

Best practices

Enable overflow checks

It's usually helpful to panic on integer overflow. To enable it, add the following into your Cargo.toml file:

```
[profile.release] overflow-checks = true
```

Use require!

early

Try to validate the input, context, state and access using `require!` before taking any actions. The earlier you panic, the more [gas](#) you will save for the caller.

[near_bindgen]

```
impl
Contract
{ pub
fn
set_fee ( & mut
self , new_fee :
Fee )
{ require! ( env :: predecessor_account_id ( )
==
self . owner_id ,
"Owner's method" ) ; new_fee . assert_valid ( ) ; self . internal_set_fee ( new_fee ) ; } }
Note : If you want debug information
in the panic message or if you are using an SDK version before 4.0.0-pre.2 , the Rust assert! macro can be used instead
of require! .
```

[near_bindgen]

```
impl
Contract
{ pub
fn
set_fee ( & mut
self , new_fee :
Fee )
{ assert_eq! ( env :: predecessor_account_id ( ) ,
self . owner_id ,
"Owner's method" ) ; new_fee . assert_valid ( ) ; self . internal_set_fee ( new_fee ) ; } }
```

Use log!

Use logging for debugging and notifying user.

When you need a formatted message, you can use the following macro:

`log! ("Transferred {} tokens from {} to {}" , amount , sender_id , receiver_id) ;` It's equivalent to the following message:

`env :: log_str (format! ("Transferred {} tokens from {} to {}" , amount , sender_id , receiver_id) . as_ref ()) ;`

ReturnPromise

If your method makes a cross-contract call, you probably want to return the newly created `Promise`. This allows the caller (such as a near-cli or near-api-js call) to wait for the result of the promise instead of returning immediately. Additionally, if the promise fails for some reason, returning it will let the caller know about the failure, as well as enabling NEAR Explorer and other tools to mark the whole transaction chain as failing. This can prevent false-positives when the first or first few transactions in a chain succeed but a subsequent transaction fails.

E.g.

[near_bindgen]

`impl`

`Contract`

`{ pub`

`fn`

`withdraw_100 (& mut`

`self , receiver_id :`

`AccountId)`

`->`

`Promise`

`{ Promise :: new (receiver_id) . transfer (100) }`

Reuse crates from near-sdk

near-sdk re-exports the following crates:

- borsh
- base64
- bs58
- serde
- serde_json

Most common crates include `borsh` which is needed for internal STATE serialization and `serde` for external JSON serialization.

When marking structs with `serde::Serialize` you need to use `#[serde(crate = "near_sdk::serde")]` to point `serde` to the correct base crate.

`/// Import borsh from near_sdk crate use`

`near_sdk :: borsh :: { self ,`

`BorshDeserialize ,`

`BorshSerialize } ; /// Import serde from near_sdk crate use`

`near_sdk :: serde :: { Serialize ,`

```
Deserialize } ;
```

```
/// Main contract structure serialized with Borsh
```

[near_bindgen]

[derive(BorshDeserialize, BorshSerialize, PanicOnDefault)]

```
pub
```

```
struct
```

```
Contract
```

```
{ pub pair :
```

```
Pair , }
```

```
/// Implements both serde and borsh serialization. /// serde is typically useful when returning a struct in JSON format for a frontend.
```

[derive(Serialize, Deserialize, BorshDeserialize, BorshSerialize)]

[serde(crate =

```
"near_sdk::serde" )] pub
```

```
struct
```

```
Pair
```

```
{ pub a :
```

```
u32 , pub b :
```

```
u32 , }
```

[near_bindgen]

```
impl
```

```
Contract
```

```
{
```

[init]

```
pub
```

```
fn
```

```
new ( pair :
```

```
Pair )
```

```
->
```

```
Self
```

```
{ Self
```

```
{ pair , } }  
  
pub  
  
fn  
  
get_pair ( self )  
  
->  
  
Pair  
  
{ self . pair } }
```

std::panic!

vsenv::panic

- std::panic!
- panics the current thread. It uses format!
- internally, so it can take arguments.
- SDK sets up a panic hook, which converts the generated PanicInfo
- from panic!
- into a string and uses env::panic
- internally to report it to Runtime.
- This may provide extra debugging information such as the line number of the source code where the panic happened.
- env::panic
- directly calls the host method to panic the contract.
- It doesn't provide any other extra debugging information except for the passed message.

Use workspaces

Workspaces allow you to automate workflows and run tests for multiple contracts and cross-contract calls in a sandbox or testnet environment. Read more, [workspaces-rs](#) or [workspaces-js](#) . [Edit this page](#) Last updated on Aug 24, 2022 by [Damián Parrino](#) Was this page helpful? Yes No

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