

1 main — MIR Walkthrough

Purpose: TODO: Describe why this walkthrough exists

1.1 Source Context

```
fn main() {
    let a: WithParam<u32> = WithParam{the_t: 42, another: 42};

    let b: WithParam<u64> = WithParam{the_t: 42, another: 42};

    let c: Result<u8, usize> = Err(a.another);
    let d : Result<u64, u8> = Ok(b.the_t);

    let x = c.err().unwrap();

    assert!(x as u64 == d.unwrap());
}
```

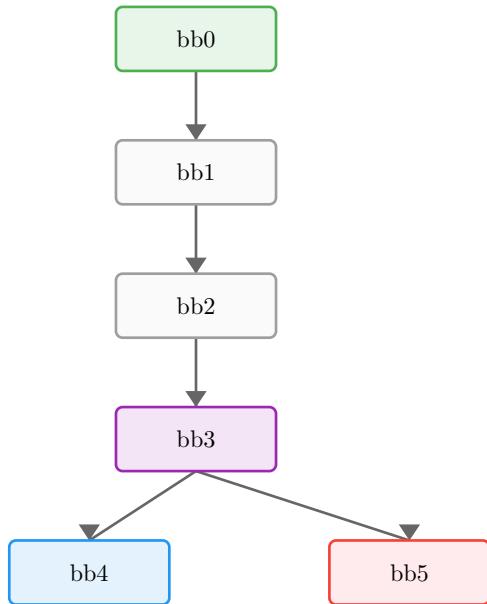
1.2 Function Overview

- **Function:** main
- **Basic blocks:** 6
- **Return type:** () (0 bytes, align 1)
- **Notable properties:**
 - Contains panic path
 - Has conditional branches

1.3 Locals

Local	Type	Notes
0	() (0 bytes, align 1)	Return place
1	WithParam<u32> (16 bytes, align 8)	
2	WithParam<u64> (16 bytes, align 8)	
3	std::result::Result<u8, usize> (16 bytes, align 8)	
4	Uint(Usize)	
5	std::result::Result<u64, u8> (16 bytes, align 8)	
6	Uint(U64)	
7	Uint(Usize)	
8	std::option::Option<usize> (16 bytes, align 8)	
9	Bool	
10	Uint(U64)	
11	Uint(U64)	
12	()	

1.4 Control-Flow Overview



1.5 Basic Blocks

1.5.1 bb0 — entry

Entry point of the function.

MIR	Annotation
_1 = WithParam(42, 42)	Construct aggregate
_2 = WithParam(42, 42)	Construct aggregate
_4 = _1.1	Copy value
_3 = Result::Err(move _4)	Construct aggregate
_6 = _2.0	Copy value
_5 = Result::Ok(move _6)	Construct aggregate
→ _8 = err(_3) → bb1	Call err

1.5.2 bb1

MIR	Annotation
→ _7 = unwrap(move _8) → bb2	Call unwrap

1.5.3 bb2

MIR	Annotation
_10 = _7 as RigidTy(Uint(U64))	Integer conversion
→ _11 = unwrap(_5) → bb3	Call unwrap

1.5.4 bb3 — branch point

MIR	Annotation
_9 = move _10 == move _11	Equal operation
→ switch(move _9) [0→bb5; else→bb4]	Branch on move _9

1.5.5 bb4 — return / success

Normal return path.

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

1.5.6 bb5 — panic path

Panic/diverging path.

MIR	Annotation
<code>→ _12 = 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

