TerraLib for LUA

Web-aplicativos utilizando um binder LUA para TerraLib e o banco de dados PostGIS

CAP349- Banco de Dados Geográficos

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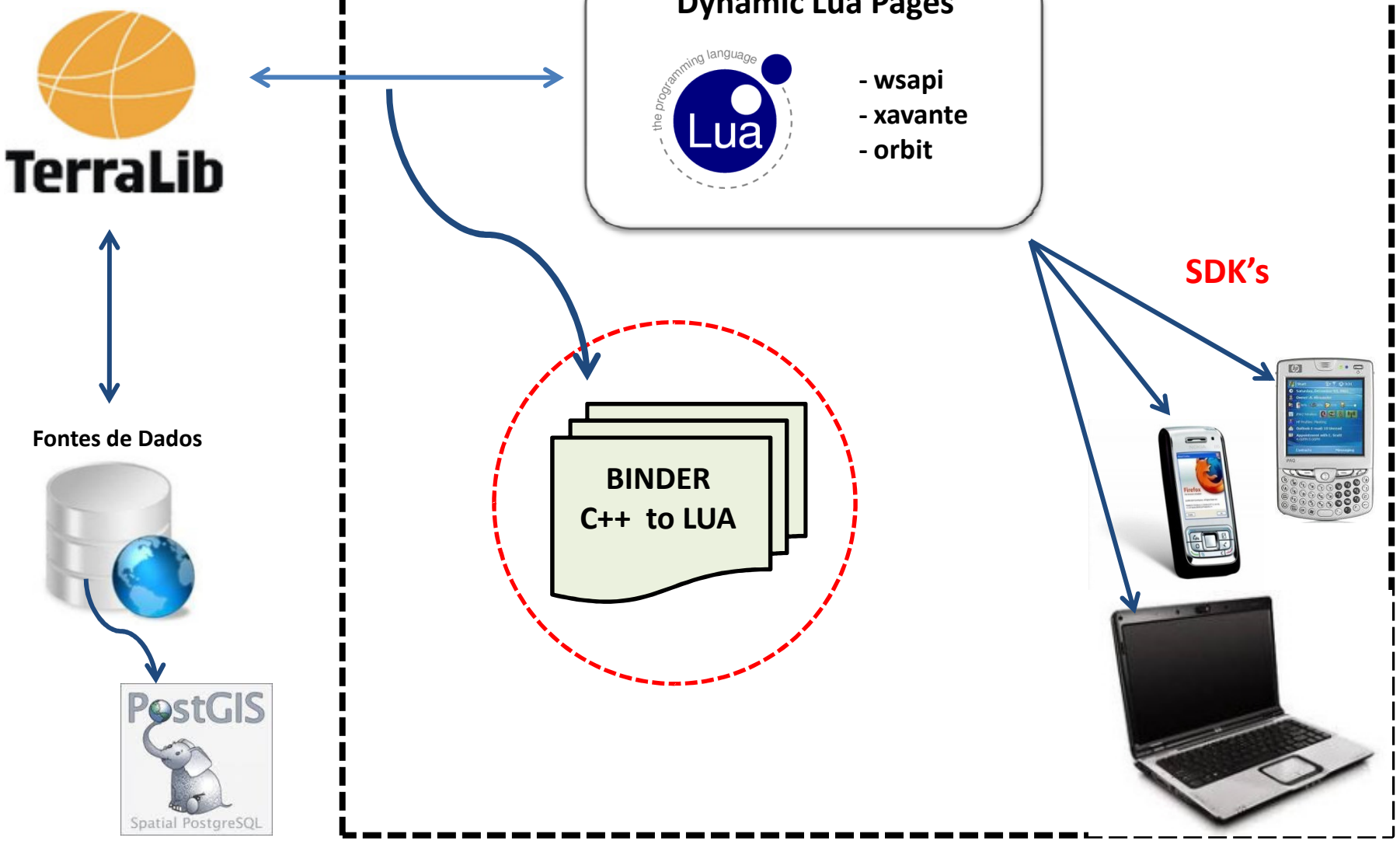
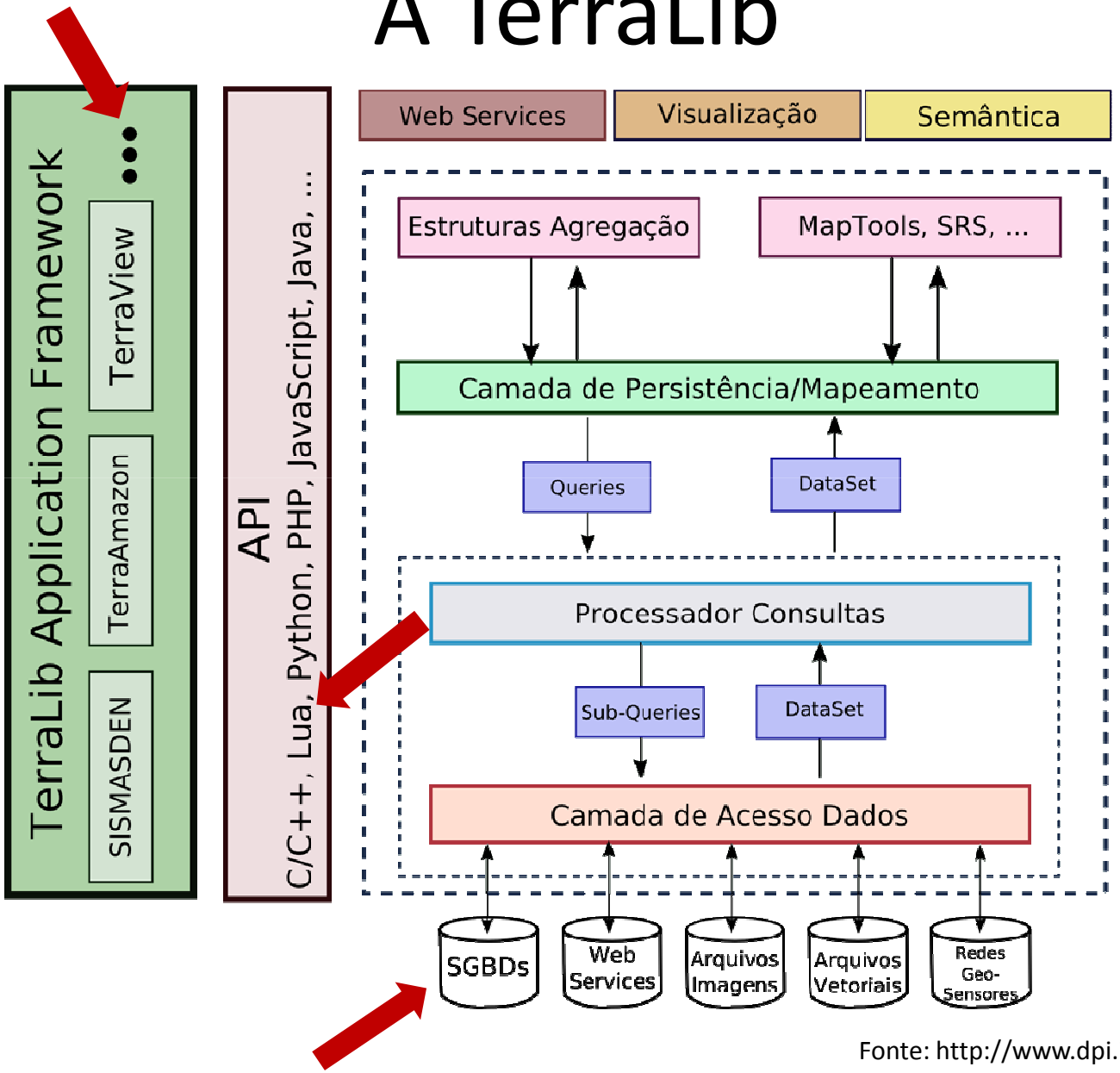
Objetivos


Dynamic Lua Pages
the programming language
Lua
- wsapi
- xavante
- orbit
TerraLib
Fontes de Dados
PostGIS
Spatial PostgreSQL
BINDER
C++ to LUA
SDK's

A TerraLib

- Projeto na área de Geoinformática desenvolvido pelo INPE
- Software livre (LGPL): http://www.terralib.org/
- Ambiente para pesquisa e desenvolvimento de inovações tecnológicas

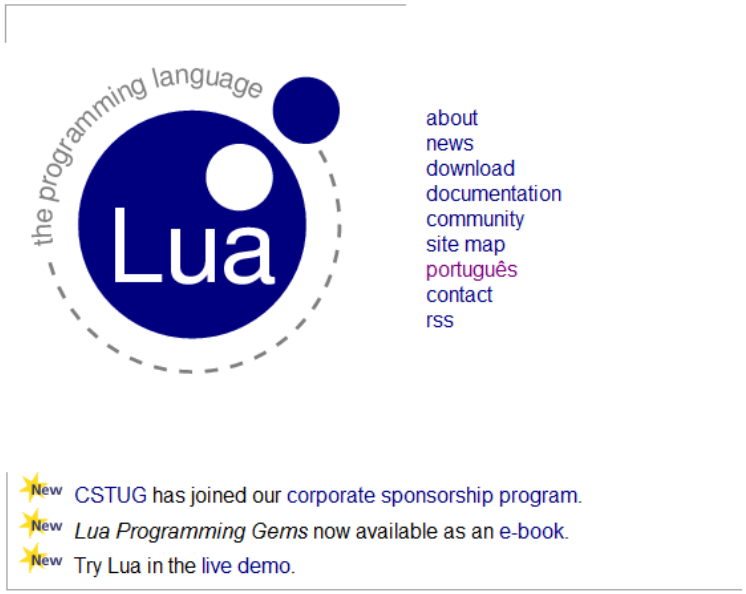
A TerraLib



Fonte: http://www.dpi.inpe.br/terralib5/wiki/

A Linguagem Lua

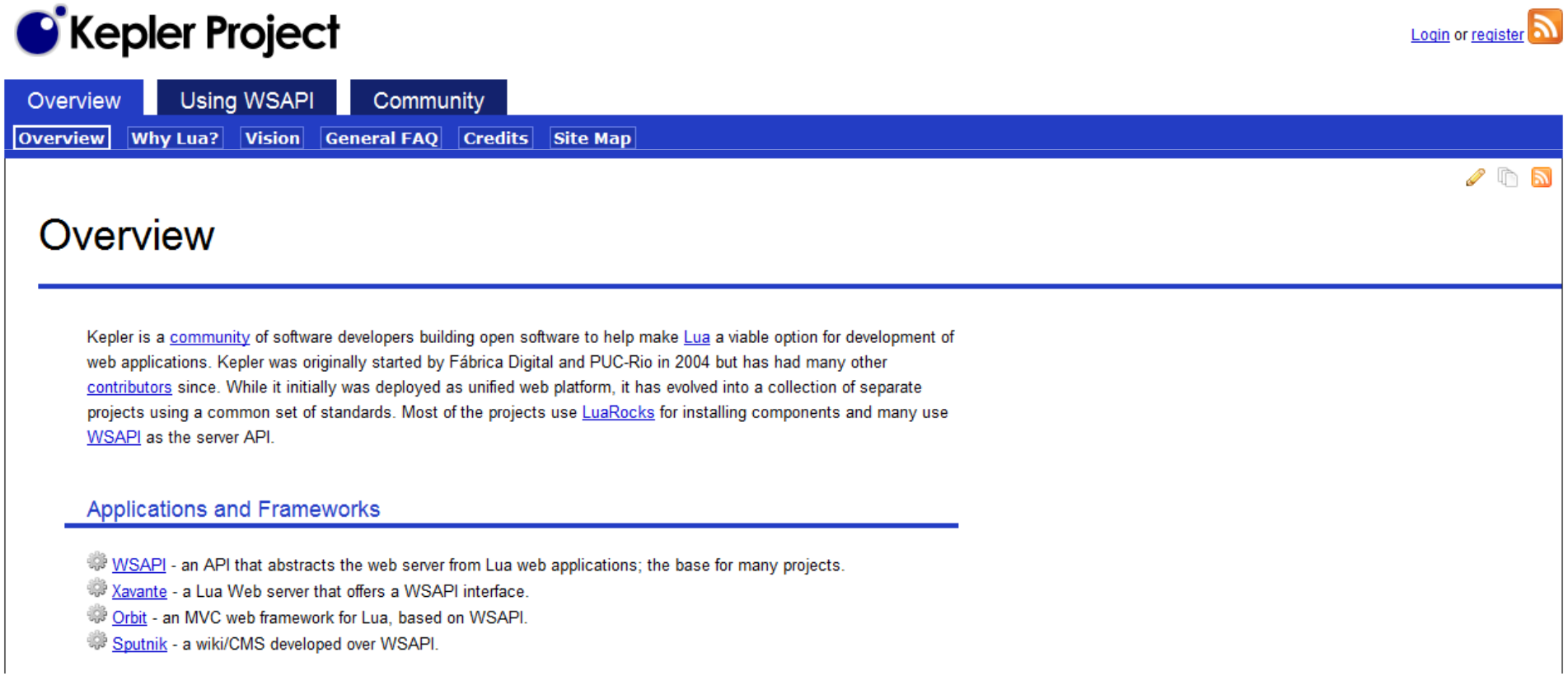
- Portabilidade
- Simplicidade
- Pequeno tamanho
- Mecanismos ao invés de políticas (Economia conceitual)
- Prototipagem rápida



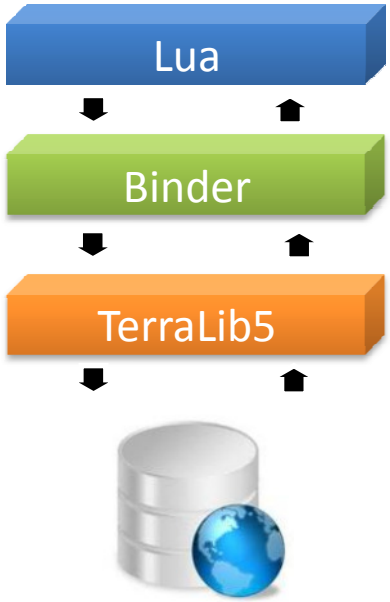
Fonte: http://www.lua.org/

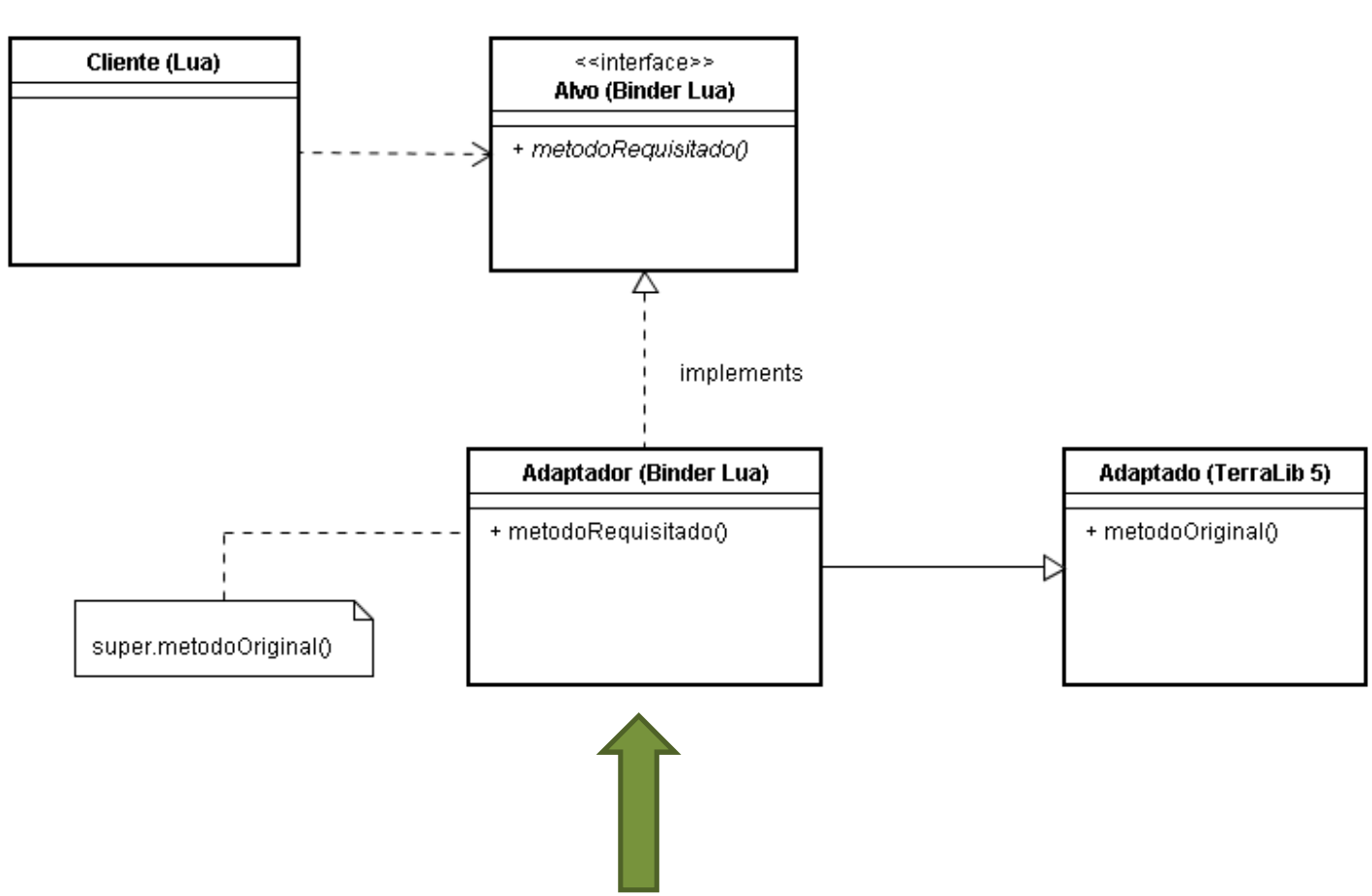
Lua Pages

- Projeto Kepler (WSAPI, Xavante, Orbit)
  - Utilização de lua na construção de aplicativos web



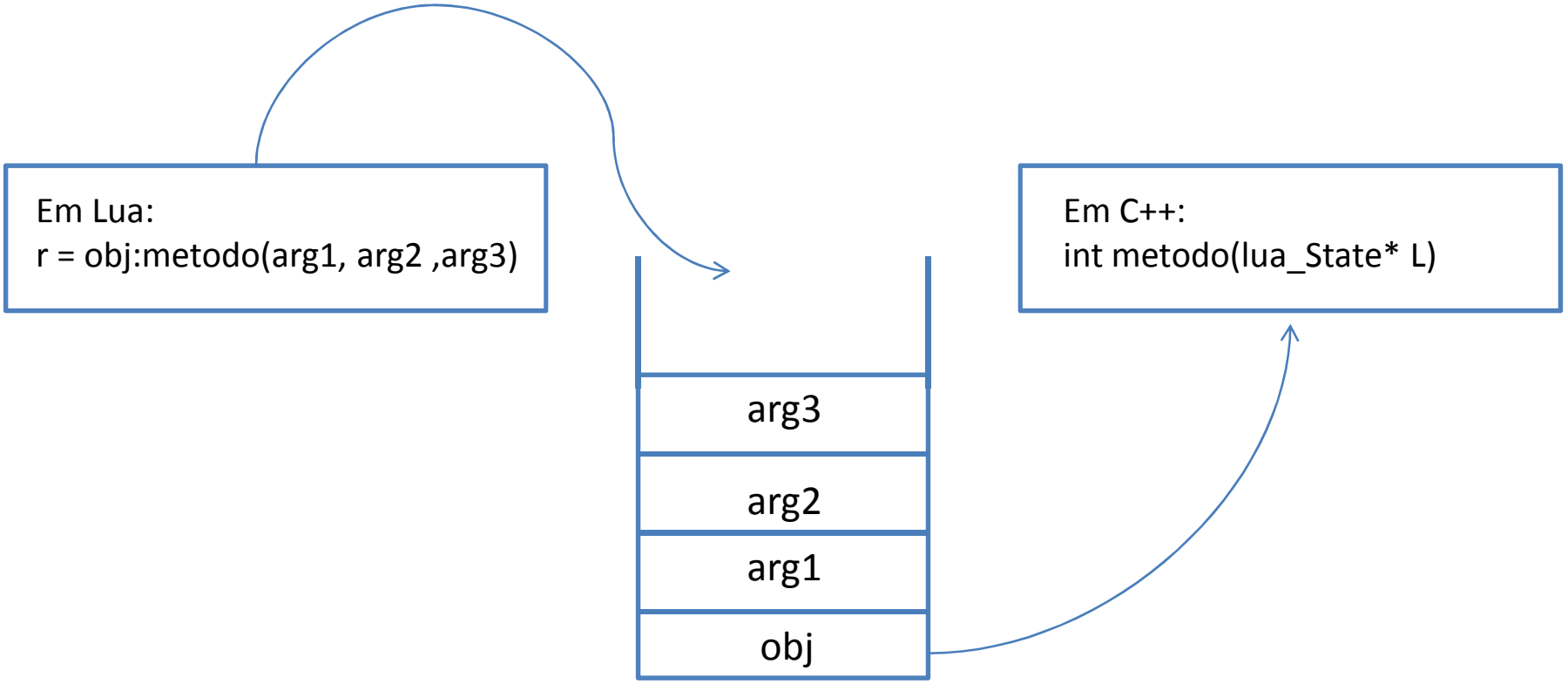
O Binder


Lua
Binder
TerraLib5


Cliente (Lua)
<<interface>>
Alvo (Binder Lua)
+ metodoRequisitado()
implements
Adaptador (Binder Lua)
+ metodoRequisitado()
Adaptado (TerraLib 5)
+ metodoOriginal()
super.metodoOriginal()

O Binder

- Como funciona?



Dispositivos Móveis

- Dispositivos móveis podem interagir com web-services fomentando as mais diversas aplicações, acessando e modificando dados

- SDK's
  - Symbiam
  - Android
  - Brew
  - J2ME

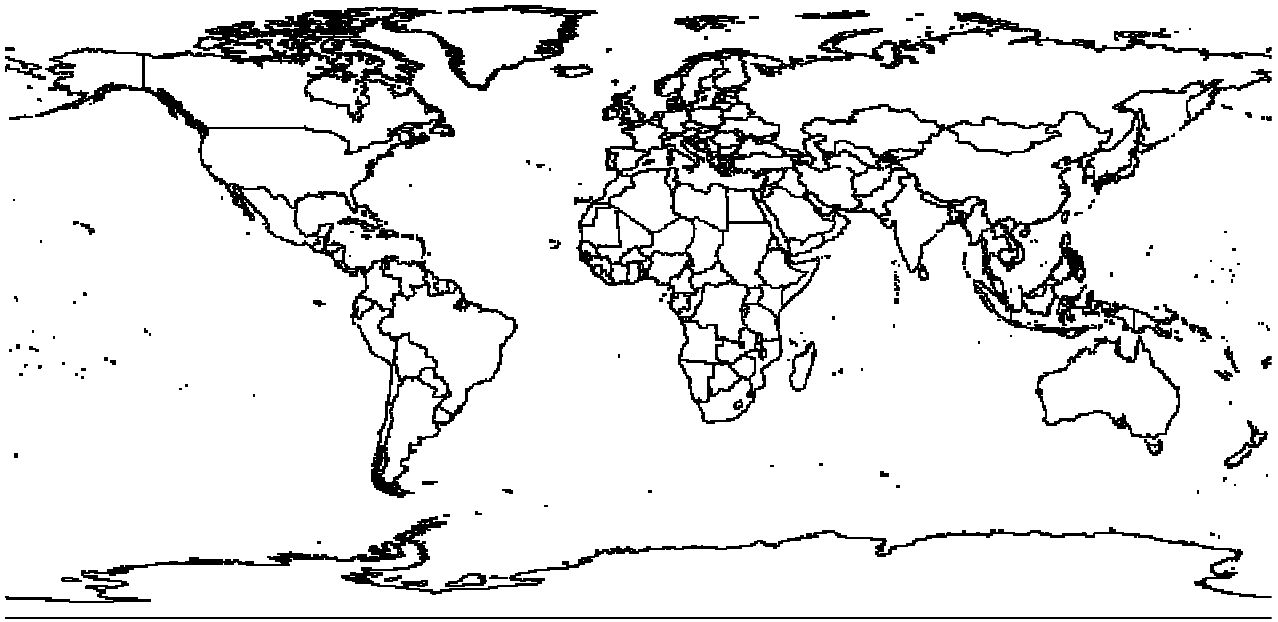
Exemplo Lua

```
01 - require “terralib_lua”
02 - terralib.Platform.initialize() --inicializa os módulos da terralib
03 - datasource=terralib.DataSourceFactory.make(“DataSource=PostGIS&host=localhost&
     port=5432&dbname=postgis&user=postgres &password=postgres&connect_timeout=20”)
04 - datasource:open()
05 - datasource:loadCatalog(true)
06 - transactor = datasource:getTransactor()
 08 - sql = “SELECT * FROM country”
09 - dataset = transactor:query(sql)
10 - canvas = terralib.QtCanvas.new(700, 355)
11 - canvas:adjustWorldWindow(-180, -90, 180, 90)
12 - geomcol = dataset:getType():getDefaultGeomPropertyPos()

13 - while dataset:moveNext() do
14 -          g = dataset:getValue(geomcol)
15 -          canvas:draw(g) --desenha cada país
16 - end

17 - canvas:save("country.png")
```

Exemplo Lua



Aplicativo Exemplo

- WebServer LUA (wsapi-xavante)
- PostGIS for PostgreSQL 8.4
- Importado shapefile com divisão política dos países
  - Datum WGS84 - SRID 4326

Edit Data - PostgreSQL 8.4 (localhost:5432) - postgis - country

Arquivo Editar Visualizar Ferramentas Ajuda

Sem limite

	gid [PK] serial	fips_cntry character var	gmi_cntry character var	cntry_name character var	sovereign character var	pop_cntry numeric(10,0	sqkm_cntry double precis	sqmi_cntry double precis	curr_type character var	curr_code character var	landlocked character var	color_map character var	the_geom geometry
1	1	AA	ABW	Aruba	Netherlands	67074	182.926	70.628	Florin	AWG	N	1	0106000020E6100000010000000103
2	2	AC	ATG	Antigua and Bar	Antigua and Bar	65212	462.378	178.524	EC Dollar	XCD	N	2	0106000020E6100000020000000103
3	3	AF	AFG	Afeganistão	Afeganistão	17250390	641869.188	247825.703	Afghani	AFA	Y	3	
4	4	AG	DZA	Algeria	Algeria	27459230	2320972	896127.312	Dinar	DZD	N	3	
5	5	AJ	AZE	Azerbaijan	Azerbaijan	5487866	85808.203	33130.551	Manat		Y	4	
6	6	AL	ALB	Albania	Albania	3416945	28754.5	11102.11	Lek	ALL	N	6	0106000020E6100000010000000103
7	7	AM	ARM	Armenia	Armenia	3377228	29872.461	11533.76	Dram		Y	7	
8	8	AN	AND	Andorra	Andorra	55335	452.485	174.704	Peseta	ADP	Y	8	0106000020E6100000010000000103
9	9	AO	AGO	Angola	Angola	11527260	1252421	483559.812	Kwanza	AOK	N	1	
10	10	AQ	ASM	American Samoa	United States	53000	186.895	72.16	US Dollar	USD	N	2	0106000020E6100000010000000103
11	11	AR	ARG	Argentina	Argentina	33796870	2781013	1073749	Peso	ARA	N	8	
12	12	AS	AUS	Australia	Australia	17827520	7706142	2975342	Australia Dollar	AUD	N	4	
13	13	AU	AUT	Austria	Austria	7755406	83738.852	32331.57	Schilling	ATS	Y	1	
14	14	AV	AIA	Anguilla	United Kingdom	9208	86.296	33.319	EC Dollar	XCD	N	6	0106000020E6100000010000000103
15	15	AY	ATA	Antarctica	Antarctica	0	12302740	4750088			N	7	
16	16	BA	BHR	Bahrain	Bahrain	575814	657.268	253.771	Dinar	BHD	N	8	0106000020E6100000030000000103
17	17	BB	BRB	Barbados	Barbados	260627	439.942	169.862	Dollar	BBD	N	1	0106000020E6100000010000000103
18	18	BC	BWA	Botswana	Botswana	1446623	580011.188	223942.297	Pula	BWP	Y	2	
19	19	BD	BMU	Bermuda	United Kingdom	59973	39.412	15.217	Dollar	BMD	N	3	0106000020E6100000010000000103
20	20	BE	BEL	Belgium	Belgium	10032460	30479.609	11768.18	Franc	BEF	N	4	
21	21	BF	BHS	Bahamas, The	Bahamas, The	272209	12867.78	4968.25	Dollar	BSD	N	5	
22	22	BG	BGD	Bangladesh	Bangladesh	120732200	138507.203	53477.629	Taka	BDT	N	6	
23	23	BH	BLZ	Belize	Belize	207586	22174.82	8561.698	Dollar	BZD	N	7	0106000020E6100000030000000103
24	24	BK	BIH	Bosnia and Herz	Bosnia and Herz	2656240	51403.379	19846.85			N	8	
25	25	BL	BOL	Bolivia	Bolivia	7648315	1090353	420985.312	Boliviano	BOB	Y	2	
26	26	BM	MMR	Myanmar (Burm	Myanmar (Burm	43099620	669820.875	258617.797	Kyat	BUK	N	8	

Obrigado!