Team(Interface) Player(Interface) + addPlayer(Player): + getFirstName(): String + makeTeam(): (field: team) + getLastName(): String + getTeam(): String(field: team) + getDateOfBirth(): LocalDate + getPreferredPosition(): Position + getLineUp(): String (field: lineup) + getSkillLevel(): int + getBench(): String (field: bench) + getJerseyNumber(): int PlayerImpl(class) TeamImpl(class) - firstName: String - candidate[9..20]: TreeSet<Player> Position(enum) - lastName: String - lineUp[7..7]: Map<Position, TreeSet<Player>> - dateOfBirth: LocalDate - bench[2..13]: TreeSet<Player> - preferredPosition: Position <<constant>>MAXIMUM_NUMBER: int - skillLevel: int <<constant>>NINIMUM_NUMBER: int - jerseyNumber: int <<constant>>GOALIE_SLOTS: int <<constant>>MAXIMUM_NUMBER: int <<constant>>DEFENDER_SLOTS: int + GOALIE[1] <<constant>>NINIMUM_NUMBER: int <<constant>>MIDFIELDER_SLOTS: int + DEFENDER[2..2] <<constant>>MAXIMUM_AGE: int <<constant>>FORWARD_SLOTS: int + MIDFIELDER[3..3] <<constant>>NINIMUM_AGE: int + FORWARD[1..1] <<constant>>MAXIMUM_SKILL_LEVEL: int + addPlayer(String, String, LocalDate, Position, int): <<constant>>NINIMUM_SKILL_LEVEL: int - dropPlayer(): + getFirstName(): String + makeTeam(): + getLastName(): String + getTeam(): String + getDateOfBirth(): LocalDate - makeLineUp(): + getPreferredPosition(): Position + getLineUp(): String (field: lineup) + getSkillLevel(): int - makeBench(): + getJerseyNumber(): int + getBench(): String (field: bench) # assignJerseyNumber(): + toString(): String

The general idea of the design is:

- 1.TeamImplal takes ojects that created by Player, and stores them in corresponding lists as fields;
- 2. List candidate is a TreeSet, which is sorted by player's first name; list lineUp is a TreeMap, in which key is enum Position and values are TreeSet of players;
- 3. The user can use method addPlayer to change the size of team, and use makeTeam to assign jersey numbers to Players. There are three private methods, dropPlayer(), makeLineUp and makeBench, which are contained in getter;
- 4. lineUp is created by positions with certain slots, candidate list is firstly created by sorted level skill, if the one with the highest skill prefer defender, it goes to defender in lineUp until defenders are full, then he would be in a waitList. If there are some slots in the group midfielders, the highest skilled one in the waitList we be at that slot.

Main

+ main(String):