

Function Call Operator Exercises

Function call operator

- Briefly describe the function call operator

Function call operator example

- Write a class with a function call operator
 - The function call operator takes one argument, of type int
 - The function call operator returns bool
 - The return value is true if the argument is an exact multiple of 2, otherwise false
- Write a program to test your class

Functors

- Explain what a functor is
- What is a functor used for?

Function call operator example

- Explain what the class below does
- Implement this class and write a program to exercise it

```
class evenp {  
    public:  
        bool operator() (int n) {  
            return (n % 2 == 0);  
        }  
};
```

Function Call Operator Example 2

- Write a function which takes a vector and an object of type `evenp` as argument
- The function passes each element of the vector as an argument to the object's function call operator
- It prints out the result of the call
- Write a program to test your function

Functors with state

- What does it mean for a functor to have state?
- Repeat the previous exercises, but this time with a more general version of the functor
 - Instead of checking for multiples of 2, it checks for multiples of a number which is stored in a data member
 - The data member is initialized in the constructor
 - For example, we could create an object with this value as 3
 - Every time the function call operator is invoked, it checks whether its argument is divisible by 3