

# Bitsets Solutions

# Data Access

- Write a program which creates a bitset object and prints out its value
  - As a binary number
  - As a decimal number
  - As an `std::string`
- Iterate over all the bits in the object and print out their values
- Attempt to access a bit which is outside the object's range

# Bitwise Operations

- Write a program which creates two bitset objects and prints out their values
- Print out the result of the following operations on your objects
  - Logical NOT
  - Logical AND
  - Logical OR
  - Exclusive OR
  - Left and right shift

# Bit Operations

- Write a program which creates a bitset object
- Print out the results of the following operations on this object:
  - Set all bits to true
  - Set all bits to false
  - Set one bit to true
  - Set one bit to false
  - Invert all bits
  - Invert one bit

# Bitset Checks

- `all()`
  - Returns true if all bits are true
- `any()`
  - Returns true if at least one bit is true
- `none()`
  - Returns true if no bits are true
- `count()`
  - Returns the number of true bits

# Bitset Checks

- Write a program which creates a bitset object
- Create two more bitset objects
  - One in which all bits are true
  - One in which all bits are false
- Print out the results of the following operations on these objects:
  - `all()`
  - `any()`
  - `none()`
  - `count()`