

Abhi Jagdev - V00746164

November 16, 2015

## SENG 330 - Assignment 2

- Github ————— <https://github.com/ajagdev/seng330-a2>
- Included “INSTALL.txt”

### INSTALL

#### 1. Install boost

OSX: brew install boost

Windows: Download and install from <http://www.boost.org/>

#### 2. Run make

#### 3. Run the resulting executable 'prototype'

./prototype

- Prototype Design Pattern - “You should have at least one base class and two derived classes from it and you should be able to create instances at run-time by prompting the user for a string for the type and the instance name. ”

```
//item base class
class GymItem {
public:
    virtual GymItem* clone() = 0;
    virtual void start_machine() = 0;
    virtual void serialize() = 0;
};
...
```

```

...
...
//Treadmill class
class Treadmill : public GymItem {
public:
    GymItem* clone() {
        return new Treadmill;
    }
    int currentSpeed = 0;
    int goalSpeed = 0;
    void start_machine() {
        std::cout << "Treadmill starting up. Hold on to your love handles\n";
        currentSpeed = 1;
        goalSpeed = 10;
    }
    void serialize(){
    }
};

//bike class
class StationaryBike : public GymItem {
public:
    GymItem* clone() {
        return new StationaryBike;
    }
    int currentSpeed = 0;
    int goalSpeed = 0;
    int seatHeight = 0;
    void start_machine() {
        std::cout << "Stationary Bike starting up. Press + to increase resistance
\n";

```

```

        currentSpeed = 1;
        goalSpeed = 10;
        seatHeight = 5;
    }
    void serialize(){
    }
};

```

- Google Protocol Buffers
- Doxygen

Image 1



Image 2



Image 3

## Gym Prototype

Main Page	Related Pages	<b>Classes</b>	Search
Class List	Class Index	Class Hierarchy	

### Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

[detail level 1 2]

- Factory
  - GymItem
    - StationaryBike
    - Treadmill

Generated by [doxygen](#) 1.8.11

Image 4

## Gym Prototype

Main Page	Related Pages	<b>Classes</b>	Search
Class List	Class Index	Class Hierarchy	

### StationaryBike Class Reference

Public Member Functions | List of all members

Inheritance diagram for StationaryBike:

```

graph BT
    StationaryBike --> GymItem
  
```

#### Public Member Functions

GymItem *	clone ()
void	start_machine ()

The documentation for this class was generated from the following file:

- prototype.cpp

Generated by [doxygen](#) 1.8.11

Image 5

## Gym Prototype

Main Page	Related Pages	<b>Classes</b>	Search
Class List	Class Index	Class Hierarchy	

### GymItem Class Reference abstract

Public Member Functions | List of all members

Inheritance diagram for GymItem:

```

graph BT
    StationaryBike --> GymItem
    Treadmill --> GymItem
  
```

#### Public Member Functions

virtual GymItem *	clone ()=0
virtual void	start_machine ()=0

The documentation for this class was generated from the following file:

- prototype.cpp

Generated by [doxygen](#) 1.8.11

- Google Testing Framework ————— Missing