Messaging Specification

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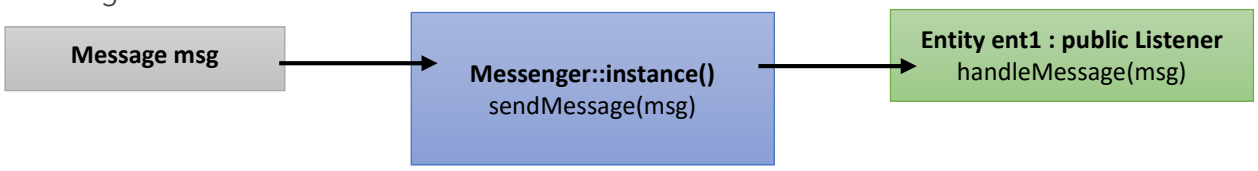
Below is my messaging system specification as designed for and used in my Zorkish game implementation.

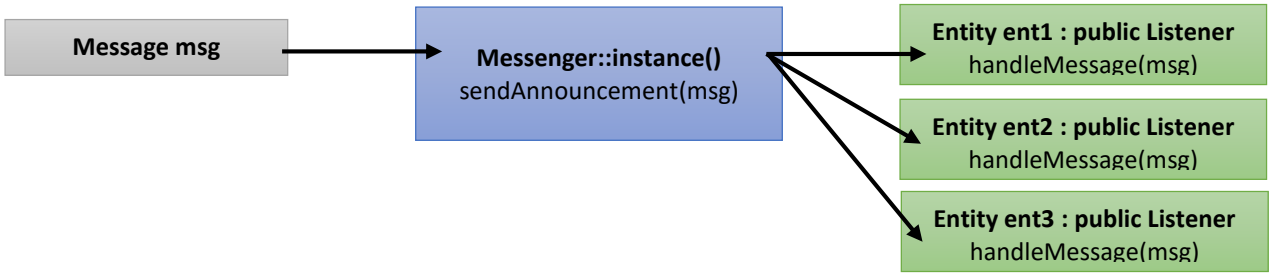
The Flow

Here is a basic diagram showing the flow of a message, as it gets sent to the Messenger for forwarding to all listeners.

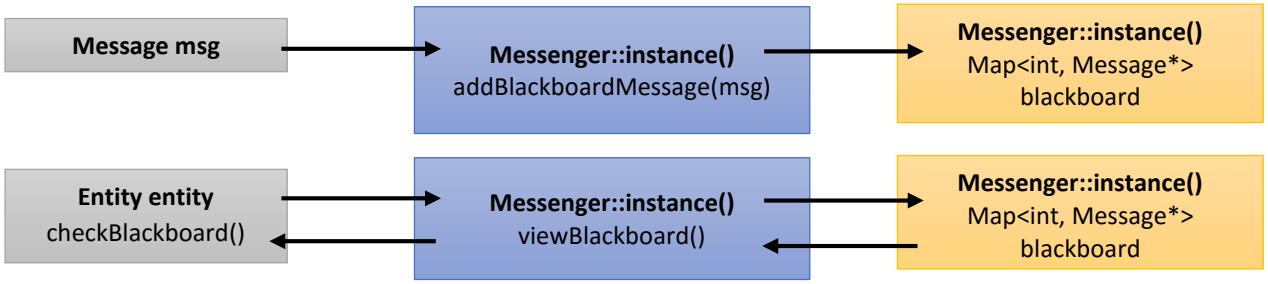
Message



Announcement



Blackboard



Sending a Message

Messages can be sent from anywhere within the project by creating a Message object and passing it as a pointer to the `sendMessage(Message* msg)` method of the Messenger singleton.

```
Messenger::instance().sendMessage(new Message(Tag::DAMAGE, "10"));
```

Sending an Announcement

Messages can be sent from anywhere within the project as an announcement by using the `sendAnnouncement(Message* msg)` method. This will send the announcement to all registered listeners.

```
Messenger::instance().sendAnnouncement(new Message(Tag::HEALTH, "5"));
```

Sending a Blackboard Message

A blackboard message is sent the same way as a normal message is, only by using the `addBlackboardMessage(Message* msg)` method. This will add the message to the blackboard map which can be viewed later by any entity.

```
Messenger::instance().addBlackboardMessage(new Message(Tag::ALL, cmds[2]));
```

Viewing the Blackboard

To view messages left on the blackboard an entity can use the `viewBlackboard()` function to get the map of all the messages and read them as required.

```
map<int, Message*> msgs = Messenger::instance().viewBlackboard();
```

Receiving a Message/Announcement

Messages are received by the `handleMessage(Message* msg)` method in any class that inherits from the `Listener` class.

```
void Entity::handleMessage(Message* _msg)
```

Message Tagging

Each message has a `Tag` that can then be used by the listeners to determine whether they care about the message or not.

```
enum Tag { ALL, HEALTH, DAMAGE };
```

Message Contents

A message consists of a unique id (an integer) which is assigned to each message by the `Messenger`, a Tag which identifies who or what should care about this message and what the message will contain and finally the contents of the message itself in string format.

```
private:
    int id;
    Tag tag;
    string content;
```

Registering as a Listener

To register as a listener the item just needs to be added to the Messenger instance through the `addListener(Listener* listener)` method. Once added as a listener that object will get every message sent out by the Messenger and be able to determine whether or not it should care about it.

```
Messenger::instance().addListener(player);
```

Sender Details

Currently my messaging system does not pass through any data regarding who sent the message or where it came from.