

# Server (typed)

Monday, March 2, 2020 7:14 PM

Δ implements serializable

ChildServer implements Runnable

(-) AbstractPlayer player  
 (-) ParentServer parent  
 (-) Connection connection  
 (-) String turnMessage = ""  
 (-) boolean firstCall = true

(+) ChildServer(AbstractPlayer player, ParentServer parent)  
 (+) ChildServer(AbstractPlayer player, Connection playerConnection, ParentServer parent)  
 (+) void setTurnMessage(String turnMessage)  
 (+) Connection getPlayerConnection()  
 (+) void setPlayerConnection(Connection playerConnection)  
 (+) ParentServer getParentServer()  
 (+) void setParentServer(ParentServer parent)  
 (+) AbstractPlayer getPlayer()  
 (+) void run()

ServerProgram

(+) static void main(String[] args)

BoardGenerator

(-) Board board

(+) Board getBoard()

(+) void createBoard()

ParentServer implements Runnable

(-) ServerSocket serverSocket = null  
 (-) List<ChildServer> children  
 (-) Board board  
 (-) Map<String, List<OrderInterface>> orderList  
 (-) ExecutorService threads  
 (-) int MAX\_PLAYERS  
 (-) double TURN\_WAIT\_MINUTES  
 (-) double START\_TURN\_MINUTES  
 (-) StringBuilder turnResults  
 (-) int turnNumber = 1

(+) ParentServer()  
 (+) ParentServer(int port) throws IOException  
 (+) ServerSocket getServerSocket()  
 (+) List<ChildServer> getChildren()  
 (+) double getTURN\_WAIT\_MINUTES()  
 (+) void setMAX\_PLAYERS(int MAX\_PLAYERS)  
 (+) void setTURN\_WAIT\_MINUTES(double TURN\_WAIT\_MINUTES)  
 (+) void setSTART\_WAIT\_MINUTES(double START\_WAIT\_MINUTES)  
 (+) void waitingForConnections() throws IOException  
 (+) Board getBoard()  
 (+) void setBoard(Board board)  
 (+) Map<String, List<OrderInterface>> getOrderMap()

```
(+) void addPlayer(ChildServer c)
(+) void createStartingGroupHelper(char groupName, int iStart, int iEnd, List<Region> regionList)
(+) void createStartingGroups()
(+) synchronized boolean assignGroups(String groupName, AbstractPlayer player)
(+) void callThreads() throws InterruptedException
(+) boolean playerHasARegion(AbstractPlayer player)
(+) synchronized void addOrdersToMap(List<OrderInterface> order)
(+) void applyOrder()
(+) void applyOrdersList(List<OrderInterface> orders)
(+) void growUnits()
(+) void playGame()
(+) void run()
```

## Shared (typed)

Monday, March 2, 2020 3:38 PM

Implements Serializable Δ

Board Δ
(-) List<Region> regions
(-) static final long serialVersionUID = 7L
(+) Board()
(+) Board(List<Region> regionList)
(+) List<Region> getRegions()
(+) void setRegions(List<Region> regionList)
(+) Region getRegionByName(String name)
(+) int getNumRegionsOwned(AbstractPlayer player)
(+) Map<AbstractPlayer, List<Region>> getPlayerToRegionMap()
(+) Set<AbstractPlayer> getPlayerSet()

<<MessageInterface<T>>> Δ
(+) T unpacker()

Region Δ
(-) static final long serialVersionUID = 1L
(-) AbstractPlayer owner
(-) String name
(-) Unit units
(-) List<Region> adjRegions
(+) Region()
(+) Region(String n)
(+) Region(AbstractPlayer p, Unit u)
(+) void assignRegion(AbstractPlayer p, Unit u)
(+) void setOwner(AbstractPlayer p)
(+) void setUnits(Unit u)
(+) void setAdjRegions(List<Region> adj)
(+) void setName(String n)
(+) AbstractPlayer getOwner()
(+) Unit getUnits()
(+) List<Region> getAdjRegions()
(+) String getName()

Unit Δ
(-) Integer units
(-) static final long serialVersionUID = 2L
(+) Unit()
(+) Unit(Integer u)
(+) Integer getUnits()
(+) void setUnits(Integer u)

ConfirmationMessage<Boolean>
(-) boolean message
(-) static final long serialVersionUID = 4L
(+) ConfirmationMessage(boolean m)
(+) Boolean unpacker()
(+) boolean getMessage()

StringMessage<String>
(-) String message
(-) static final long serialVersionUID = 3L
(+) StringMessage(String m)
(+) String unpacker()
(+) String getMessage()

<<OrderInterface>> Δ
(+) int getPriority()
(+) String doSourceAction()
(+) String doDestinationAction()
(+) void convertOrderRegions(Board board)

AbstractPlayer Δ
(#) String name
(#) boolean isPlaying
(#) Boolean isWatching
(-) static final long serialVersionUID = 5L
(+) String getName()
(+) void setName(String name)
(+) boolean isPlaying()
(+) void setPlaying(boolean isPlaying)
(+) Boolean isWatching()
(+) void setWatching(boolean isWatching)
(+) int compareTo(AbstractPlayer p)

Abstract SourceDestinationOrder
(-) static final long serialVersionUID = 8L
(#) Region source
(#) Region destination
(#) Unit units
(+) String setDestination(Region destination)
(+) Region getDestination()
(+) String setSource(Region source)
(+) Region getSource()
(+) Unit getUnits()
(+) abstract void doSourceAction()
(+) abstract void doDestinationAction()
(+) abstract int getPriority()
(+) void convertOrderRegions(Board board)

Abstract DestinationOrder
(-) static final long serialVersionUID = 10L
(#) Region destination
(#) Unit units
(+) String setDestination(Region destination)
(+) Region getDestination()
(+) Unit getUnits()
(+) String doSourceAction()
(+) abstract void doDestinationAction()
(+) abstract int getPriority()
(+) void convertOrderRegions(Board board)

HumanPlayer
(-) static final long serialVersionUID = 6L
(+) HumanPlayer()
(+) HumanPlayer(String name)

MoveOrder
(-) static final long serialVersionUID = 9L
(+) MoveOrder(Region s, Region d, Unit u)
(+) int getPriority
(+) String doSourceAction()
(+) String doDestinationAction()

AttackOrder
(-) static final long serialVersionUID = 12L
(+) AttackOrder(Region attacker, Region defender, Unit attackingUnits)
(+) int getPriority()
(+) String doSourceAction()
(+) String doDestinationAction()
(-) boolean isWinner(Region s, Region d, Unit u)
(-) Region rollHelper(Region defRegion, Region attackRegion)

PlacementOrder
(-) static final long serialVersionUID = 11L
(+) PlacementOrder(Region d, Unit u)
(+) String doDestinationAction()
(+) String doAction(Region d, Unit u)
(+) int getPriority()

ValidateHelper
(-) ValidatorInterface<AttackOrder> attackValidator (-) ValidatorInterface<MoveOrder> moveValidator (-) ValidatorInterface<PlacementOrder> placementValidator (-) Board tempBoard (-) AbstractPlayer player
(+) ValidatorHelper(AbstractPlayer player, Board currentBoard) (+) ValidatorHelper(AbstractPlayer player, Unit u, Board currentBoard) (+) boolean allOrdersValid(List<OrderInterface> orders) (+) boolean allPlacementsValid(List<OrderInterface> placements)

<<ValidatorInterface<T>>>
(+) boolean validateOrders(List<T> orders) (+) boolean validateUnits(List<T> orders) (+) boolean validateRegions(List<T> orders)

AttackValidator
(-) Board tempBoard (-) AbstractPlayer player
(+) AttackValidator(AbstractPlayer player, Board boardCopy) (+) boolean isValidAttack(AttackOrder a) (+) boolean validateRegions(List<AttackOrder> attackList) (+) boolean validateOrders(List<AttackOrders> attackList)

MoveValidator
(-) Board tempBoard (-) AbstractPlayer player
(+) MoveValidator(AbstractPlayer player, Board boardCopy) (-) boolean hasValidPath(Region start, Region end) (+) boolean isValidMove(MoveOrder a) (+) boolean validateOrders(List<MoveOrder> moveList) (+) boolean validateRegions(List<MoveOrder> moveList) (+) boolean validateUnits(List<MoveOrder> m)

PlacementValidator
(-) AbstractPlayer p (-) Unit playerUnits (-) Board tempBoard
(+) PlacementValidator(AbstractPlayer p, Unit u, Board boardCopy) (+) boolean isValidPlacement(PlacementOrder p, AbstractPlayer ap) (+) boolean validateRegions(List<PlacementOrder> placementList) (+) boolean validateUnits(List<PlacementOrder> orders)

Constants
(+) static final double START_WAIT_MINUTES = 2.5 (+) static final double TURN_WAIT_MINUTES = 5.0 (+) static final int UNIT_START_MULTIPLIER = 3 (+) static final int MAX_PLAYERS = 5 (+) static final int MAX_REGIONS = 12 (+) static final int DEFAULT_PORT = 12345 (+) static final int ATTACK_PRIORITY = 5000 (+) static final int MOVE_PRIORITY = 1000 (+) static final int PLACEMENT_PRIORITY = 1

Connection Δ
(-) static final long serialVersionUID = 11L (-) Socket socket = null (-) ObjectOutputStream outputStream = null (-) ObjectInputStream inputStream = null
(+) Connection() (+) Connection(Socket socket) (+) Connection(ObjectInputStream inputStream, ObjectOutputStream outputStream) (+) <T> void sendObject(T object) throws IOException (+) <T> T receiveObject() throws IOException, ClassNotFoundException (+) ObjectInputStream getInputStream() (+) ObjectOutputStream getOutputStream() (+) void closeAll() (+) void setInputStream(ObjectInputStream inputStream) (+) void setOutputStream(ObjectOutputStream outputStream) (+) Socket getSocket() (+) void setSocket(Socket socket) (+) void getStreamFromSocket() throws IOException

DeepCopy
(+)static Object deepCopy(Object obj)

DeepCopyFailure Exception extends RuntimeException
(-) static final long serialVersionUID = 13L (+) final Exception exn
(+) DeepCopyFailureException(Exception exn) (+) Exception getCause()

# Client (typed)

Monday, March 2, 2020 4:08 PM

