Renderer # static constexpr int CELL_SIZE + virtual ~Renderer() + GamePixmapItem * renderGame Objects(QList < QMap < DataRole, QVariant >> objectData) + virtual GamePixmapItem * renderGameObject(QMap < DataRole, QVariant > objectData) + virtual void renderGameObject (QMap < DataRole, QVariant \cdot objectData, GamePixmapltem stitem) + QPixmap rotatePixmap (const QPixmap &originalPixmap, int direction) + Qlmage rotatelmage (const Qlmage &image, int direction) # QImage animateHealthPack (int health, GamePixmapItem *item) # QPropertyAnimation * animateTint(QColor final, QColor initial $= \{0, 0, 0, 0\}$ # QPropertyAnimation * animateAttack(int dir, bool attacking) # QPropertyAnimation * animateBounce() # QPropertyAnimation * animateHealth(Direction dir) # QPropertyAnimation * animateHide() SpriteRenderer + static const QMap< ObjectType, CharacterData > m_charMap Qlmage m_tiles Qlmage m characters QSize m_charSize QSize m_tileSize + SpriteRenderer() + void renderGameObject (QMap < DataRole, QVariant > data, GamePixmapItem *item) override + GamePixmapItem * renderGame Object(QMap < DataRole, QVariant > data) override Qlmage sliceFrames (QImage image, QLine diagonal, QPoint frameSize) QRect getTileRect(QMap < DataRole, QVariant > data) QRect getCharacterRect (ObjectType type) int calculateFrame (QVariant direction, int POVnum) QPropertyAnimation * animateDeath(QPoint frame)