

Bitgold Design Document



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Glossary of Terms

Term	Meaning
UML	Unified Modelling Language

Document History

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Introduction

This is the design document for Bitgold, which is a small library for game developers to add Bitcoin transactions to video games.

Bitcoin is a better medium for in-game transactions compared with credit cards, store credit and PayPal because it likely has lesser transaction fees, is quick to make national/international monetary transfers, is independent to an arbitrary country's economic value, and can be refunded for money at any time. Despite this, no library like Bitgold exists.

Bitgold is an extension of a research paper also written by the author, to fulfil the requirements for Software Development 4 of the Bachelor of Games and Virtual Worlds.

Functionality/Requirements

Functional

Bitgold will be capable of:

- performing (not verifying) Bitcoin transactions within and without a game, between the Bitcoin addresses of the player and developer (the player must provide their Bitcoin address and private key)
- converting in-game (and out-of-game) costs to their current Bitcoin value (e.g. converting AU\$0.99 to its value in Bitcoins) before transactions complete

Non-functional

Bitgold will be:

- small - less than 5 files (not many files are required for the functionality)
- secure - developer and player's Bitcoin must be protected from unintended access, and handled properly
- easy and simple to use - easy for developers to integrate into game
- fast - transactions must take less than 10 seconds, to ensure that the player can quickly transition between the payment process and the game
- up to date - currency values used by Bitgold will be current, to ensure the developer and player are getting the correct value for their Bitcoin and money

Design

Components

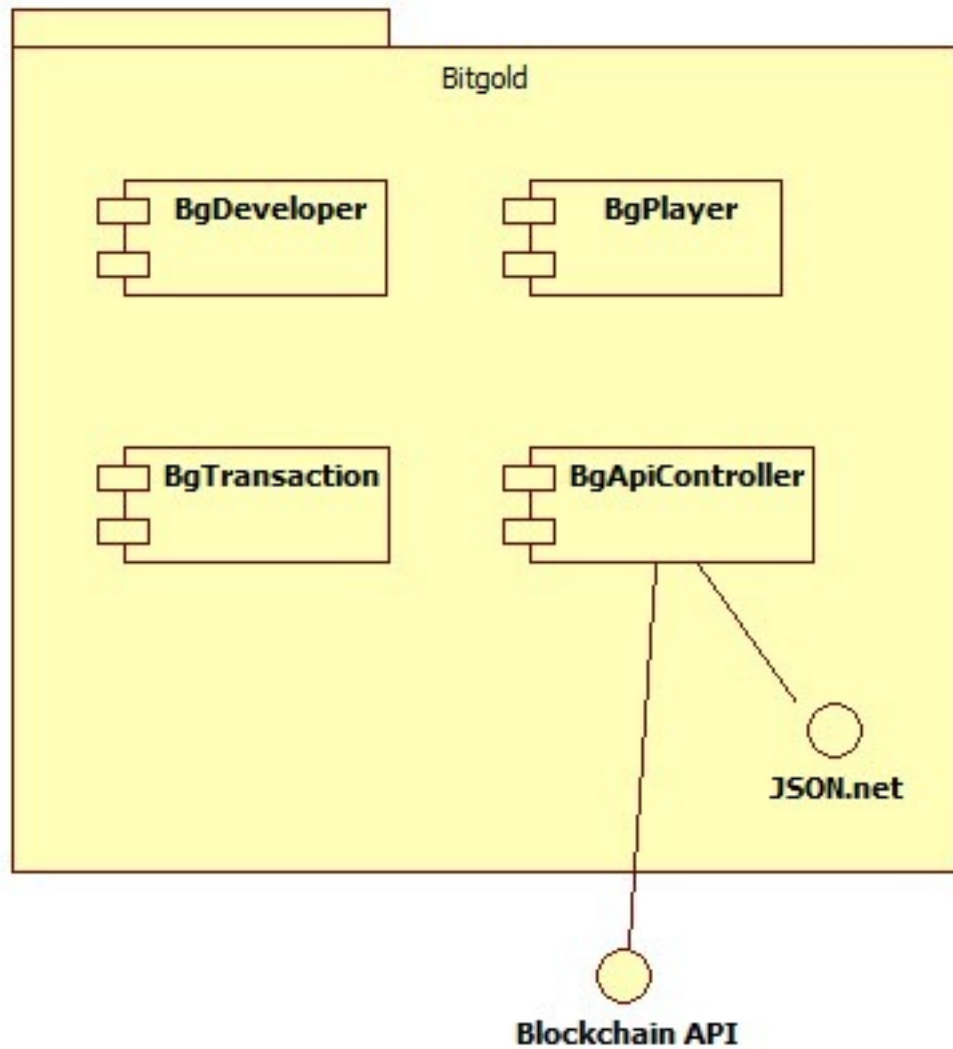


Figure 1: UML Component Diagram

Classes

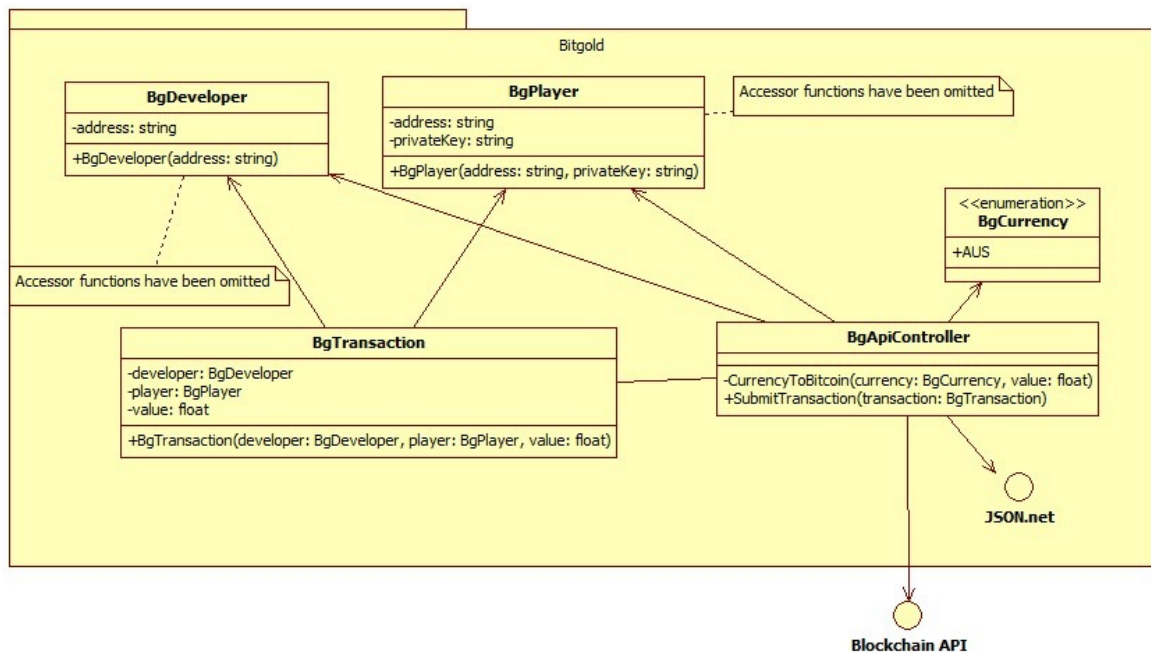


Figure 2: UML Class Diagram

Bibliography