// a Mind for ImageWorld

**import** java**.**util**.\*;**

**import** java**.**awt**.**Point**;**

**import** org**.**w2mind**.**net**.\*;**

public class PacManDBZmind **implements** Mind

**{**

//====== Mind must respond to these methods: ==========================================================

// newrun(), endrun()

// getaction()

//======================================================================================================

public void newrun**()** **throws** RunError

**{**

**}**

public void endrun**()** **throws** RunError

**{**

**}**

public Action getaction **(** State state **)**

**{**

String s **=** state**.**toString**();**

String**[]** x **=** s**.**split**(**","**);**

Point friezaPos **=** **new** Point**();**

Point gokuPos **=** **new** Point**();**

Point dbPos **=** **new** Point**();**

Point ginyuPos **=** **new** Point**();**

Point cellPos **=** **new** Point**();**

int dbCollected**,**friezaHealth**,**ginyuHealth**,**cellHealth**;**

int i**;**

friezaPos**.**x **=** Integer**.**parseInt**(**x**[**0**]);**

friezaPos**.**y **=** Integer**.**parseInt**(**x**[**1**]);**

gokuPos**.**x **=** Integer**.**parseInt**(**x**[**2**]);**

gokuPos**.**y **=** Integer**.**parseInt**(**x**[**3**]);**

dbPos**.**x **=** Integer**.**parseInt**(**x**[**4**]);**

dbPos**.**y **=** Integer**.**parseInt**(**x**[**5**]);**

ginyuPos**.**x **=** Integer**.**parseInt**(**x**[**6**]);**

ginyuPos**.**y **=** Integer**.**parseInt**(**x**[**7**]);**

dbCollected **=** Integer**.**parseInt**(**x**[**8**]);**

friezaHealth **=** Integer**.**parseInt**(**x**[**9**]);**

ginyuHealth **=** Integer**.**parseInt**(**x**[**10**]);**

cellPos**.**x **=** Integer**.**parseInt**(**x**[**11**]);**

cellPos**.**y **=** Integer**.**parseInt**(**x**[**12**]);**

cellHealth **=** Integer**.**parseInt**(**x**[**13**]);**

//=======================================

// HAVE FRIEZA CHASE GOKU

//========================================

//get distance from frieza to goku

int disGokuX **=** friezaPos**.**x **-** gokuPos**.**x**;**

int disGokuY **=** friezaPos**.**y **-** gokuPos**.**y**;**

int disGoku **=** Math**.**abs**(**disGokuX**)** **+** Math**.**abs**(**disGokuY**);**

//check horizontal

**if(**Math**.**abs**(**disGokuX**)** **>** Math**.**abs**(**disGokuY**))**

**{**

//then move in x direction

**if(**disGokuX **<** 0**)**

**{**

i **=** PacManDBZworld**.**ACTION\_RIGHT**;**

**}**

**else** i **=** PacManDBZworld**.**ACTION\_LEFT**;**

**}**

//else vertical movement

**else**

**{**

**if(**disGokuY **<** 0**)**

**{**

i **=** PacManDBZworld**.**ACTION\_DOWN**;**

**}**

**else**

**{**

i **=** PacManDBZworld**.**ACTION\_UP**;**

**}**

**}**

//===========================================

//Make Goku head for the dragonball

//===========================================

int j**;**

**if(**dbCollected **==** 0**)**

**{**

int disDbX **=** gokuPos**.**x **-** dbPos**.**x**;**

int disDbY **=** gokuPos**.**y **-** dbPos**.**y**;**

int disDb **=** Math**.**abs**(**disDbX**)** **+** Math**.**abs**(**disDbY**);**

//check horizontal

**if(**Math**.**abs**(**disDbX**)** **>** Math**.**abs**(**disDbY**))**

**{**

//then move in x direction

**if(**disDbX **<** 0**)**

**{**

j **=** PacManDBZworld**.**ACTION\_RIGHT**;**

**}**

**else** j **=** PacManDBZworld**.**ACTION\_LEFT**;**

**}**

//else vertical movement

**else**

**{**

**if(**disDbY **<** 0**)**

**{**

j **=** PacManDBZworld**.**ACTION\_DOWN**;**

**}**

**else**

**{**

j **=** PacManDBZworld**.**ACTION\_UP**;**

**}**

**}**

**}**

//when Goku collects the dragonball

//Goku will chase the bad guys

**else**

**{**

//get distance from goku to frieza

int disFX **=** gokuPos**.**x **-** friezaPos**.**x**;**

int disFY **=** gokuPos**.**y **-** friezaPos**.**y**;**

int disF **=** Math**.**abs**(**disFX**)** **+** Math**.**abs**(**disFY**);**

//get distance from goku to Ginyu

int disGX **=** gokuPos**.**x **-** ginyuPos**.**x**;**

int disGY **=** gokuPos**.**y **-** ginyuPos**.**y**;**

int disG **=** Math**.**abs**(**disGX**)** **+** Math**.**abs**(**disGY**);**

//get distance from goku to cell

int disCX **=** gokuPos**.**x **-** cellPos**.**x**;**

int disCY **=** gokuPos**.**y **-** cellPos**.**y**;**

int disC **=** Math**.**abs**(**disCX**)** **+** Math**.**abs**(**disCY**);**

//check which bad guy is closest

//If frieza is closer go for him

//if ginyu is dead go for frieza

//if cell is closer go for him

**if((**disF **<=** disG**)** **&&** **(**disF **<=**disC**)** **||** **(**ginyuHealth **<** 1 **&&** cellHealth **<** 1**))**

**{**

//check horizontal

**if(**Math**.**abs**(**disFX**)** **>** Math**.**abs**(**disFY**))**

**{**

//then move in x direction

**if(**disFX **<** 0**)**

**{**

j **=** PacManDBZworld**.**ACTION\_RIGHT**;**

**}**

**else** j **=** PacManDBZworld**.**ACTION\_LEFT**;**

**}**

//else vertical movement

**else**

**{**

**if(**disFY **<** 0**)**

**{**

j **=** PacManDBZworld**.**ACTION\_DOWN**;**

**}**

**else**

**{**

j **=** PacManDBZworld**.**ACTION\_UP**;**

**}**

**}**

**}**

//else go for ginyu

**else** **if((**disG **<=** disC**)** **&&** **(**disG **<=** disF**)** **||** **(**friezaHealth **<** 1 **&&** cellHealth **<** 1**))**

**{**

//check horizontal

**if(**Math**.**abs**(**disGX**)** **>** Math**.**abs**(**disGY**))**

**{**

//then move in x direction

**if(**disGX **<** 0**)**

**{**

j **=** PacManDBZworld**.**ACTION\_RIGHT**;**

**}**

**else** j **=** PacManDBZworld**.**ACTION\_LEFT**;**

**}**

//else vertical movement

**else**

**{**

**if(**disGY **<** 0**)**

**{**

j **=** PacManDBZworld**.**ACTION\_DOWN**;**

**}**

**else**

**{**

j **=** PacManDBZworld**.**ACTION\_UP**;**

**}**

**}**

**}**

//else go for cell

**else**

**{**

**if(**Math**.**abs**(**disCX**)** **>** Math**.**abs**(**disCY**))**

**{**

//then move in x direction

**if(**disCX **<** 0**)**

**{**

j **=** PacManDBZworld**.**ACTION\_RIGHT**;**

**}**

**else** j **=** PacManDBZworld**.**ACTION\_LEFT**;**

**}**

//else vertical movement

**else**

**{**

**if(**disCY **<** 0**)**

**{**

j **=** PacManDBZworld**.**ACTION\_DOWN**;**

**}**

**else**

**{**

j **=** PacManDBZworld**.**ACTION\_UP**;**

**}**

**}**

**}**

**}**

//========================================

//Make captain Ginyu chase goku

//========================================

int k**;**

//get distance from ginyu to goku

int disGokuX2 **=** ginyuPos**.**x **-** gokuPos**.**x**;**

int disGokuY2 **=** ginyuPos**.**y **-** gokuPos**.**y**;**

int disGoku2 **=** Math**.**abs**(**disGokuX2**)** **+** Math**.**abs**(**disGokuY2**);**

//check horizontal

**if(**Math**.**abs**(**disGokuX2**)** **>** Math**.**abs**(**disGokuY2**))**

**{**

//then move in x direction

**if(**disGokuX2 **<** 0**)**

**{**

k **=** PacManDBZworld**.**ACTION\_RIGHT**;**

**}**

**else** k **=** PacManDBZworld**.**ACTION\_LEFT**;**

**}**

//else vertical movement

**else**

**{**

**if(**disGokuY2 **<** 0**)**

**{**

k **=** PacManDBZworld**.**ACTION\_DOWN**;**

**}**

**else**

**{**

k **=** PacManDBZworld**.**ACTION\_UP**;**

**}**

**}**

//========================================

// MAKE CELL CHASE GOKU

//========================================

int m**;**

//get distance from ginyu to goku

int disGokuX3 **=** cellPos**.**x **-** gokuPos**.**x**;**

int disGokuY3 **=** cellPos**.**y **-** gokuPos**.**y**;**

int disGoku3 **=** Math**.**abs**(**disGokuX3**)** **+** Math**.**abs**(**disGokuY3**);**

//check horizontal

**if(**Math**.**abs**(**disGokuX3**)** **>** Math**.**abs**(**disGokuY3**))**

**{**

//then move in x direction

**if(**disGokuX3 **<** 0**)**

**{**

m **=** PacManDBZworld**.**ACTION\_RIGHT**;**

**}**

**else** m **=** PacManDBZworld**.**ACTION\_LEFT**;**

**}**

//else vertical movement

**else**

**{**

**if(**disGokuY3 **<** 0**)**

**{**

m **=** PacManDBZworld**.**ACTION\_DOWN**;**

**}**

**else**

**{**

m **=** PacManDBZworld**.**ACTION\_UP**;**

**}**

**}**

String a **=** String**.**format **(**"%d,%d,%d,%d"**,** i**,**j**,**k**,**m**);**

**return** **new** Action **(**a**);**

**}**

**}**