ADDS Practical 3 Design

Hideki Yoshinaga | a1658945

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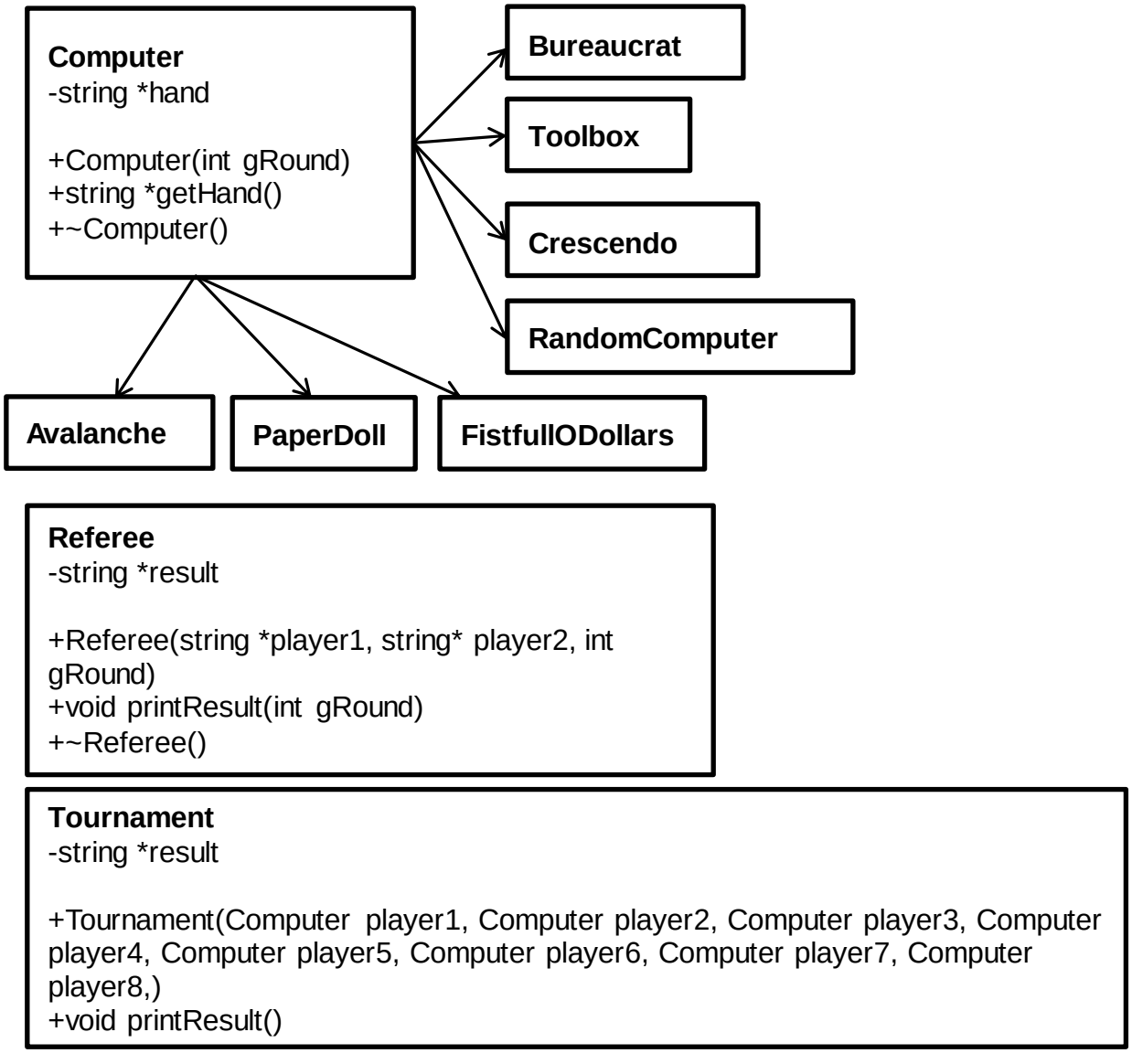
UML Diagram



Description

Computer

This class automatically generate an array of “R”s “P”s and “S”s with length of “gRound” and store it. GetHand() will return the array.

-string *hand : this array stores all computer choices in it.

+computer(int gRound) :this is the human constructor, takes the rounds of games as a parameter. Then, the hand array with the size of game rounds is dynamically allocated and initialised to “R”.
+string *getHand() : this function will return the hand array.

+~computer() : this is the computer destructor.

Referee

This class takes 2 string array and compare their elements then store the result in a new array with length of “gRound”. Results are “Win(W)”or“Lose(L)” or “Tie(T)”.
printResult() will print out all of the element in one line with spaces in between.

-string *result : This is an array for storing the results of the game (W,L,T)

+referee(string *player1, string *player2, int gRound) : The referee constructor takes 2 players choices(array) and the rounds of game played as parameter. Elements in both array are compared one by one in a for loop, the results(W,L,T) are stored in result array.

+void printResult(int gRound) : This function takes game rounds as parameter and print out all elements in result array with a space in between.

+~referee() : this is the referee destructor.

Tournament

This class take 8 Computer object and compete them in a tournament the name of the winner computer can be displayed with its function.

-string result : stores the winner’s namre of the tournament

+Tournament(Computer player1, Computer player2, Computer player3, Computer player4, Computer player5, Computer player6, Computer player7, Computer player8,) : this is the tournament constructor which takes 8 Computer objects and compete them in a tournament. Winner’s name will be stored in result.

+void printResult() : print out the winner’s name.

main

The main function will ask user to input 8 names of Computers, then Computer objects are created according to those names. Tournament will be created with those 8 computer objects and winner’s name is printed with printResult function which is inside tournament class.

Testing

1. input: Avalanche Bureaucrat Bureaucrat Toolbox Toolbox Crescendo Crescendo FistfullODollars

   output: Toolbox

2. input: Avalanche Avalanche Avalanche Avalanche Avalanche Avalanche Avalanche Avalanche

   output: Avalanche

3. input: Avalanche Avalanche Avalanche Avalanche Avalanche Bureaucrat Avalanche Avalanche

   output: Bureaucrat