Abhi Jagdev - V00746164
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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(){

        }

    };
```
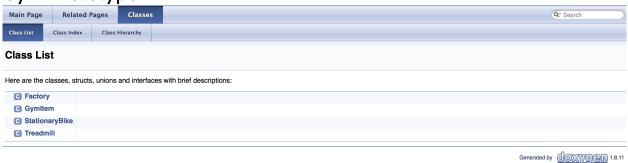
- Google Protocol Buffers

- Doxygen

Image 1

Image 2

Image 3

Gym Prototype

Class Hierarchy

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

[detail level 1 2]

- **C** Factory
- ▼ **C** GymItem
  - **C** StationaryBike
  - **C** Treadmill

Generated by doxygen 1.8.11

Image 4

Gym Prototype

Public Member Functions | List of all members

StationaryBike Class Reference

Inheritance diagram for StationaryBike:

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

Public Member Functions | List of all members

GymItem Class Reference `abstract`

Inheritance diagram for 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