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**Lab # 5**

**Problem # 1**

#include<iostream>

using namespace std;

int factorial(int num)

{

if (num == 0 || num == 1)

{

return 1;

}

else

{

return (num \* factorial(num - 1));

}

}

int main()

{

int n;

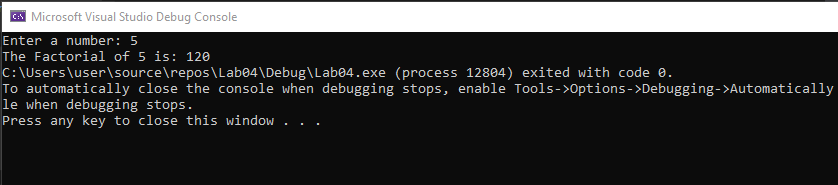
cout << "Enter a number: ";

cin >> n;

int result = factorial(n);

cout << "The Factorial of " << n << " is: " << result;

}



**Problem # 2**

#include<iostream>

using namespace std;

int maximum(int array[], int num)

{

if (num == 1)

{

return array[0];

}

else

{

return max((array[num - 1]), maximum(array, num - 1));

}

}

int minimum(int a[], int length)

{

if (length == 1)

{

return a[0];

}

else

{

return min(a[length - 1], minimum(a, length - 1));

}

}

int main()

{

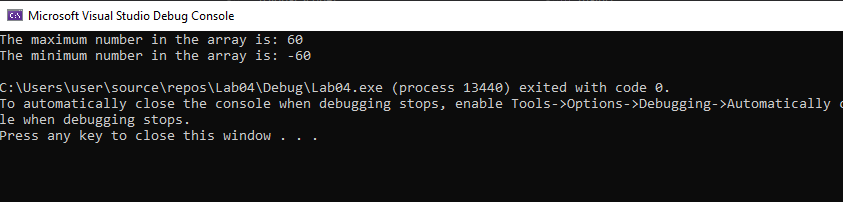
int arr[] = { 4,60,43,0,-60,34 };

int total = sizeof(arr) / sizeof(arr[0]);

cout << "The maximum number in the array is: " << maximum(arr, total) << endl;

cout << "The minimum number in the array is: " << minimum(arr, total) << endl;

}



**Problem # 3**

#include<iostream>

using namespace std;

int max(int n);

int min(int n);

int main()

{

int num;

cout << "Enter number: ";

cin >> num;

cout << "The Maximum digit in " << num << " is: " << max(num) << endl;

cout << "The Minimum digit in " << num << " is: " << min(num) << endl;

}

int max(int n)

{

if (n == 0)

{

return 0;

}

else

{

int a = n % 10;

int b = max(n/10);

if (a > b)

{

return a;

}

else

{

return b;

}

}

}

int min(int n)

{

if (n == 0)

{

return 0;

}

else

{

int a = n % 10;

int b = min(n/10);

if (a < b)

{

return a;

}

else

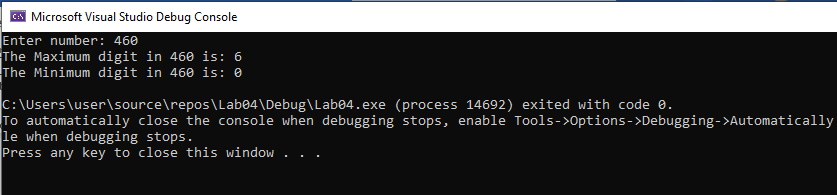
{

return b;

}

}

}



**Problem # 4**

#include<iostream>

using namespace std;

int fibonacci(int n)

{

if (n == 0 || n == 1)

{

return n;

}

else

{

return (fibonacci(n - 1) + fibonacci(n - 2));

}

}

int main()

{

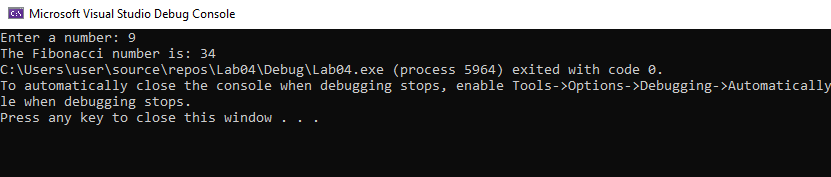
int n;

cout << "Enter a number: ";

cin >> n;

cout<<"The Fibonacci number is: "<< fibonacci(n);

}



**Problem # 5**

#include<iostream>

using namespace std;

int fibonacci(int n)

{

if (n == 0 || n == 1)

{

return n;

}

else

{

return (fibonacci(n - 1) + fibonacci(n - 2));

}

}

int main()

{

int n, i = 0;

cout << "Enter Size of fibonacci series: ";

cin >> n;

cout << "The fibonacci series is: " ;

while (i < n)

{

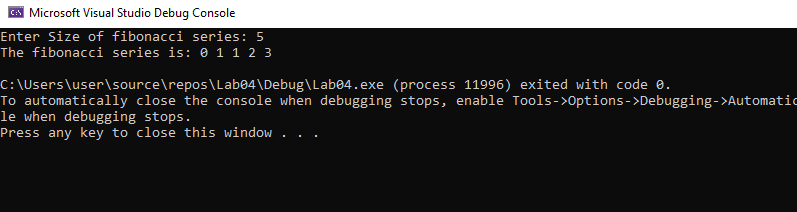
cout << fibonacci(i) << " ";

i++;

}

cout << endl;

}



**Problem # 6**

#include<iostream>

using namespace std;

int fun(int dec)

{

if (dec == 0)

return 0;

else

return (dec % 2 + 10 \* fun(dec / 2));

}

int main() {

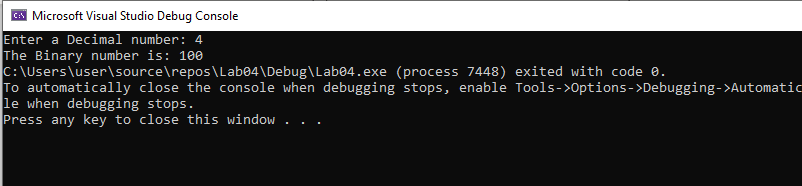
int decimal;

cout << "Enter a Decimal number: ";

cin >> decimal;

cout<<"The Binary number is: "<< fun(decimal);

}



**Problem # 7**

#include<iostream>

using namespace std;

int pow(int n,int p)

{

if (p == 0)

{

return 1;

}

else

{

return n\*pow(n,p-1);

}

}

int main()

{

int n,power;

cout << "Enter a number: ";

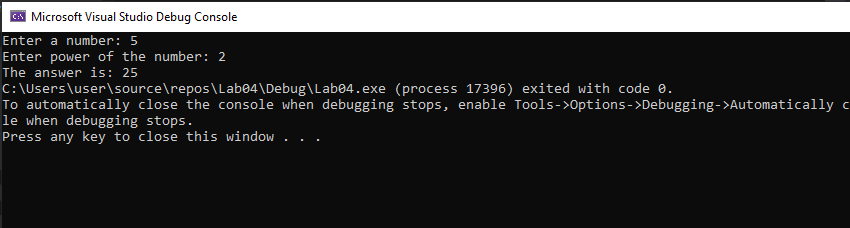
cin >> n;

cout << "Enter power of the number: ";

cin >> power;

cout<<"The answer is: "<< pow(n,power);

}



**Problem # 8**

#include <iostream>

using namespace std;

int reverse(int n)

{

static int temp= 0;

static int b = 1;

if (n > 0)

{

reverse(n / 10);

temp = temp + (n % 10) \* b;

b = b \* 10;

}

return temp;

}

int main()

{

int num;

cout << "Enter a Number: ";

cin >> num;

cout << "Reverse of Number is " << reverse(num);

}

