**multiple dispatch**: an abstraction mechanism that invokes the most specialized implementation based on the dynamic type of more than one argument.

**Image Data Formats**

- RasterImage
- VectorImage
- CompressedImage
- RandomAccessImage
- LossyImage
- LosslessImage
- YUV
- RGB
- CMYK
- PlanarYUV
- PackedYUV
- TrueColorRGB
- PalletizedRGB

**Application domains**

- Shape Intersection
- Data Format Conversion
- Binary Method Problem
- Dynamic Properties of Matrices
- Action Systems
- Type Conversions
- Logging

**Design goals**

- Better performance
- Smaller space requirements
- Allowing for code extensibility
- Similar to overloading rules
- Support of repeated and virtual inheritance
- Exception-free
- Minimal burden on linker
- Support of dynamic linking

**The Object Model**

**Comparison**

<table>
<thead>
<tr>
<th>Approach</th>
<th>Cycles / Loop</th>
<th>Executable size (bytes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C++ Visitor</td>
<td>118</td>
<td>44973</td>
</tr>
<tr>
<td>C++ MultiMethod</td>
<td>56</td>
<td>27568</td>
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<tr>
<td>C++ OpenMethod</td>
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<td>27650</td>
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<tr>
<td>Chinese Remanagers</td>
<td>175</td>
<td>n/a</td>
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<tr>
<td>Cmm</td>
<td>1080</td>
<td>142907</td>
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<tr>
<td>Cmm (constant time)</td>
<td>530</td>
<td>142907</td>
</tr>
<tr>
<td>DoubleCPP</td>
<td>102</td>
<td>30639</td>
</tr>
<tr>
<td>Loki Library</td>
<td>3980</td>
<td>125510</td>
</tr>
</tbody>
</table>

```c
struct A {};
struct B : A {};
struct C : A {};
struct D : B, C {};
void foo(virtual A*, virtual A*);`