

Programming Language Posters

Suggested Activities

- 1 Discover why each programming language was created.
- 2 Find what has changed with programming languages over time.
- 3 List what other programming languages you know.
- 4 Research what these programming terms mean:
 - Imperative
 - Functional
 - Object Oriented
 - Static Typing
 - Dynamic Typing
 - Visual Programming

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Assembly

Popular for low level programming, compatability with older hardware

```
.text
.global main
main:
    # Save the non-volatile registers:
    pushq   %r15
    pushq   %r14
    pushq   %r13
    pushq   %r12
    pushq   %rbx

    # Initialize the loop counter:
    movl    $1, %ebx

    # Load the string literal addresses:
    leaq    FizzBuzz(%rip), %r14
    leaq    Fizz(%rip), %r15
    leaq    Buzz(%rip), %r12
    leaq    Format(%rip), %r13

Top:
    # Compute i % 3 and i % 5:
    movzbl  %bl, %eax
    imull   $205, %eax, %ecx
    shr    $10, %ecx
    leal   (%rcx,%rcx,4), %edx
    imull  $171, %eax, %eax
    shr    $9, %eax
    leal   (%rax,%rax,2), %eax
    negl   %eax
    movzbl %al, %ecx
    addl   %ebx, %ecx
    movl   %ebx, %eax
    subl   %edx, %eax
    movl   %ecx, %edx

    # Decide what to print:
    orb    %al, %dl
    je     PutsFizzBuzz

    testb  %cl, %cl
    je     PutsFizz

    testb  %al, %al
    je     PutsBuzz

    movq   %r13, %rdi
    movl   %ebx, %esi

    xorl   %eax, %eax
    callq  printf
    jmp    Next

PutsFizzBuzz:
    movq   %r14, %rdi
    jmp    CallPuts

PutsFizz:
    movq   %r15, %rdi
    jmp    CallPuts

PutsBuzz:
    movq   %r12, %rdi

CallPuts:
    callq  puts

Next:
    incl   %ebx
    cmpl   $101, %ebx
    jne    Top

    # Set the return value to 0:
    xorl   %eax, %eax

    # Restore the non-volatile registers:
    popq   %rbx
    popq   %r12
    popq   %r13
    popq   %r14
    popq   %r15

    # Return:
    retq

Format:
    .asciz "%d\n"

Buzz:
    .asciz "Buzz"

Fizz:
    .asciz "Fizz"

FizzBuzz:
    .asciz "FizzBuzz"
```

Assembly

1949

2014

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Basic

Popular for computer science education, scripting, games

```
FOR A = 1 TO 100
  IF A MOD 3 = 0 AND A MOD 5 = 0 THEN
    PRINT "FizzBuzz"
  ELSE IF A MOD 3 = 0 THEN
    PRINT "Fizz"
  ELSE IF A MOD 5 = 0 THEN
    PRINT "Buzz"
  ELSE
    PRINT A
  END IF
NEXT A
```



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Popular for operating systems, interpreters, embedded processors, games

```
#include <stdio.h>

int main (int argc, char** argv)
{
    for (int i = 1; i <= 100; i++)
    {
        if (!(i % 3) && !(i % 5))
            printf("FizzBuzz\n");
        else if (!(i % 3))
            printf("Fizz\n");
        else if (!(i % 5))
            printf("Buzz\n");
        else printf("%d\n", i);
    }
    return 0;
}
```



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Scheme

Popular for computer science education, scripting, academic research

```
(define (fizzify i)
  (cond
    (and (= (modulo i 3) 0) (= (modulo i 5) 0) "FizzBuzz")
    ((= (modulo i 3) 0) "Fizz")
    ((= (modulo i 5) 0) "Buzz")
    (#t i)
  )
)
```

```
(define (fizzbuzz i)
  (if (<= i 100)
    (begin
      (display (fizzify i)) (display "\n")
      (fizzbuzz (+ i 1))
    )
  )
)
```

```
(fizzbuzz 1)
```

Scheme

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Perl

Popular for scripting, internet services, interfacing systems

```
for my $i(1..100) {  
    if ($i % 3 == 0 && $i % 5 == 0) {  
        print "FizzBuzz";  
    }  
    elsif($i % 3 == 0) {  
        print "Fizz";  
    }  
    elsif($i % 5 == 0) {  
        print "Buzz";  
    }  
    else {  
        print $i;  
    }  
    print "\n";  
}
```



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Haskell



Popular for computer science education, academic research

```
fb :: Integer -> String
fb i
  | mod i 3 == 0 && mod i 5 == 0 = "FizzBuzz"
  | mod i 3 == 0                = "Fizz"
  | mod i 5 == 0                = "Buzz"
  | otherwise                    = show i

main = do
  putStrLn $ unlines (map fb [1..100])
```



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Python



Popular for computer science education, scripting, internet services, games

```
for i in range(1, 101):  
    if i % 3 == 0 and i % 5 == 0:  
        print("FizzBuzz")  
    elif i % 3 == 0:  
        print("Fizz")  
    elif i % 5 == 0:  
        print("Buzz")  
    else:  
        print(i)
```



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Java



Popular for applications, mobile devices, compilers, interpreters, games

```
public class FizzBuzz
{
    public static void main (String[] args)
    {
        for (int i = 1; i <= 100; i++)
        {
            if (i % 3 == 0 && i % 5 == 0) {
                System.out.println("FizzBuzz");
            } else if (i % 3 == 0) {
                System.out.println("Fizz");
            } else if (i % 5 == 0) {
                System.out.println("Buzz");
            } else {
                System.out.println(i);
            }
        }
    }
}
```



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Ruby

Popular for internet services, scripting



```
for i in 1..100
  if (i % 3 == 0) && (i % 5 == 0)
    puts "Fizzbuzz"
  elsif i % 3 == 0
    puts "Fizz"
  elsif i % 5 == 0
    puts "Buzz"
  else
    puts i
  end
end
```



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JavaScript

Popular for web applications, scripting

JS

```
for (var i = 1; i <= 100; i++) {  
  if (i % 3 == 0 && i % 5 == 0) {  
    console.log("FizzBuzz");  
  } else if (i % 3 == 0) {  
    console.log("Fizz");  
  } else if (i % 5 == 0) {  
    console.log("Buzz");  
  } else {  
    console.log(i);  
  }  
}
```



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C#



Popular for applications, internet services, business, games

```
using System;
namespace FizzBuzz {
    public class example {
        static void Main(string[] args) {
            for (int i = 1; i <= 100; i++) {
                if (i % 3 == 0 && i % 5 == 0) {
                    Console.WriteLine("FizzBuzz");
                } else if (i % 3 == 0) {
                    Console.WriteLine("Fizz");
                } else if (i % 5 == 0) {
                    Console.WriteLine("Buzz");
                } else {
                    Console.WriteLine(i);
                }
            }
        }
    }
}
```



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Scratch



Popular for computer science education

```
when green flag clicked
  set counter to 0
  repeat 100
    change counter by 1
    if (counter mod 3 = 0) and (counter mod 5 = 0) then
      say FizzBuzz for 0.5 secs
    else
      if (counter mod 3 = 0) then
        say Fizz for 0.5 secs
      else
        if (counter mod 5 = 0) then
          say Buzz for 0.5 secs
        else
          say counter for 0.5 secs
```



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Swift



Popular for developing software on Apple platforms

```
for i in 1...100
{
    if i % 3 == 0 && i % 5 == 0 {
        print("FizzBuzz")
    } else if i % 3 == 0 {
        print("Fizz")
    } else if i % 5 == 0 {
        print("Buzz")
    } else {
        print(i)
    }
}
```



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