

# NFT Marketplace Specification

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## Abstract

This document describes a simple NFT marketplace escrow validator designed for the Cardano blockchain. This validator allows users to create and cancel sale orders for NFTs at a predetermined fixed price in any Cardano native tokens. The implementation of this validator will be carried out across multiple programming languages, compiled into UPLC, and tested with a uniform test suite. While the validator is engineered with security in mind, certain functionalities necessary for a production environment may be absent.

## 1 Introduction

The validator allows users to lock a certain token in the script-owned UTxO, with datum specifying the NFT to be sold, and a price in any Cardano native token, address where the seller will receive the payment, and a key that can cancel the sale order and return the locked token to the seller.

## 2 Validator

The validator is not parameterized. Despite validator being intended as NFT marketplace, it operates on the UTxO level thus can be used to sell any bundle of tokens.

### 2.1 Data Types

**data** Redeemer = Buy | Cancel

```
data Datum = Datum
  { price :: Value
  , seller :: Address
  , cancelKey :: PubKeyHash
  }
```

### 2.2 Validation Checks

For a transaction to be valid, the following checks must pass:

#### Case 1: Cancel

- Transaction is signed by `cancelKey`.

#### Case 2: Buy

- `price` is paid to `seller` with a UTxO reference in inline datum. We are attaching a unique datum to prevent double satisfaction attack.