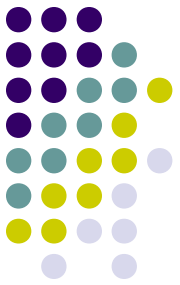software freedom day 08

http://www.softwarefreedomday.org

# Developing 2D Game Based on Slick2D Framework
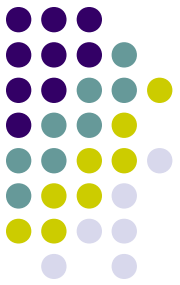
Murti Daryandono

aryaspy@yahoo.com
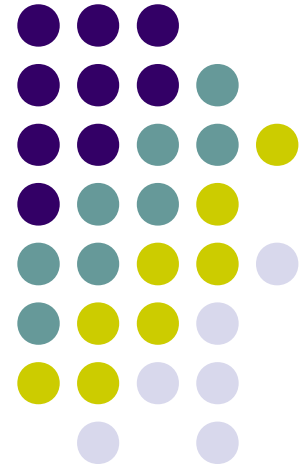
IT Worlds Today

- IT implementations are **everywhere**.
- They can be found in web application, information system, artificial intelligent agent, and also **entertainment**.
- **Game** is the implementation of IT in entertainment world.
- Today, game as interactive entertainment can be found on cell phones, televisions, CDs, DVDs, and **PC**s.
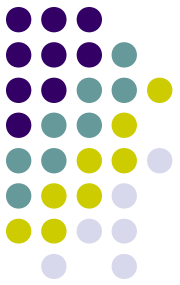
Game

- Game is structured or semi-structured activity that connect with fun, arts, and education. The elements in game are **goal**, **rules**, **challenge** and **interactivity**.

- One of the most popular game platform in digital world is **PC game.**

How to develop game?

- Make game concept.
- Choose platform (console based, handheld based, pc based, etc…).
- Choose development environment (java or native – C, C++, C#, etc).
- Choose framework (if any good one - optional).
- Choose development tools (IDE, map editor, particle editor, image editor, sound editor, etc).

Developing 2D Game "NinjaX"

- Game concept   : scrolling 2D
- Game genre   : action
- Platform   : pc
- Environment   : java
- Framework   : Slick2D
- Development tools : Netbeans IDE, TileD map editor, Pedigree particle editor.

Game Concept
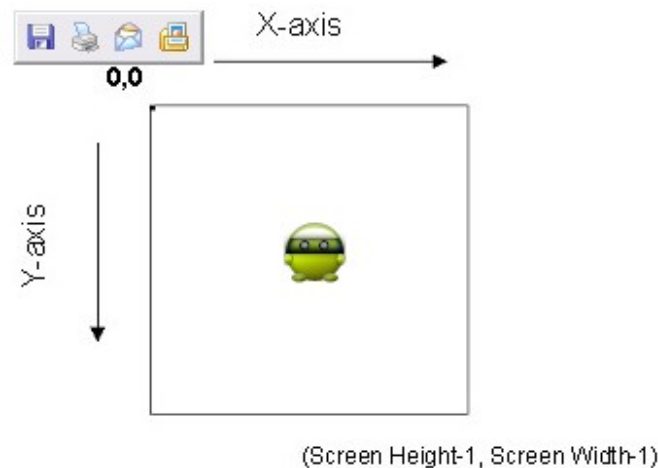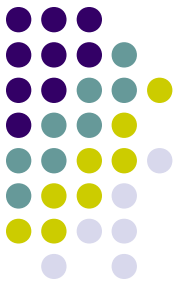
- Player move around x-y coordinates.
- Directions of player movement are up, down, left and right.
- Rules : player can't move outside map (960 x 800). Player can't move cross the wall. Player will earn point if get the "diamond".
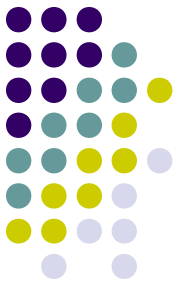- Goal : Player find the "key".
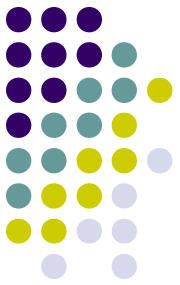
Using Slick2D as Framework

- Init – init game object, map etc.
- Update – obtaining input, updating object state, properties
- Render – draw object, map,

```
[ init ] → [ update ] → [ render ] → [ end ]
              ↑_____|
```
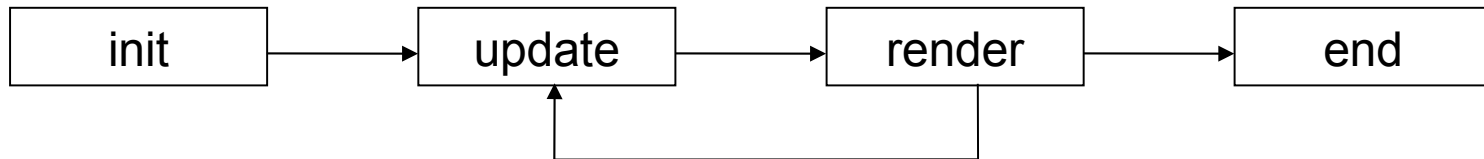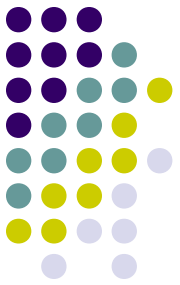
Init

- Example : BlackNinja.java

```
// load map
map = new TiledMap("ninjax/res/peta.tmx");

 ....

// create player and another game objects
blackNinja = Resources.getInstance().getBlackNinja();
greenDiamond = new GreenDiamond(7,10);
blueDiamond = new BlueDiamond(21,6);
orangeDiamond = new OrangeDiamond(7,16);
key = new Key(6, 2);

….

(see source code)
```
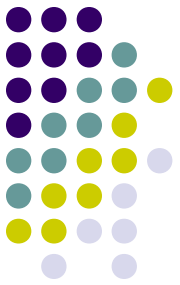
Update

- Example : BlackNinja.java

```
if(container.getInput().isKeyDown(Input.KEY_UP)){
                … //player update
}else if(container.getInput().isKeyDown(Input.KEY_DOWN)){\
                … //player update
}else if(container.getInput().isKeyDown(Input.KEY_LEFT)){
                … //player update
}else if(container.getInput().isKeyDown(Input.KEY_RIGHT)){
                … //player update
}else{

                … //player update

}


 //another object update
greenDiamond.update(container, delta);
blueDiamond.update(container, delta);
orangeDiamond.update(container, delta);
key.update(container, delta);
…
(see source code)
```

Render

- ## Example : BlackNinja.java

```
...

// render map
map.render(…);

// render game objects
greenDiamond.render(g, playerX, playerY);
blueDiamond.render(g, playerX, playerY);
orangeDiamond.render(g, playerX, playerY);
key.render(g, playerX, playerY);

// render player
blackNinja.draw(playerX*32, playerY*32);

…

(see source code)
```
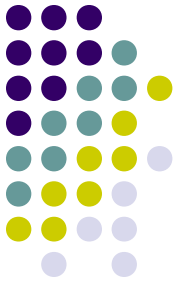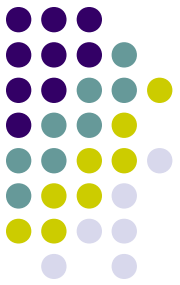
End

- Example : BlackNinja.java

```
if(blackNinja.isWin()){
  …
      container.exit();
  …
}

(see source code)
```
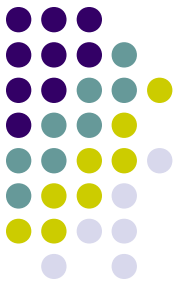
Conclusion

To make great game :

- You must **creative** in game concept.
- **Suitable** environment and platform.
- **Effective** and **efficient** development tools.
- Good resources (image, sound etc).
- … and **NEVER GIVE UP**.

Books that must be read

- Developing Games In Java – Brackeen.
- Chris Crawford on Game Design.
- Andrew Rollings and Ernest Adams on Game Design.
- Practical Java Game Programming – Dustin Clingman etc.
- Killer Game Programming – Andrew Davison.

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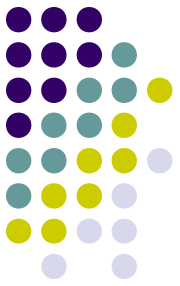
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aryaspy@yahoo.com

Hard work beats talent when talent doesn't work hard!
(anonymous)