

11-04-2023

## ASSIGNMENT 1 OOPS WITH C++

Print the numbers and character variables, we use the same cout object but without using quotation marks.

Answer:

```
#include <iostream>
using namespace std;

int main() {
    int num1 = 70;
    double num2 = 256.783;
    char ch = 'A';

    cout << num1 << endl;    // print integer
    cout << num2 << endl;    // print double
    cout << "character: " << ch << endl;    // print char
    return 0;
}
```

E:\c++\number using cout.exe

70

256.783

character: A

-----

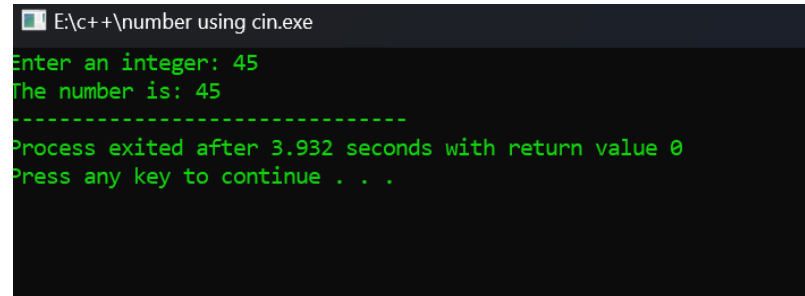
Process exited after 0.05353 seconds with return value 0

Press any key to continue . . .

2 Print the numbers by taking input from keyboard using cin object.

```
#include <iostream>
using namespace std;

int main() {
    int num;
    cout << "Enter an integer: ";
    cin >> num;    // Taking input
    cout << "The number is: " << num;
    return 0;
}
```



```
E:\c++\number using cin.exe
Enter an integer: 45
The number is: 45
-----
Process exited after 3.932 seconds with return value 0
Press any key to continue . . .
```

3. Write a program in c++ by taking multiple input from keyboard using cin object and cout object.

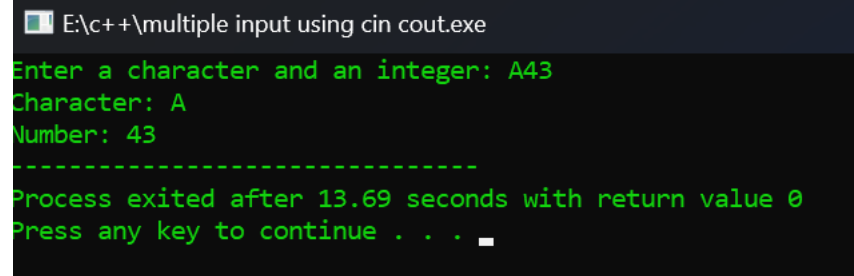
```
#include <iostream>
using namespace std;

int main() {
    char a;
    int num;

    cout << "Enter a character and an integer: ";
    cin >> a >> num;

    cout << "Character: " << a << endl;
    cout << "Number: " << num;

    return 0;
}
```

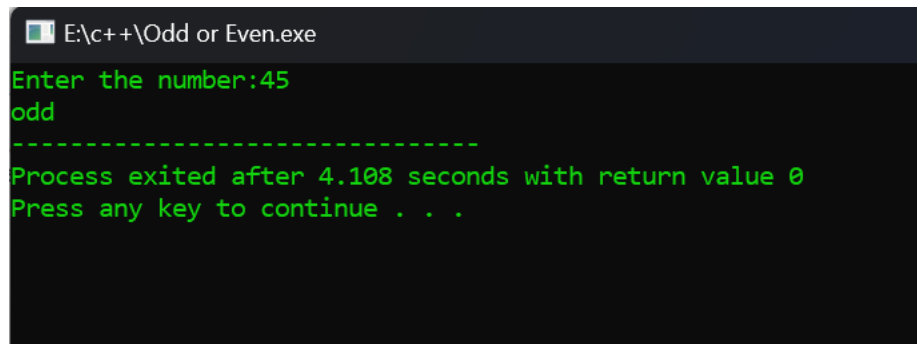


```
E:\c++\multiple input using cin cout.exe
Enter a character and an integer: A43
Character: A
Number: 43
-----
Process exited after 13.69 seconds with return value 0
Press any key to continue . . . _
```

#### 4. Check if a number is even or odd.

```
#include <iostream>
using namespace std;
int main() {
    int a;
    cout<<"Enter the number:";
    cin>>a;
    if(a%2 == 0) // if remainder is zero then even number
        cout<<"even";
    else    cout<<"odd";
    return 0;
}
```

OUTPUT:



```
E:\c++\Odd or Even.exe
Enter the number:45
odd
-----
Process exited after 4.108 seconds with return value 0
Press any key to continue . . .
```

5. find error in this program

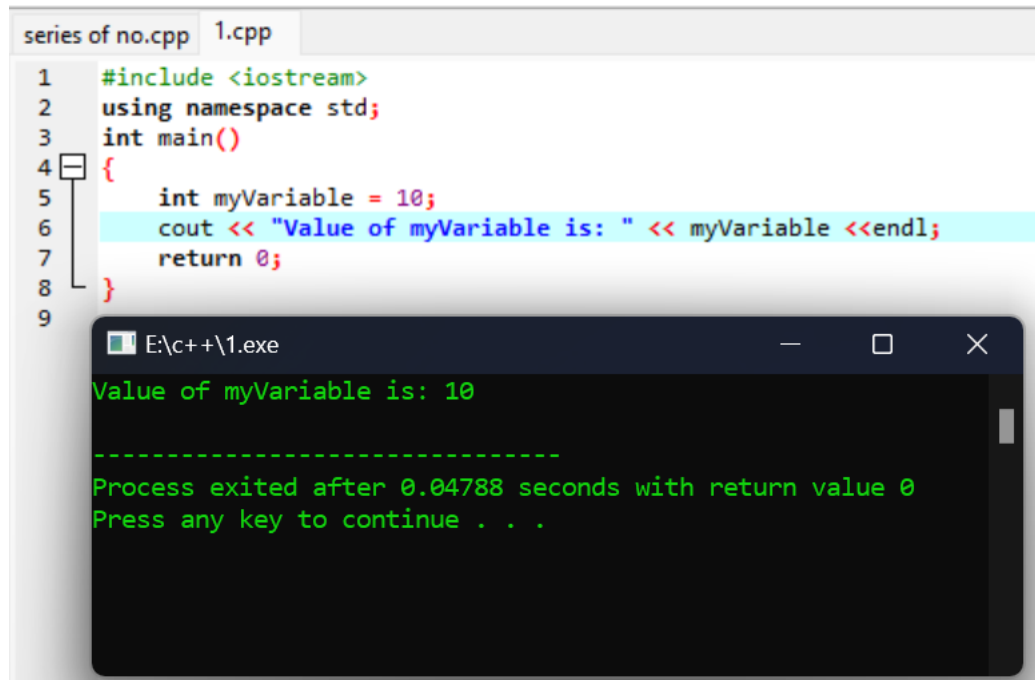
```
series of no.cpp
1  #include <iostream>
2  using namespace std;
3  int main()
4  {
5      int number;
6      for (int i = 1; i <= 6; i++)
7      {
8          cout << "Value of variable i is: " << i << std::endl;
9      }
10     return 0;
11 }
12
```

OUTPUT:

```
E:\c++\series of no.exe
Value of variable i is: 1
Value of variable i is: 2
Value of variable i is: 3
Value of variable i is: 4
Value of variable i is: 5
Value of variable i is: 6

-----
Process exited after 0.0559 seconds with return value 0
Press any key to continue . . .
```

```
6. #include
void main()
{ int public=10;
cout<public;
}
```



The image shows a C++ IDE with two tabs: 'series of no.cpp' and '1.cpp'. The '1.cpp' tab is active, displaying the following code:

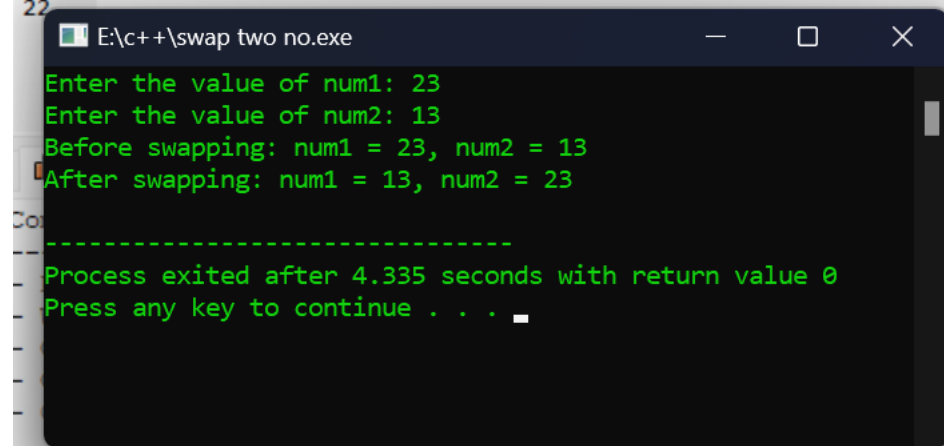
```
1  #include <iostream>
2  using namespace std;
3  int main()
4  {
5      int myVariable = 10;
6      cout << "Value of myVariable is: " << myVariable << endl;
7      return 0;
8  }
```

Below the code editor, a console window titled 'E:\c++\1.exe' shows the output of the program:

```
Value of myVariable is: 10
-----
Process exited after 0.04788 seconds with return value 0
Press any key to continue . . .
```

7. Write a c++ code for swapping of two numbers .

```
1  #include <iostream>
2  using namespace std;
3  int main() {
4      int num1, num2;
5
6      cout << "Enter the value of num1: ";
7      cin >> num1;
8      cout << "Enter the value of num2: ";
9      cin >> num2;
10
11     std::cout << "Before swapping: num1 = " << num1 << ", num2 = " << num2 << endl;
12
13     // Swap the values using a temporary variable
14     int temp = num1;
15     num1 = num2;
16     num2 = temp;
17
18     cout << "After swapping: num1 = " << num1 << ", num2 = " << num2 << endl;
19
20     return 0;
21 }
```



The screenshot shows a Windows command prompt window titled "E:\c++\swap two no.exe". The output of the program is displayed in green text on a black background. It prompts the user to enter values for num1 and num2, shows the values before and after swapping, and ends with a message indicating the process exited successfully.

```
E:\c++\swap two no.exe
Enter the value of num1: 23
Enter the value of num2: 13
Before swapping: num1 = 23, num2 = 13
After swapping: num1 = 13, num2 = 23
-----
Process exited after 4.335 seconds with return value 0
Press any key to continue . . .
```

8. Wrapping data and its related functionality into a single entity is known as \_\_\_\_\_Encapsulation

a) Abstraction

**b) Encapsulation**

c) Polymorphism

d) Modularity

Answer: B

9. What happens if the following program is executed in C and C++?

```
#include<stdio.h>
int main()
{
    foo();
}
int foo()
{
    printf("Hello");
    return 0;
}
```

Error in both C and C++

b) Warning in both C and C++

c) Error in C++ but Warning in C

d) Error in C but Warning in C++

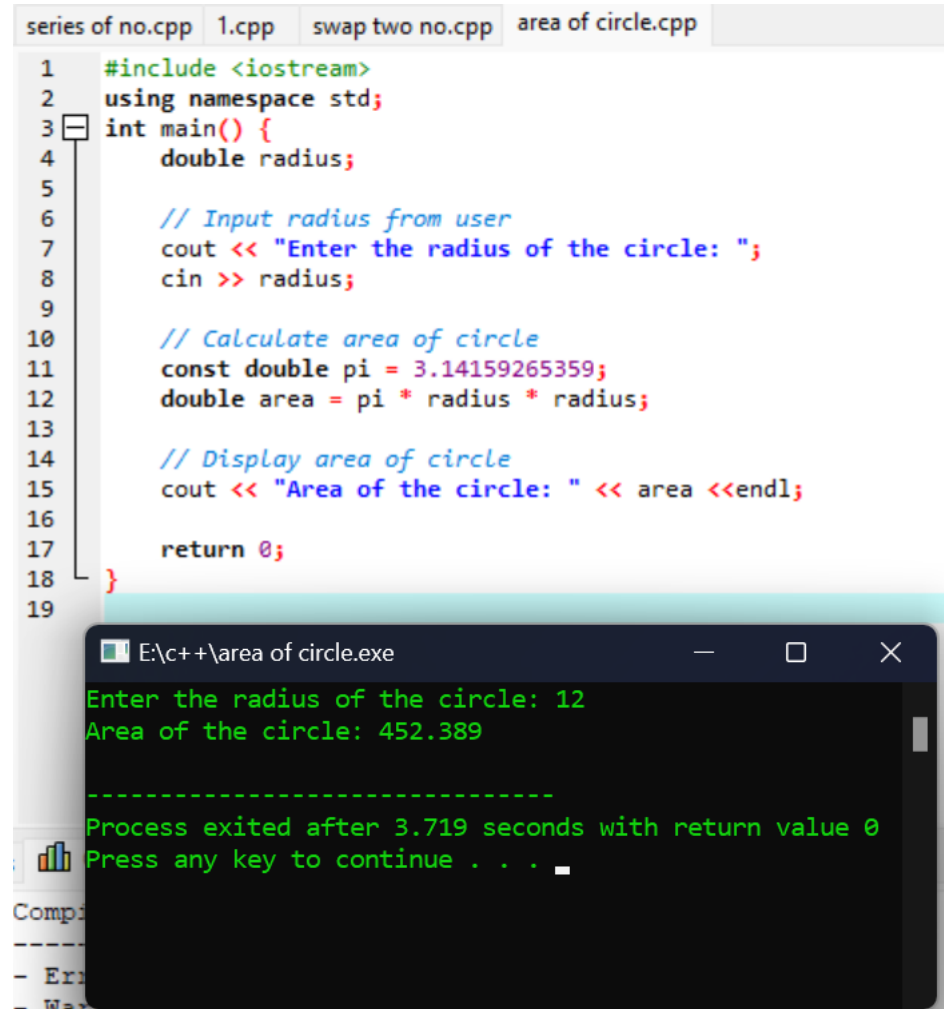
**Answer: c**

Explanation: In C++ all the functions should be declared before it is called otherwise the C++ compiler will give an error but in case of C the compiler just gives a warning and the program can be executed.



10. Write a C++ code to area of circle and area of rectangle.

AREA OF CIRCLE:



The image shows a C++ IDE with a file named 'area of circle.cpp' open. The code is as follows:

```
1  #include <iostream>
2  using namespace std;
3  int main() {
4      double radius;
5
6      // Input radius from user
7      cout << "Enter the radius of the circle: ";
8      cin >> radius;
9
10     // Calculate area of circle
11     const double pi = 3.14159265359;
12     double area = pi * radius * radius;
13
14     // Display area of circle
15     cout << "Area of the circle: " << area << endl;
16
17     return 0;
18 }
19
```

Below the code editor, a terminal window titled 'E:\c++\area of circle.exe' displays the program's execution. It shows the prompt 'Enter the radius of the circle: 12', the output 'Area of the circle: 452.389', and a message indicating the process exited after 3.719 seconds with a return value of 0. The terminal also shows a prompt 'Press any key to continue . . . '.

AREA OF RECTANGLE:

area of rectangle.cpp

```
1  #include <iostream>
2  using namespace std;
3  int main() {
4      double length, breadth;
5      |
6      // Input length and breadth from user
7      cout << "Enter the length of the rectangle: ";
8      cin >> length;
9      cout << "Enter the breadth of the rectangle: ";
10     cin >> breadth;
11
12     // Calculate area of rectangle
13     double area = length * breadth;
14
15     // Display area of rectangle
16     cout << "Area of the rectangle: " << area << endl;
17
18     return 0;
19 }
20
```

E:\c++\area of rectangle.exe

Enter the length of the rectangle: 2  
Enter the breadth of the rectangle: 3  
Area of the rectangle: 6

-----  
Process exited after 9.318 seconds with return value 0

Press any key to continue . . . |