# ADDS Prac 2 Design

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# **UML Diagram**

Tournament	Computer	Referee
- match[8]: computer - scoreP1: int - scoreP2: int	- games: int - *strategy: string - type: string	- *strategy1: string - *strategy2: string - games: int
+ Tournament(string, string, string, string, string, string, string) + compete: void + createPlayer(int,string): void	+ computer(int) + generateStrat(int): virtual + getGames(): int + *getStrat(): string + getType(): string	- *results: string  + referee(string*, string*, int) + compare(): void + printResults(): void + getResults(): string

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Avalanche: public computer	Bureaucrat: public computer	Toolbox: public computer
- generateStrat(int): void	- generateStrat(int): void	- generateStrat(int): void
+ Avalanche() + Avalanche(int)	+ Bureaucrat() + Bureaucrat(int)	+ Toolbox() + Toolbox(int)
Crescendo: public computer	PaperDoll: public computer	FistfullODollars: public computer
- generateStrat(int): void	- generateStrat(int): void	- generateStrat(int): void
+ Crescendo() + Crescendo(int)	+ PaperDoll() + PaerDoll(int)	+ FistfullODollars() + FistfullODollars(int)

# **Description**

## Computer

Generates a strategy of the specified size (which will be size 5 for this program).

### Referee

Compares the strategy of the Human and Computer and outputs the results as either a win, loss or tie

#### **Tournament**

The main function takes an input and checks if the input is of an acceptable format, then passes it to Human. It then passes information from Human and Computer to Referee.

### RandomComputer

Generates a random number which is assigned to either rock, paper or scissors.

#### **Avalanche**

Fills an array with rock.

#### **Bureaucrat**

Fills an array with paper.

#### **Toolbox**

Fills an array with scissors.

#### Crescendo

Iterates over an array filled with paper, scissors, rock, to fill a different array.

### **PaperDoll**

Iterates over an array filled with paper, scissors, scissors, to fill a different array.

#### **FistfullODollars**

Iterates over an array filled with rock, paper, paper, to fill a different array.

#### Main

The main function takes an input and checks if the input is of an acceptable format, then passes it to Human. It then passes information from Human and Computer to Referee.

# **Testing**

Input: Avalanche Bureaucrat Bureaucrat Toolbox Toolbox Crescendo Crescendo FistfullODollars Expected Output: Toolbox

Input: Crescendo Toolbox PaperDoll FistfullODollars Crescendo Toolbox PaperDoll

FistfullODollars

**Expected Output: Crescendo** 

Input: Avalanche Avalanche

**Expected Output: Bureaucrat**