

Rectangle getRectangle()void setRectangle(Rectangle)

boolean checkCollision(CollidableEntity,CollidableEntity

float getPrevX()void setPrevX(float)float getPrevY()

void setPrevY(float)

String imgName Texture getTexture()void setTexture(Texture) void setVisibility(boolean) void setActive(boolean) void setButtonColor(Color) Rectangle getBound()

Music menuMusic

Music gameMusic

Music controlMusic

Music scoreMusic

Music pauseMusic

Sound buttonHoverSound buttonClick

□ boolean isPlaying

void stopMusic()

boolean isPlaying()void playButtonHover()

void playButtonClick()

void playLaserSound()

void playEnemyLaserSound()

Sound laserPewSound enemyLaserPew

void playMusic(ScreenType)

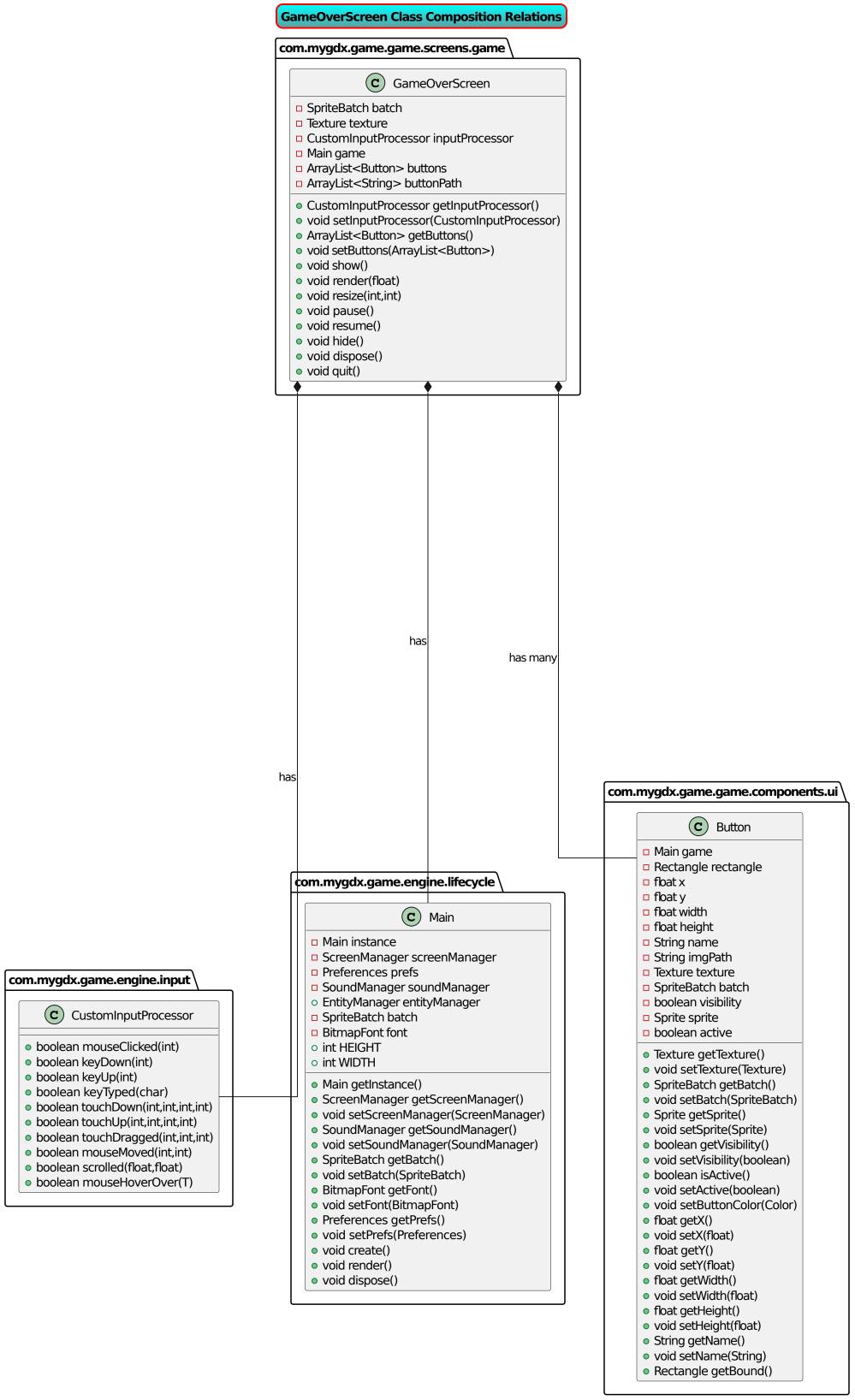
Music storyMusic

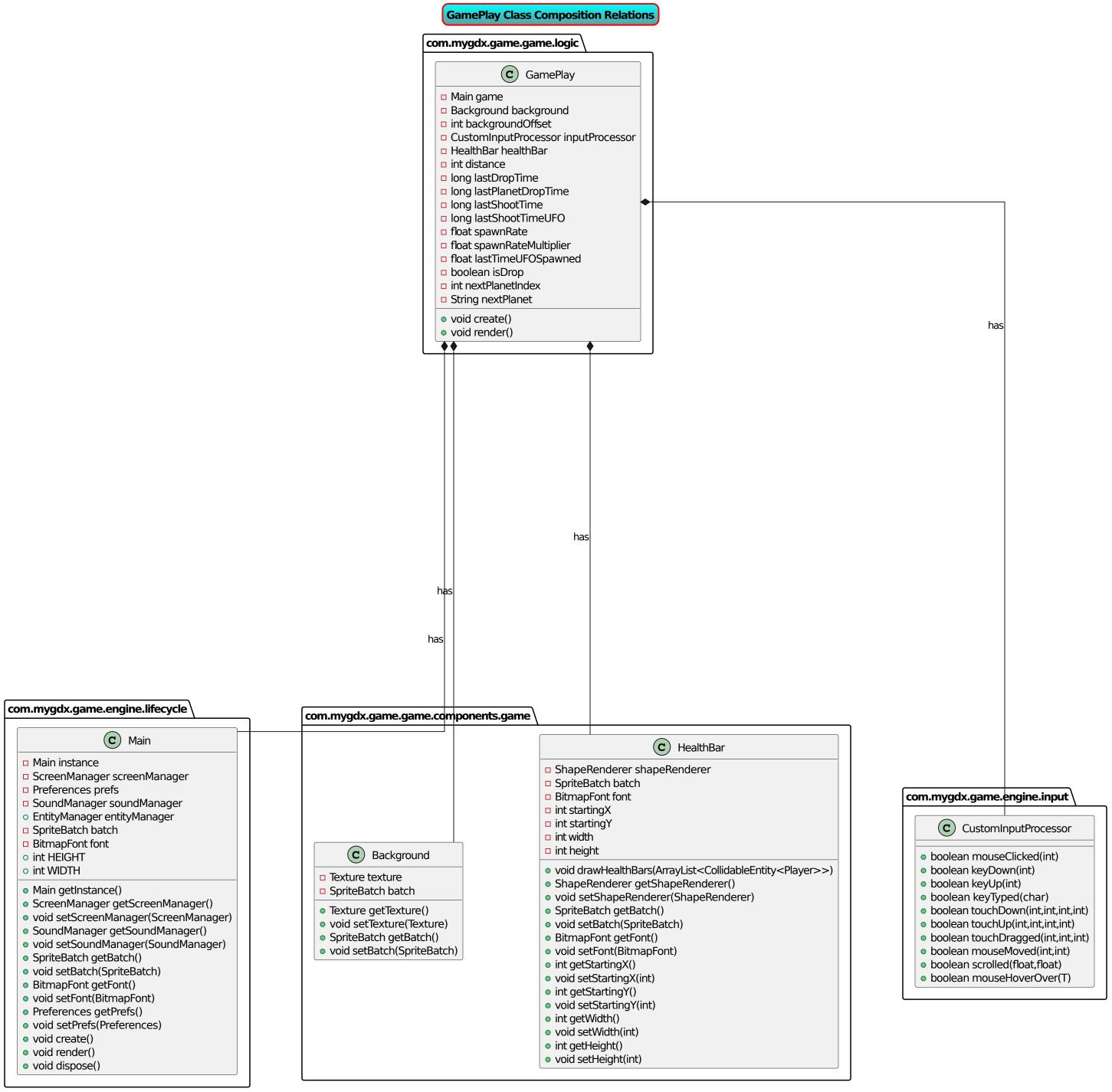
o MAIN MENU

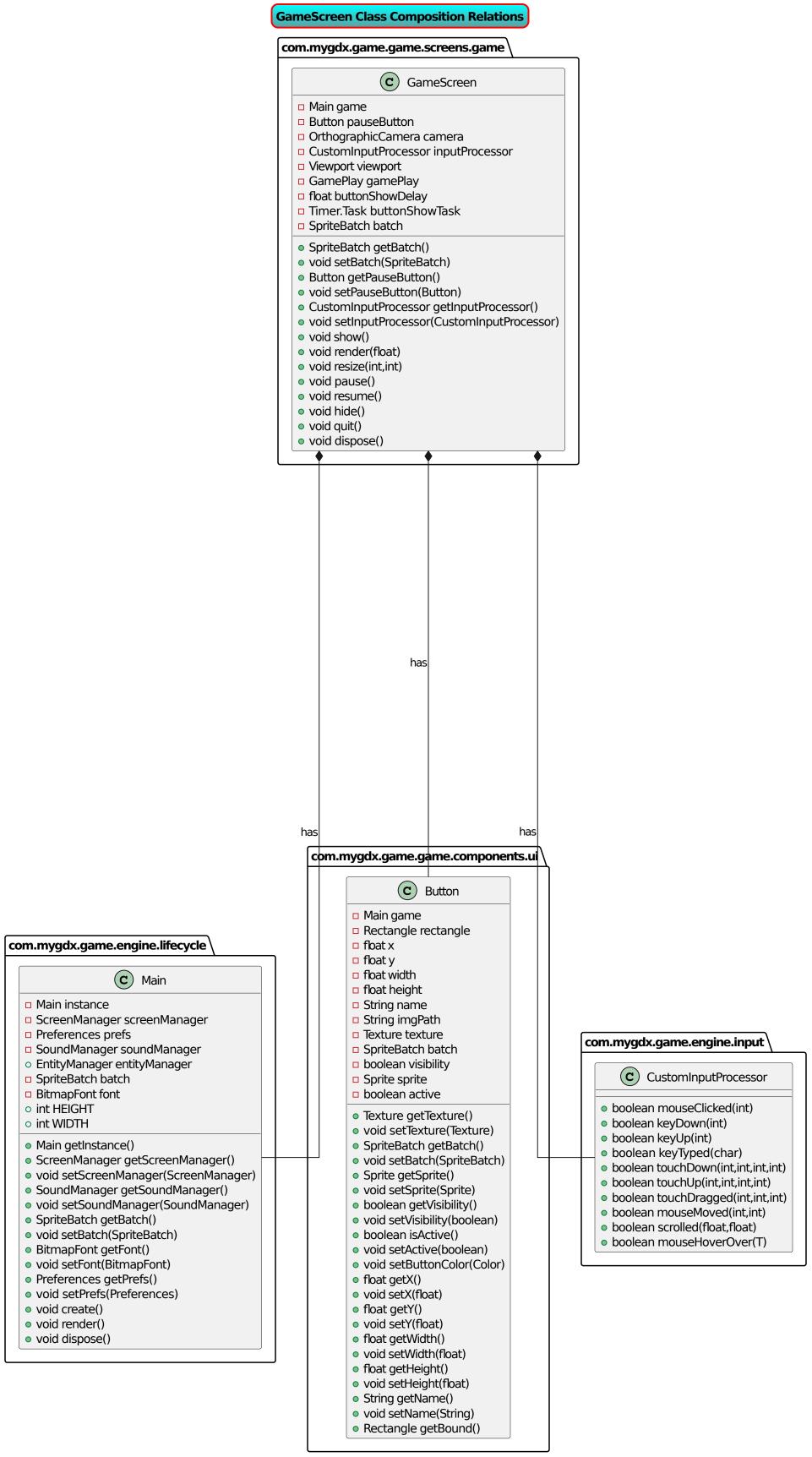
com.mygdx.game.game.components.game.player

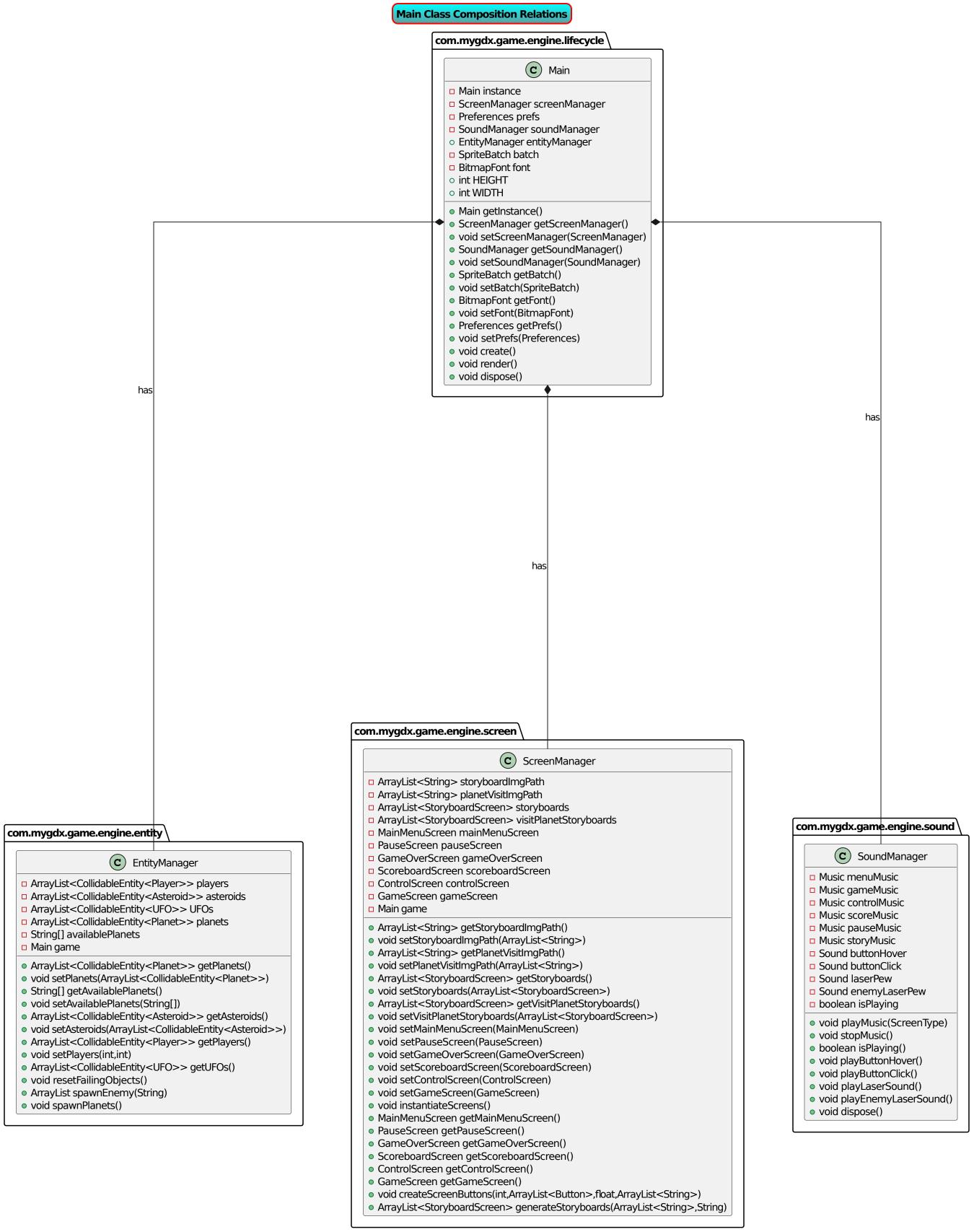
EntityManager Class Composition Relations com.mygdx.game.engine.entity (c) EntityManager ArrayList<CollidableEntity<Player>> players □ ArrayList<CollidableEntity<Asteroid>> asteroids □ ArrayList<CollidableEntity<UFO>> UFOs ArrayList<CollidableEntity<Planet>> planets String[] availablePlanets Main game ArrayList<CollidableEntity<Planet>> getPlanets() void setPlanets(ArrayList<CollidableEntity<Planet>>) String[] getAvailablePlanets() void setAvailablePlanets(String[]) ArrayList<CollidableEntity<Asteroid>> getAsteroids() void setAsteroids(ArrayList<CollidableEntity<Asteroid>>) ArrayList<CollidableEntity<Player>> getPlayers() void setPlayers(int,int) ArrayList<CollidableEntity<UFO>> getUFOs() void resetFailingObjects() ArrayList spawnEnemy(String) void spawnPlanets() has many has many has many has many com.mygdx.game.game.components.game.player **c** Player String imgName Sprite sprite float width □ float height □ float speed int[] mainKeyboardInputs int[] altKeyboardInputs □ int score com.mygdx.game.game.components.game.enemy ArrayList<CollidableEntity<Laser>> lasers com.mygdx.game.game.components.game.planets □ int maxHealth C UFO □ int currentHealth (c) Planet □ int aliensKilled String imgPath □ Timestamp startTime String planet String dir Afterburner afterburner □ Texture texture □ float speed Afterburner getAfterburner() SpriteBatch batch □ Texture texture **c** Asteroid void setAfterburner(Afterburner) □ ArrayList<CollidableEntity<Laser>> lasers Sprite sprite □ Rectangle rectangle float width String getImgName() Texture image void setImgName(String) float height □ int health float width Sprite getSprite() long lastShotTime void moveUFO(CollidableEntity,int,int) float height void setSprite(Sprite) long shotDelay long fireWeapon(CollidableEntity,Main) Texture getImage() float getWidth() void dropAsteroid(CollidableEntity<Asteroid>) float getSpeed() void setImage(Texture) void setWidth(float) void dropPlanet(CollidableEntity<Planet>) void setSpeed(float) float getWidth() float getHeight() String getPlanet() Texture getTexture() void setHeight(float) void setWidth(float) void setPlanet(String) void setTexture(Texture) float getHeight() float getSpeed() Texture getTexture() • int getHealth() void setHeight(float) void setSpeed(float) void setTexture(Texture) void setHealth(int) void moveUFO(CollidableEntity,int,int) int[] getMainKeyboardInputs() void moveUFO(CollidableEntity,int,int) SpriteBatch getBatch() long fireWeapon(CollidableEntity,Main) void setMainKeyboardInputs(int[]) void moveLeft(CollidableEntity) void setBatch(SpriteBatch) void dropAsteroid(CollidableEntity<Asteroid>) int[] getAltKeyboardInputs() void moveRight(CollidableEntity) float getWidth() void setAltKeyboardInputs(int[]) void dropPlanet(CollidableEntity<Planet>) void setWidth(float) void moveDown(CollidableEntity) int getScore() long fireWeapon(CollidableEntity,Main) float getHeight() void setScore(int) void setHeight(float) void dropAsteroid(CollidableEntity<Asteroid>) ArrayList<CollidableEntity<Laser>> getLasers() void dropPlanet(CollidableEntity<Planet>) Sprite getSprite() void setLasers(ArrayList<CollidableEntity<Laser>>) void setSprite(Sprite) void moveLasers(CollidableEntity<UFO>) int getMaxHealth() ArrayList<CollidableEntity<Laser>> getLasers() void setMaxHealth(int) int getCurrentHealth() void setCurrentHealth(int) Timestamp getStartTime() void setStartTime(Timestamp) void limitPlayerMovement(CollidableEntity<Player>,Integer,Integer) int movePlayer(CollidableEntity<Player>,CustomInputProcessor) • int getAliensKilled() void setAliensKilled(int) void moveLasers(CollidableEntity<Player>) void spawnLasers(CustomInputProcessor,CollidableEntity<Player>,Main)

void savePlayerData(Main)



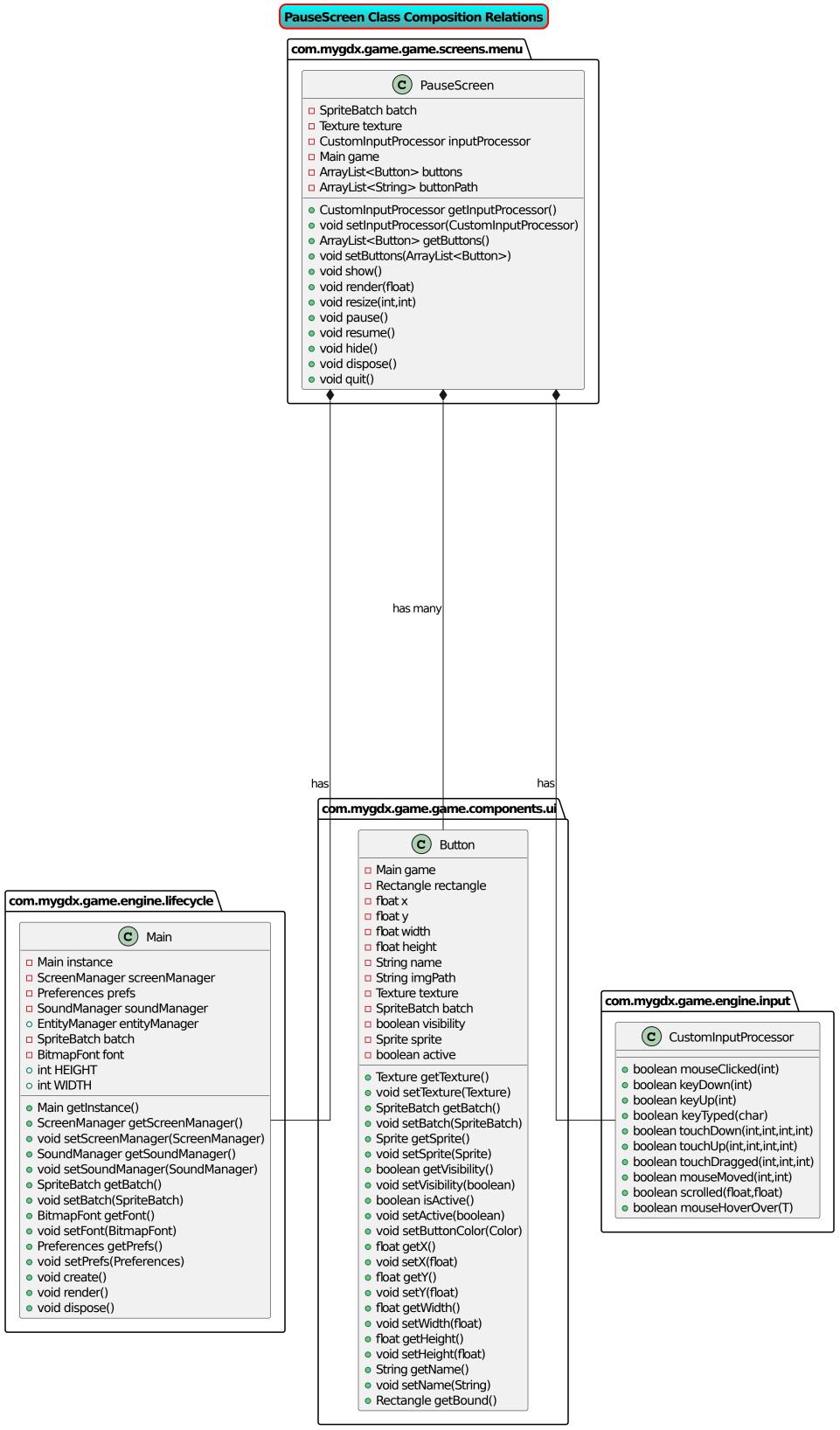


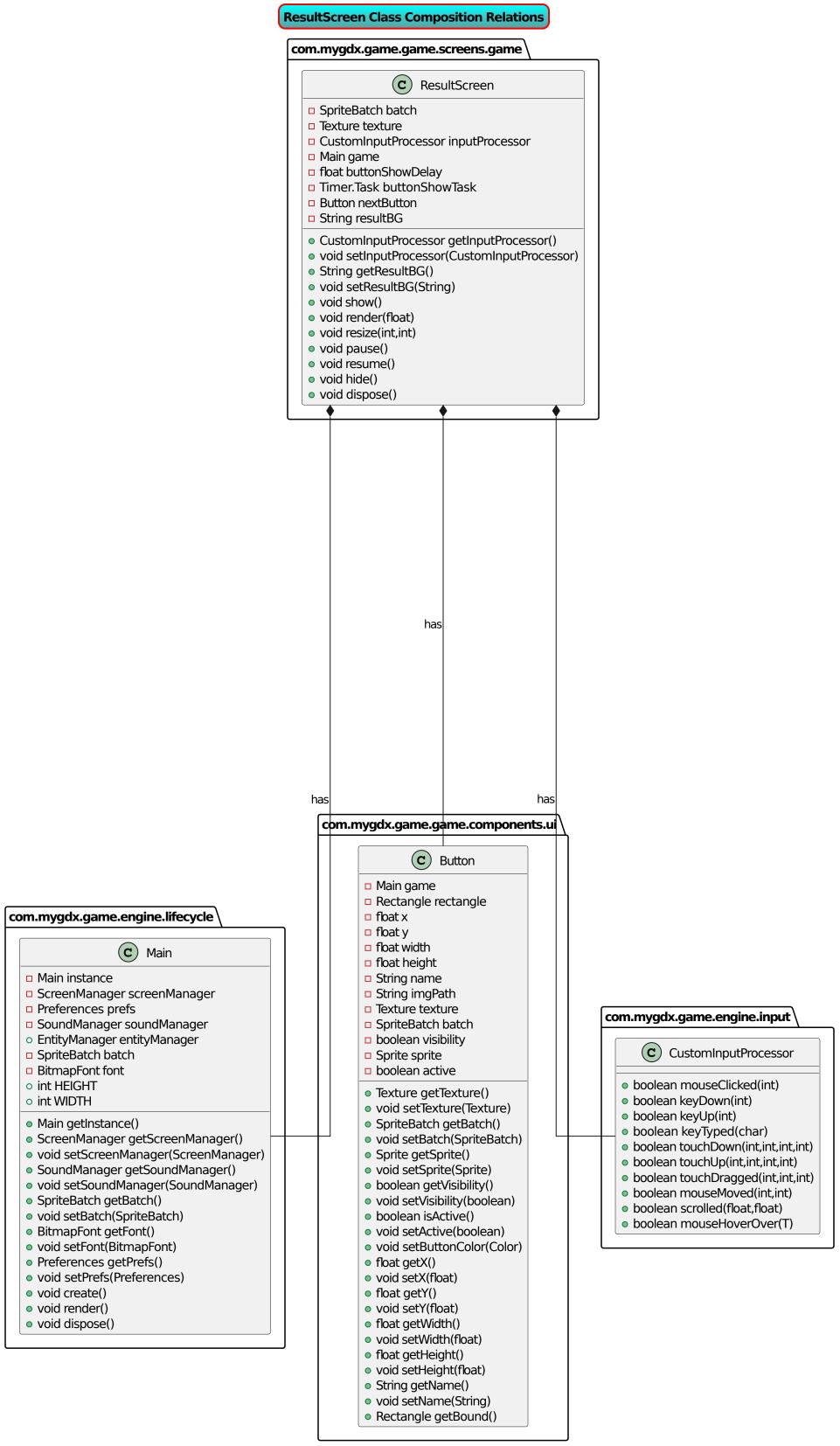


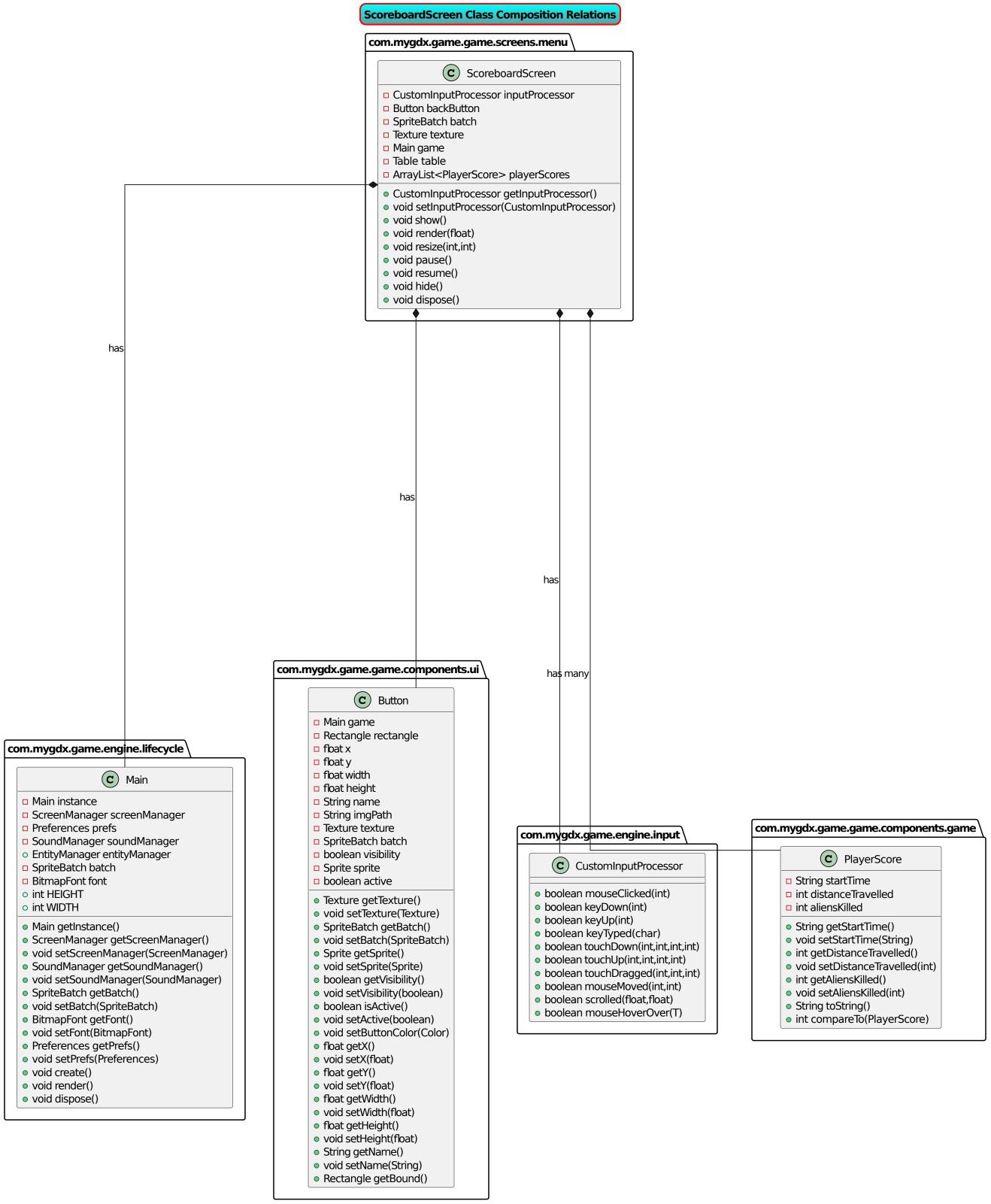


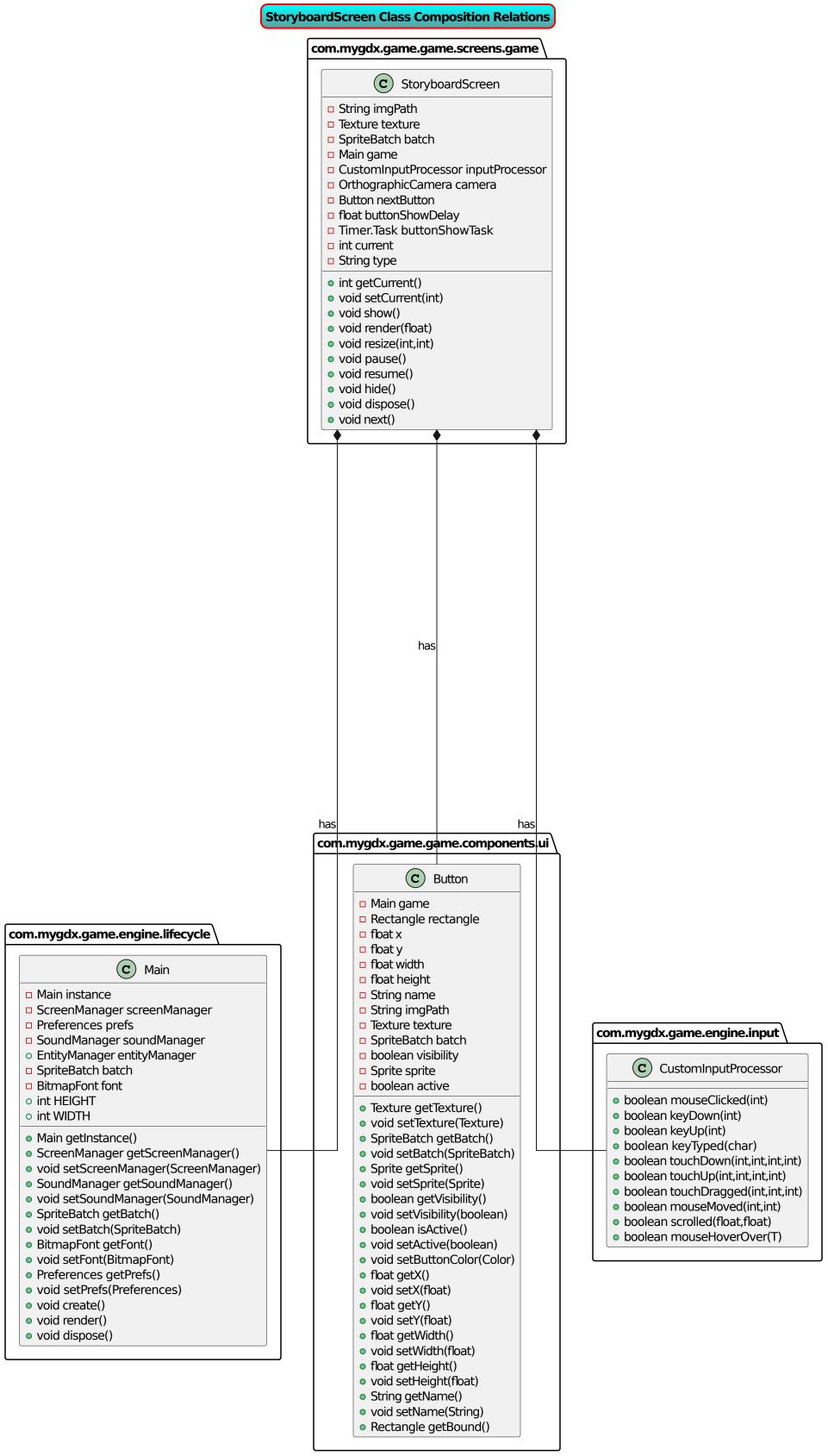
MainMenuScreen Class Composition Relations com.mygdx.game.game.screens.menu (C) MainMenuScreen CustomInputProcessor inputProcessor Main game OrthographicCamera camera ArrayList<Button> buttons SpriteBatch batch Texture texture ArrayList<String> buttonImagePath boolean soundPlayed ScoreboardScreen scoreboardScreen void setInputProcessor(CustomInputProcessor) void setButtons(ArrayList<Button>) void show() void render(float) void resize(int,int) void play() void quit() void pause() void resume() void hide() void dispose() has many has has com.mygdx.game.game.components.ui **Button** Main game Rectangle rectangle com.mygdx.game.engine.lifecycle □ float x float y □ float width (**c**) Main float height Main instance String name ScreenManager screenManager String imgPath Preferences prefs Texture texture com.mygdx.game.engine.input SoundManager soundManager SpriteBatch batch EntityManager entityManager boolean visibility **(c)** CustomInputProcessor SpriteBatch batch Sprite sprite □ BitmapFont font boolean active boolean mouseClicked(int) o int HEIGHT Texture getTexture() boolean keyDown(int) o int WIDTH void setTexture(Texture) boolean keyUp(int) Main getInstance() SpriteBatch getBatch() boolean keyTyped(char) ScreenManager getScreenManager() void setBatch(SpriteBatch) boolean touchDown(int,int,int,int) void setScreenManager(ScreenManager) Sprite getSprite() boolean touchUp(int,int,int,int) SoundManager getSoundManager() void setSprite(Sprite) boolean touchDragged(int,int,int) void setSoundManager(SoundManager) boolean getVisibility() boolean mouseMoved(int,int) SpriteBatch getBatch() void setVisibility(boolean) boolean scrolled(float,float) void setBatch(SpriteBatch) boolean isActive() boolean mouseHoverOver(T) BitmapFont getFont() void setActive(boolean) void setFont(BitmapFont) void setButtonColor(Color) Preferences getPrefs() float getX() void setPrefs(Preferences) void setX(float) void create() float getY() void setY(float) void render() void dispose() • float getWidth() void setWidth(float) • float getHeight() void setHeight(float) String getName() void setName(String)

Rectangle getBound()

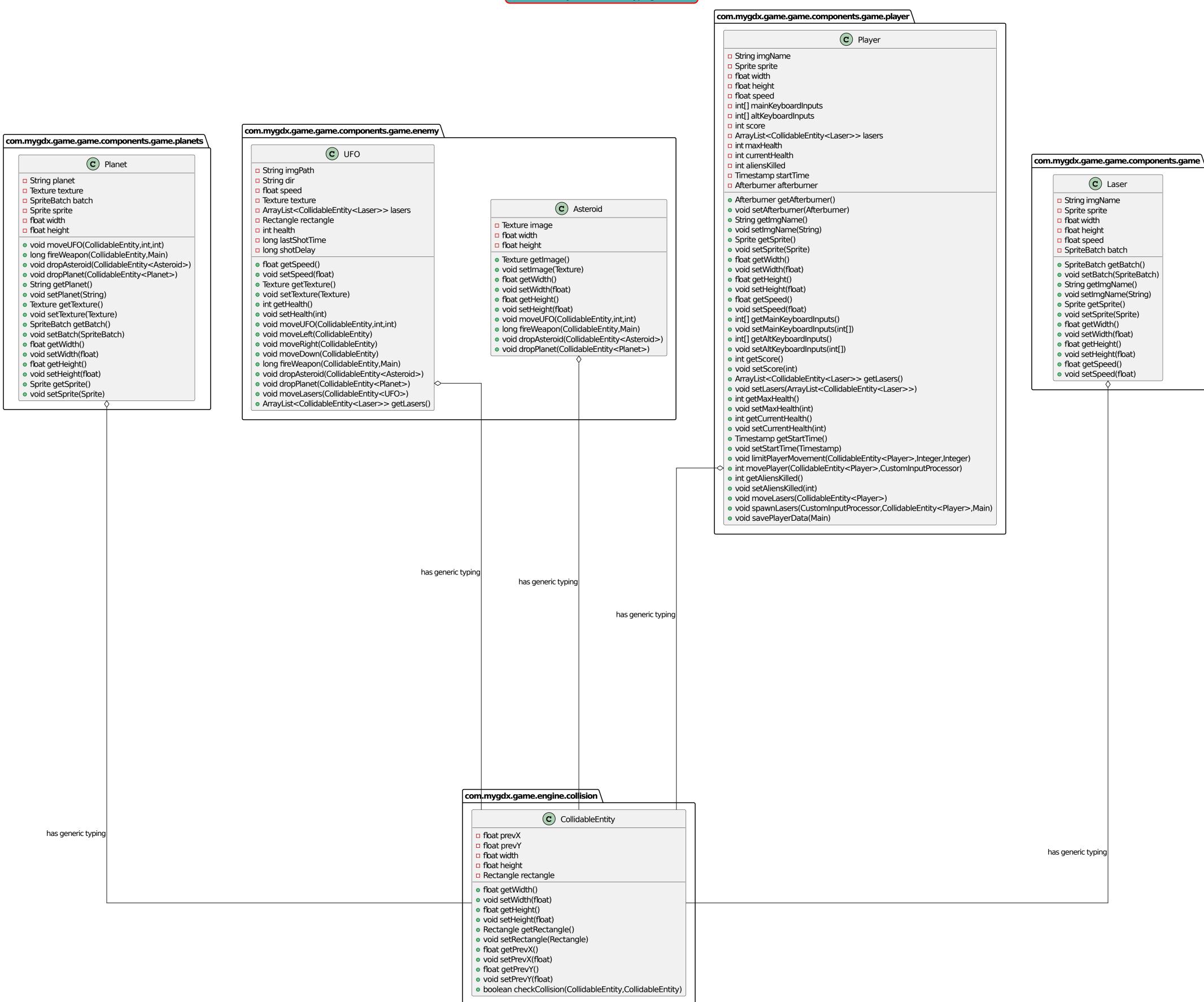








com.mygdx.game.game.components.game.player (C) Player String imgName Sprite sprite float width float height float speed int[] mainKeyboardInputs int[] altKeyboardInputs int score com.mygdx.game.game.components.game.enemy ArrayList<CollidableEntity<Laser>> lasers □ int maxHealth (**c**) UFO □ int currentHealth int aliensKilled String imgPath Timestamp startTime String dir Afterburner afterburner float speed Afterburner getAfterburner() □ Texture texture void setAfterburner(Afterburner) ArrayList<CollidableEntity<Laser>> lasers Rectangle rectangle String getImgName() void setImgName(String) □ int health Sprite getSprite() long lastShotTime void setSprite(Sprite) long shotDelay float getWidth() float getSpeed() void setWidth(float) void setSpeed(float) float getHeight() Texture getTexture() void setHeight(float) void setTexture(Texture) float getSpeed() int getHealth() void setSpeed(float) void setHealth(int) int[] getMainKeyboardInputs() void moveUFO(CollidableEntity,int,int) void setMainKeyboardInputs(int[]) void moveLeft(CollidableEntity) int[] getAltKeyboardInputs() void moveRight(CollidableEntity) void setAltKeyboardInputs(int[]) void moveDown(CollidableEntity) int getScore() long fireWeapon(CollidableEntity,Main) void setScore(int) void dropAsteroid(CollidableEntity<Asteroid>) ArrayList<CollidableEntity<Laser>> getLasers() void dropPlanet(CollidableEntity<Planet>) void setLasers(ArrayList<CollidableEntity<Laser>>) void moveLasers(CollidableEntity<UFO>) int getMaxHealth() ArrayList<CollidableEntity<Laser>> getLasers() void setMaxHealth(int) int getCurrentHealth() void setCurrentHealth(int) Timestamp getStartTime() void setStartTime(Timestamp) void limitPlayerMovement(CollidableEntity<Player>,Integer,Integer) int movePlayer(CollidableEntity<Player>,CustomInputProcessor) int getAliensKilled() void setAliensKilled(int) void moveLasers(CollidableEntity<Player>) void spawnLasers(CustomInputProcessor,CollidableEntity<Player>,Main) void savePlayerData(Main) has many has many has com.mygdx.game.game.components.game (C) Afterburner Laser String imgName String imgPath Texture texture Sprite sprite □ float width SpriteBatch batch float height □ float x float speed □ float y SpriteBatch batch boolean visibility SpriteBatch getBatch() String getImgPath() void setBatch(SpriteBatch) void setImgPath(String) String getImgName() Texture getTexture() void setImgName(String) void setTexture(Texture) Sprite getSprite() SpriteBatch getBatch() void setSprite(Sprite) void setBatch(SpriteBatch) float getWidth() float getX() void setWidth(float) void setX(float) float getHeight() float getY() void setY(float) void setHeight(float) float getSpeed() boolean getVisibility() void setSpeed(float) void setVisibility(boolean)



ControlScreen Class Composition Relations com.mygdx.game.game.screens.game (C) ControlScreen String imgPath Texture texture SpriteBatch batch Main game CustomInputProcessor inputProcessor OrthographicCamera camera Button playButton float buttonShowDelay Timer.Task buttonShowTask void show() void render(float) void resize(int,int) void pause() void resume() void hide() void dispose() void play() has has com.mygdx.game.game.components.ui (C)**Button** Main game Rectangle rectangle float x float y float width float height String name String imgPath Texture texture com.mygdx.game.engine.input SpriteBatch batch boolean visibility (C) CustomInputProcessor Sprite sprite boolean active boolean mouseClicked(int) Texture getTexture() boolean keyDown(int) void setTexture(Texture) boolean keyUp(int) SpriteBatch getBatch() boolean keyTyped(char) void setBatch(SpriteBatch) boolean touchDown(int,int,int,int) Sprite getSprite() boolean touchUp(int,int,int,int) void setSprite(Sprite) boolean touchDragged(int,int,int) boolean getVisibility() boolean mouseMoved(int,int) void setVisibility(boolean) boolean scrolled(float,float) boolean isActive() boolean mouseHoverOver(T) void setActive(boolean) void setButtonColor(Color) float getX() void setX(float) float getY() void setY(float) float getWidth() void setWidth(float) float getHeight() void setHeight(float) String getName() void setName(String) Rectangle getBound()