && b < c)
```

```
    printf("smallest number is %d", b);
```

```
else if (c < a && c < b)
```

```
    printf("smallest number is %d", c);
```

```
return 0;
```

- ② WAP in C to find SI on ₹ 140000 for 10 yrs at 5% ROI.
- ```
#include <stdio.h>
int main() {
 float P, R, T;
 printf("Enter principal amount: ₹ %.2f\n",
 #include <stdio.h>
int main() {
 // Simple interest program
 int p, r, t, interest;
 printf("Enter p : ");
 scanf("%d", &p);
 printf("Enter r : ");
 scanf("%d", &r);
 printf("\nEnter t : ");
 scanf("%d", &t);
 printf("The SI is %.d", (SI = (p * r * t) / 100));
 return 0;
}
```
- ③ WAP which accepts a yr. and displays whether it is leap year or not.
- ```
#include <stdio.h>
int main() {
    int year;
    printf("Enter the year");
    scanf("%d", &year);
    if (year % 4 == 0 && year % 100 != 0 || (year % 400 == 0))
        printf("Given year is leap year");
    else
        printf("Given year is not leap year");
    return 0;
}
```

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(4) Write a program to display all the prime numbers between 50 and 100.

→ `#include <stdio.h>`

`int isPrime(int num) {`

`if (num <= 1) {`

`return 0;`

`}`

`for (int i=2; i<=num/2; i++) {`

`if (num % i == 0) {`

`return 0;`

`}`

`return 1;`

`}`

`int main() {`

`int start = 50;`

`int end = 100;`

`printf(" prime numbers between %d and %d are :\n",`

`start, end);`

`for (int i=start; i<=end; i++) {`

`if (isPrime(i)) {`

`printf("%d", i);`

`}`

`}`

`printf("\n");`

`return 0;`

`}`

⑤ WAP in C to copy contents of one file to another file.

```
#include <stdio.h>
```

```
#include <stdlib.h>
```

```
int main()
```

```
{
```

```
FILE * fptr1, * fptr2;
```

```
char filename[100], c;
```

```
printf("Enter the filename to open for reading\n");
```

```
scanf("%s", filename);
```

```
fptr1 = fopen(filename, "r");
```

```
if (fptr1 == NULL)
```

```
{
```

```
printf("Cannot open file %s\n", filename);
```

```
exit(0);
```

```
}
```

File 1 = a.txt
File 2 = b.txt

Output

Enter the filename to open for
reading
a.txt

Enter the filename to open for
writing
b.txt

Content copied to b.txt

```
printf("Enter the filename to open for writing\n");
```

```
scanf("%s", filename);
```

```
fptr2 = fopen(filename, "w");
```

```
if (fptr2 == NULL)
```

```
{
```

```
printf("Cannot open file %s\n", filename);
```

```
exit(0);
```

```
}
```

File 1 = a.txt
File 2 = b.txt

Output

```
c = fgetc(fptr1);
```

```
while (c != EOF)
```

```
{
```

```
  fputc(c, fptr2);
```

```
  c = fgetc(fptr1);
```

```
}
```

File 1 = a.txt
File 2 = b.txt

Output

```
printf("\n Content copied to %s", filename);
```

```
fclose(fptr1);
```

```
fclose(fptr2);
```

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⑥ WAP to implement Structure:

→ #include <stdio.h>

```
Struct StudentData {
    char *stu_name;
    int stu_id;
    int stu_age;
};
```

```
int main() {
```

```
    Struct StudentData student;
```

```
    student.stu_name = "Steve";
```

```
    student.stu_id = 1234;
```

```
    student.stu_age = 30;
```

```
    printf("Student name is: %s", student.stu_name);
```

```
    printf("In Student Id is: %d", student.stu_id);
```

```
    printf("In Student Age is: %d", student.stu_age);
```

```
    return 0;
```

* Structure is a grp. of variables of diff. data types represented by a single name.

Q) WAP to check given program is Palindrome or not.

→ #include <stdio.h>

int main() {

 int n, reversed = 0, remainder, original;

 printf("Enter an integer: ");

 scanf("%d", &n);

 original = n;

 while(n != 0) {

 remainder = n % 10;

 reversed = reversed * 10 + remainder;

 n /= 10;

 }

 if (original == reversed)

 printf("%d is a palindrome.", original);

 else

 printf("%d is not a palindrome.", original);

 return 0;

}

Q) WAP to check the number is Krishnamurthy number or not.

→ Krishnamurthy number is a no. which is equal to the sum of the factorials of its digits. For ex - 145 is a K.NO. bcz: $145 = 1! + 4! + 5! = 1 + 24 + 120 = 145$.

Program:-

```
#include<stdio.h>
int main()
{
    int num, i, rem, temp, fact, Sum=0;
    printf("Enter a number:");
    scanf("%d", &num);

    for(temp=num; temp>0; temp=temp/10)
    {
        fact=1;
        rem=temp%10;

        for(i=1; i<=rem; i++)
        {
            fact=i*fact;
        }

        Sum=Sum+fact;
    }

    if(num==Sum)
        printf("%d is a Krishnamurthy number.", num);
    else
        printf("%d is not a Krishnamurthy number.", num);

    return 0;
}
```

⑨ WAP to sort an array using bubble sort.

→ #include <stdio.h>

int main ()
{

 int array [100], n, c, d, Swap;

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

 scanf ("%d", &n);

 printf ("Enter %d integers\n", n);

 for (c=0; c<n; c++)

 scanf ("%d", &array [c]);

 for (c=0; c<n-1; c++)

 {

 for (d=0; d<n-c-1; d++)

 {

 if (array [d] > array [d+1])

 {

 Swap = array [d];

 array [d] = array [d+1];

 array [d+1] = Swap;

 }

 }

 }

 printf ("Sorted list in ascending Order:\n");

 for (c=0; c<n; c++)

 printf ("%d\n", array [c]);

 return 0;

}

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Output

(10) Swap two numbers using pointers.

→ #include <stdio.h>

#include <conio.h>

Void main()

int x, y, *ptr_x, *ptr_y, temp;

clrscr();

printf("Enter the value of x and y\n");

scanf("%d %d", &x, &y);

printf("Before Swapping \n x = %d \n y = %d\n", x, y);

ptr_x = &x;

ptr_y = &y;

temp = *ptr_y;

*ptr_y = *ptr_x;

*ptr_x = temp;

printf("After Swapping \n x = %d \n y = %d\n", x, y);

getch();

Enter the value of n

10

20

Before Swapping

n=10

y=20

After Swapping

n=20

y=10

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(ii) Write a function `power(a,b)` to calculate the value of a raised to the power b .

```
#include <stdio.h>
```

```
#include <conio.h>
```

```
#include <math.h>
```

```
int power (int a, int b);
```

```
int main()
```

```
{
```

```
    int a, b, res;
```

```
    printf ("Enter a: ");
```

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

```
    printf ("Enter b: ");
```

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

```
    res = power (a, b);
```

```
    printf ("Result : %d", res);
```

```
}
```

```
int power (int a, int b)
```

```
{
```

```
    int x;
```

```
    x = pow(a, b);
```

```
    return x;
```

```
}
```

Output:

Enter a: 2

Enter b: 3

Result: 8

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- (12) Enter a string (in lower case) in a 1-D character array and print the string in upper case. (without using predefined function).

```
#include < stdio.h >
#include < string.h >
int main()
{
    char s[1000];
    int i;
    printf("Enter the string in lower case:");
    gets(s);
    printf("String in lowercase = '%s'\n", s);
    for(i=0; s[i]; i++)
    {
        if(s[i] >= 97 && s[i] <= 122)
            s[i] = 32;
    }
    printf("String in uppercase = '%s'\n", s);
    return 0;
}
```

(12) WAP that accepts 10 integers & display largest & smallest.
 → #include < stdio.h >

(13) WAP to calculate the factorial value of an integer entered through no keyboard.

→ #include < stdio.h >

#include < conio.h >

int fact (int num);

int main()

{

int n, fact;

printf ("Enter an integer: ");

scanf ("%d", &n);

fact = fact(n);

printf ("The factorial of %d is %d", n, fact);

int fact (int num)

{

int res;

res = num;

while (num > 1)

{

res = res * (num - 1);

num = num - 1;

}

return res;

?

