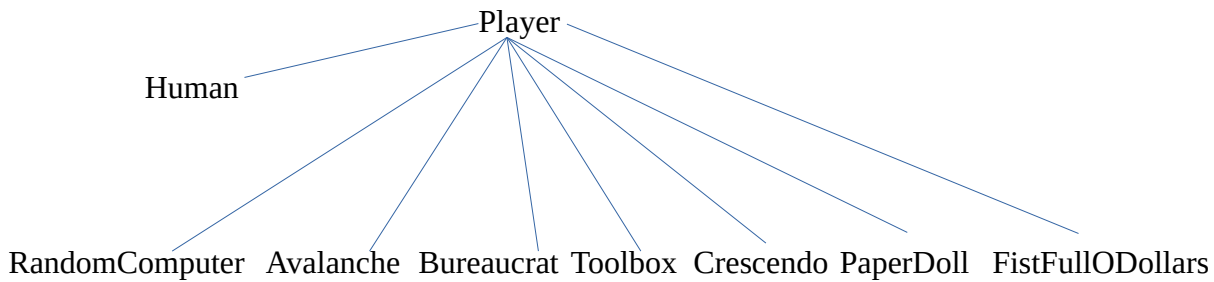


Assignment 3 Design

By 1686498

Hierarchy:



Player

string name – stores name
String moves – string containing moves
int numberOfWins – stores the number of wins

String getName – returns name
void setName – sets the name
virtual Char getMoves – returns move
virtual void incrementNumberOfWins – adds 1 to the win count
virtual int getNumberOfWins – returns the number of wins
virtual void resetNumberOfWins – resets the number of wins

- Top of our hierarchy
- Has a name so can be identified
- have a moves state so that the moves can be stored
- have a numberOfWins state which allows for easy comparison to see who wins
- have a behaviour which allows me to access the move they wish to play
- have a way to increment the number of wins during the round and then reset the number of wins for the next round
- have a way to access numberOfWins to allow for comparison

Human

void setMoves – sets moves according to input

- Has set moves function since it will take user input
- Inherits from Player

Assignment 3 Design

By 1686498

Avalanche

- Always chooses rock
- inherits from player

Bureaucrat

- Always chooses paper
- inherits from player

Crescendo

- Chooses move in the order paper, scissors, rock
- inherits from player

FistFullODollars

- Chooses moves in the order rock, paper, paper
- inherits from player

PaperDoll

- Chooses moves in the order paper, scissors, scissors
- Inherits from Player

Assignment 3 Design

By 1686498

RandomComputer
void setMove – chooses a random move

- Chooses a random move and needs a set move functions
- inherits from Player

Toolbox

- Always chooses scissors
- inherits from player

Referee
Int rounds – will be 5
Player round – will take in 2 players and return the winner of that round

- Sets the number of rounds to be 5
- plays the round and determines who is the winner of that round

Tournament
Player winner – stores the winner vector round 1 – stores all players vector round 2 – stores winning players vector round 3 – stores last 2 players
Player driver – will take in all 8 players and will return winner player getWinner – returns the winner

- Has the winner stored in memory
- stores winners of each round as we go through
- driver will run and take in all the players and the referee and will then return who the winner is, will run referee behaviour to see who wins

Main:

Assignment 3 Design

By 1686498

- will create a vector of player objects
- will create a string for the input
- will check the string and create each different player based on input and then put them in the vector
- the player vector will then be inputted into tournament
- the driver will then be run
- the winner will be outputted

Testing:

I will test for a few different inputs

Input 1:

Avalanche Bureaucrat Bureaucrat Toolbox Toolbox Crescendo Crescendo FistFullODollars

Output 1:

Toolbox

Input 2:

Avalanche Toolbox

Output 2:

Avalanche

Input 3:

Crescendo PaperDoll Toolbox Toolbox FistFullODollars Avalanche Avalanche PaperDoll

Output 3:

Toolbox

Input 4:

Avalanche Toolbox Crescendo Bureaucrat Bureaucrat PaperDoll PaperDoll FistFullODollars

Output 4:

Avalanche

Input 5:

Avalanche Avalanche Avalanche Avalanche Avalanche Bureaucrat Avalanche Avalanche

Output 5:

Bureaucrat