

Class Main:

Constants:

- GRID\_WIDTH = 20
- GRID\_HEIGHT = 15
- TOWER\_COST = 100
- MAX\_HEALTH = 100
- SPAWN\_RATE = 700

Attributes:

- Initialize various lists for enemies and towers
- Initialize game-related variables (money, timers, etc.)

Methods:

Main():

- Initialize game
- Enter main game loop:
  - Update game state
  - Handle input
  - Render game

Game():

- Initialize game variables
- Enter main game loop:
  - Update timers
  - Move enemies
  - Check for collisions
  - Update towers
  - Spawn new enemies
  - Update game state

MyDrawingPanel extends JPanel:

- Override paintComponent method:
  - Draw grid and game elements

playMusic(filepath):

- Play background music

spawnEnemy():

- Randomly choose an enemy type
- Add enemy properties to lists

calculateDirection():

- Calculate enemy directions

calculateClosest(towX, towY, range):  
Find closest enemy within range  
Return target index

MyMouseListener implements MouseListener, MouseMotionListener:

Constructor:

Initialize drawingPanel and moneyDisplay

mouseClicked(e):

Get clicked tile coordinates

Check if the tile is valid and has enough money

Deduct money and create a new tower on the tile

Main method:

Initialize and spawn initial enemy

Call Game() method

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Class Towers:

Attributes:

int x, y, range, firerate, dmg, target, bulletTimer=0, waitTime=0, bulletTargetX=0,  
bulletTargetY=0

Constructor Towers(x, y, fr, dmg, r):

Set x, y, firerate, dmg, range attributes

Methods:

Getters and Setters for the attributes