

# 1 main — MIR Walkthrough

**Purpose:** TODO: Describe why this walkthrough exists

## 1.1 Source Context

```
fn main() {  
    assert!(420 / 10 ==42);  
}
```

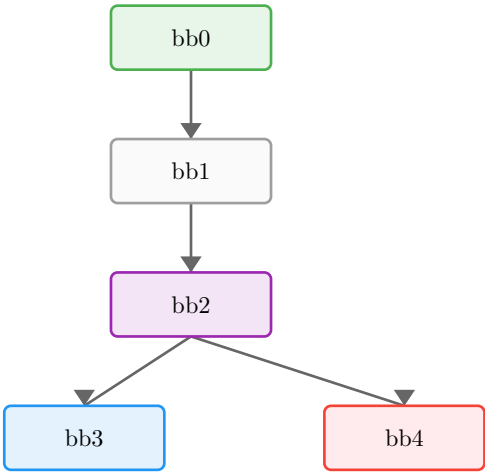
## 1.2 Function Overview

- **Function:** main
- **Basic blocks:** 5
- **Return type:** ()
- **Notable properties:**
  - Contains panic path
  - Contains assertions
  - Has conditional branches

## 1.3 Locals

| Local | Type | Notes        |
|-------|------|--------------|
| 0     | ()   | Return place |
| 1     | i32  |              |
| 2     | bool |              |
| 3     | bool |              |
| 4     | bool |              |
| 5     | bool |              |
| 6     | !    |              |

## 1.4 Control-Flow Overview



## 1.5 Basic Blocks

**1.5.1 bb0 — entry**  
*Entry point of the function.*

| MIR | Annotation |
|-----|------------|
|-----|------------|

|  |                           |
|--|---------------------------|
| <code>\_2 = 10 == 0</code>                     | Equal operation           |
| <code>→ assert(move \_2 == false) → bb1</code> | Panic if move \_2 is true |

### 1.5.2 bb1

| MIR  | Annotation                |
|--|---------------------------|
| <code>\_3 = 10 == -1</code>                    | Equal operation           |
| <code>\_4 = 420 == -2147483648</code>          | Equal operation           |
| <code>\_5 = move \_3 &amp; move \_4</code>     | AND operation             |
| <code>→ assert(move \_5 == false) → bb2</code> | Panic if move \_5 is true |

### 1.5.3 bb2 — branch point

| MIR  | Annotation         |
|--|--------------------|
| <code>\_1 = 420 / 10</code>                          | Divide operation   |
| <code>→ switch(move \_1) \[42→bb3; else→bb4\]</code> | Branch on move \_1 |

### 1.5.4 bb3 — return / success

*Normal return path.*

| MIR                   | Annotation           |
|-----------------------|----------------------|
| <code>→ return</code> | Return from function |

### 1.5.5 bb4 — panic path

*Panic/diverging path.*

| MIR                                      | Annotation |
|--|------------|
| <code>→ \_6 = panic(\[16 bytes\])</code> | Call panic |

## 1.6 Key Observations

TODO: Add bullet points summarizing what this MIR teaches

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## 1.7 Takeaways

TODO: One or two sentences to generalize this example

