Design Pattern 2

CS480 Software Engineering
February 25th, 2015
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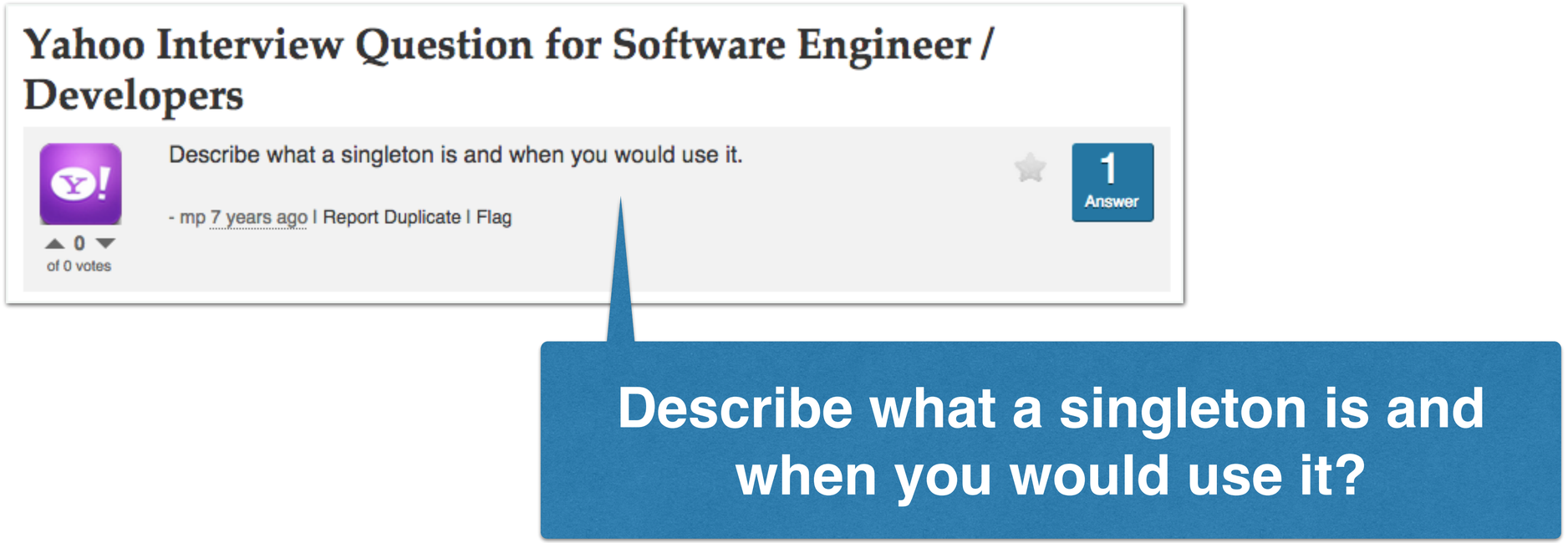
CAL POLY POMONA


Yahoo Interview Question for Software Engineer / Developers
Describe what a singleton is and when you would use it.
- mp 7 years ago | Report Duplicate | Flag
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of 0 votes
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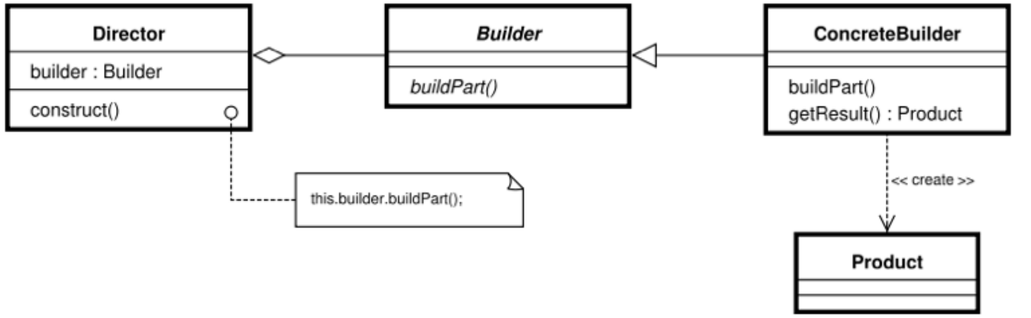
Answer
Describe what a singleton is and when you would use it?

Builder Pattern

Separate the construction of a complex object from its representation so that the same construction process can create different representations.



Your Creations
CUSTOM PIES

11.5" CRUSTS • UNLIMITED TOPPINGS
House-Made • Whole Wheat • Gluten-Free (add $2.00)

❶ *Select Your*
SAUCE

Red Sauce • 3-Cheese Alfredo • Herb Butter • Olive Oil
Fiery Buffalo Sauce • Pesto • BBQ Sauce

❷ *Choose Your*
CHEESES & MEATS

Mozzarella • Ricotta • Parmesan • Feta
Gorgonzola • Daiya Mozzarella (Vegan Add $2.00)*

Pepperoni • Sausage • Meatball • All-Natural Chicken
Spicy All-Natural Chicken • Ham • Bacon

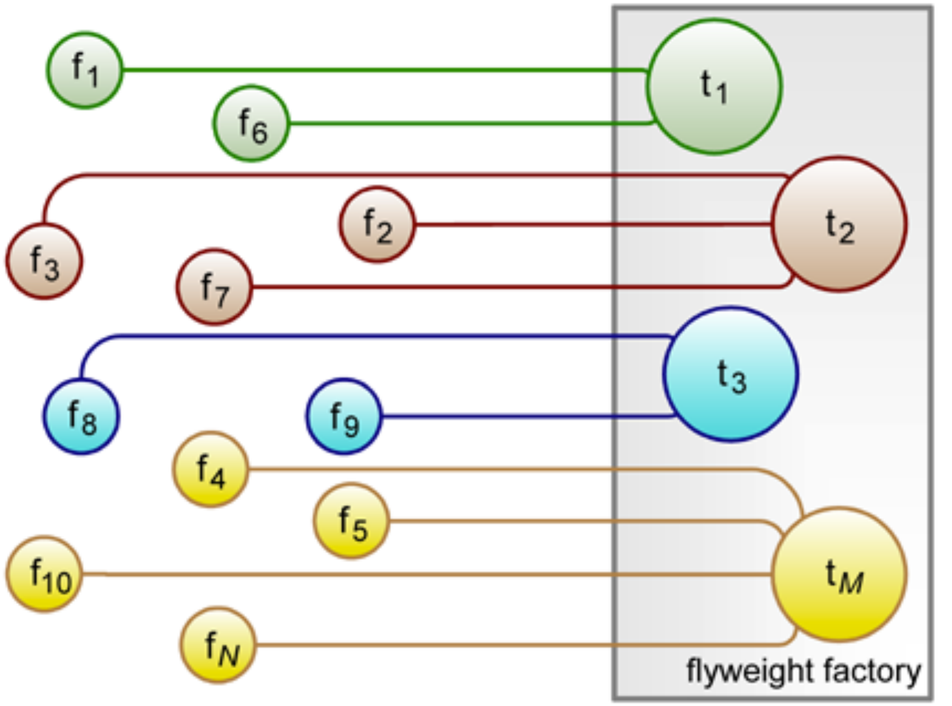
❸ *Stack Your*
TOPPINGS

Black Olives • Mushrooms • Red Onions • Green Peppers
Artichokes • Tomatoes • Garlic Pineapple • Jalapeños • Corn
Kalamata Olives • Fresh Cilantro • Spinach
Banana Peppers • Fresh Basil • Roasted Red Peppers

SHAKE IT UP WITH A FLAVOR BLAST! ▸ ADD AN AFTER BAKE

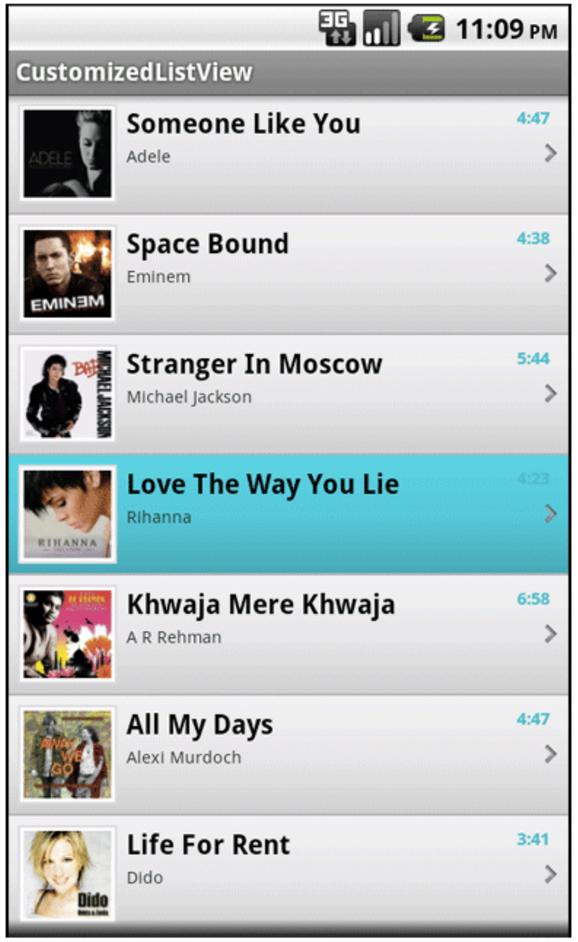
Flyweight Pattern

- an application uses a large number of objects
- storage costs are high because of the sheer quantity of objects
- most object state can be made extrinsic
- many groups of objects may be replaced by relatively few shared objects once extrinsic state is removed



Performance

ui response
example: Android ListView



Performance

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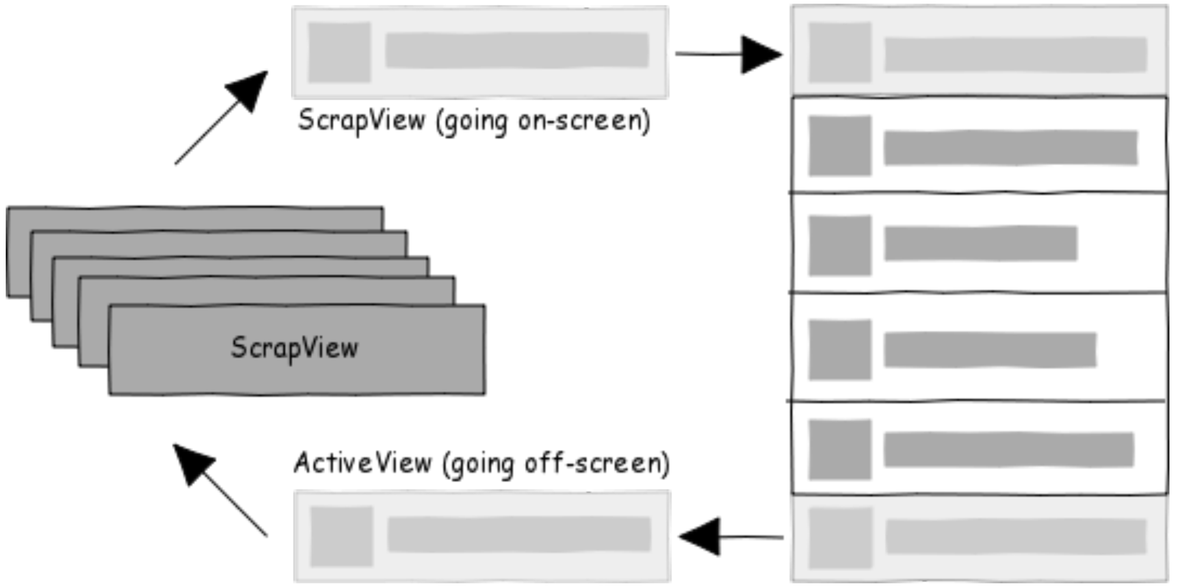
example: Android ListView



```java
@Override
public View getView(int position, View convertView, ViewGroup parent) {

    //inflate row layout
    LayoutInflater  inflater = LayoutInflater.from(context);
    View row =inflater.inflate(R.layout.list_item, parent,false);

    Person person =persons.get(position);


    //get all required widgets
    TextView textViewFirstName =(TextView) row.findViewById(R.id.textViewFirstName);
    TextView textViewLastName =(TextView) row.findViewById(R.id.textViewLastName);
    TextView textViewAge =(TextView) row.findViewById(R.id.textViewAge);
    TextView textViewId =(TextView) row.findViewById(R.id.textViewId);

    //show data

    textViewFirstName.setText(person.FirstName);
    textViewLastName.setText(person.LastName);
    textViewAge.setText("Age "+person.Age);
    textViewId.setText("ID "+person.Id);

    return row;
}
```

http://optimizationtricks.blogspot.com/2014/01/tricks-to-boost-performance-of-list-view.html

```java
@Override
public View getView(int position, View convertView, ViewGroup parent) {
    View row=convertView;
    ViewHolder holder=null;
    //inflate row layout
    if(row==null){
        row =inflater.inflate(R.layout.list_item, parent,false);
        holder =new ViewHolder(row);
        row.setTag(holder);
    }else{
        holder =(ViewHolder) row.getTag();
    }

    Person person =persons.get(position);


    //show data
    holder.textViewFirstName.setText(person.FirstName);
    holder.textViewLastName.setText(person.LastName);
    holder.textViewAge.setText("Age "+person.Age);
    holder.textViewId.setText("ID "+person.Id);

    return row;
}
```

Reuse the existing view if available

http://optimizationtricks.blogspot.com/2014/01/tricks-to-boost-performance-of-list-view.html

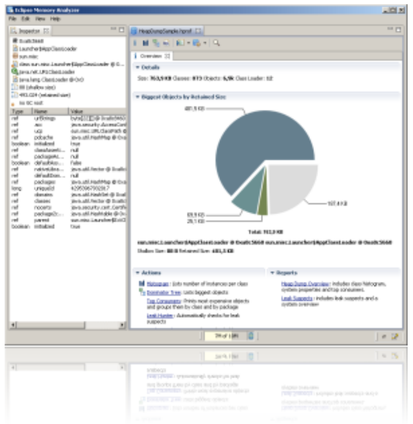
Memory Leak

A ***memory leak*** is a type of resource leak that occurs when a computer program incorrectly manages memory allocations in such a way that memory which is no longer needed is not released

"Hey! Your application has a memory leak."

Google I/O 2011: Memory management for Android Apps
https://www.youtube.com/watch?v=_CruQY55HOk

Memory Analyzer (MAT)



https://eclipse.org/mat/

"Hey! Your application has a memory leak."