SIMPLE PARALLEL PROGRAMMING WITH PATTERNS AND OMNITHREADLIBRARY

Primož Gabrijelčič
WWW.THEDELPHIGEEK.COM, @THEDELPHIGEEK, SKYPE: GABR42
HTTP://PRIMOZ.GABRIJELCIC.ORG

Intro music: Nothing is Permanent by Deathmøle, http://deathmole.bandcamp.com
PARALLEL PROGRAMMING

The art of doing multiple things at the same time
WHY?

- CPUs are not getting any faster
- They just contain more and more parallel cores
WHEN?

- Slow background process
- Background communication
- Executing synchronous API
- Multicore data processing
- Multiple clients
THREAD VS. TASK

- *Task* is part of code that has to be executed
- *Thread* is the execution environment

- .NET – Task Parallel Library
- Delphi – Parallel Programming Library (XE7)
- Delphi – OmniThreadLibrary (2007)
PATTERN APPROACH

- Working with building blocks
- .NET – foreach, Dataflow
- C# – async
- Delphi PPL (XE7) – Future, For, Join
- Delphi OTL (2009) – Async, Future, Join, For, Pipeline ...
ASYNC/AWAIT DEMO
Never, never, never access UI from a background thread!

NEVER!
Async(
    some_code // executed in a background thread
).Await(
    other_code // executed in a main thread
)
PARALLEL PATTERNS

- Async/Await
- Async
- Future
- ForEach / For
- Join
- Parallel task
- Pipeline
- Background worker
- Fork/Join
- Map
PROJECT STATUS

- http://www.omnithreadlibrary.com
- Google+ community *OmniThreadLibrary*
- StackOverflow [omnithreadlibrary]
- http://www.thedelphigeeek.com
- http://primoz.gabrijelcic.org
- Twitter: @thedelphigeeek
  Skype: gabr42