there can be enough
actors for anyone

who

Jiří Zůna

@zuzkins

github.com/zuzkins/chakka

vzdelaninadotek.cz

- solution for bringing iPads into teaching
- support and train teachers
- own sw to test students on iPad

controlling the progress of a test in realtime

we rolled out our own© solution based on polling the API

and after some time rewrote it using websockets

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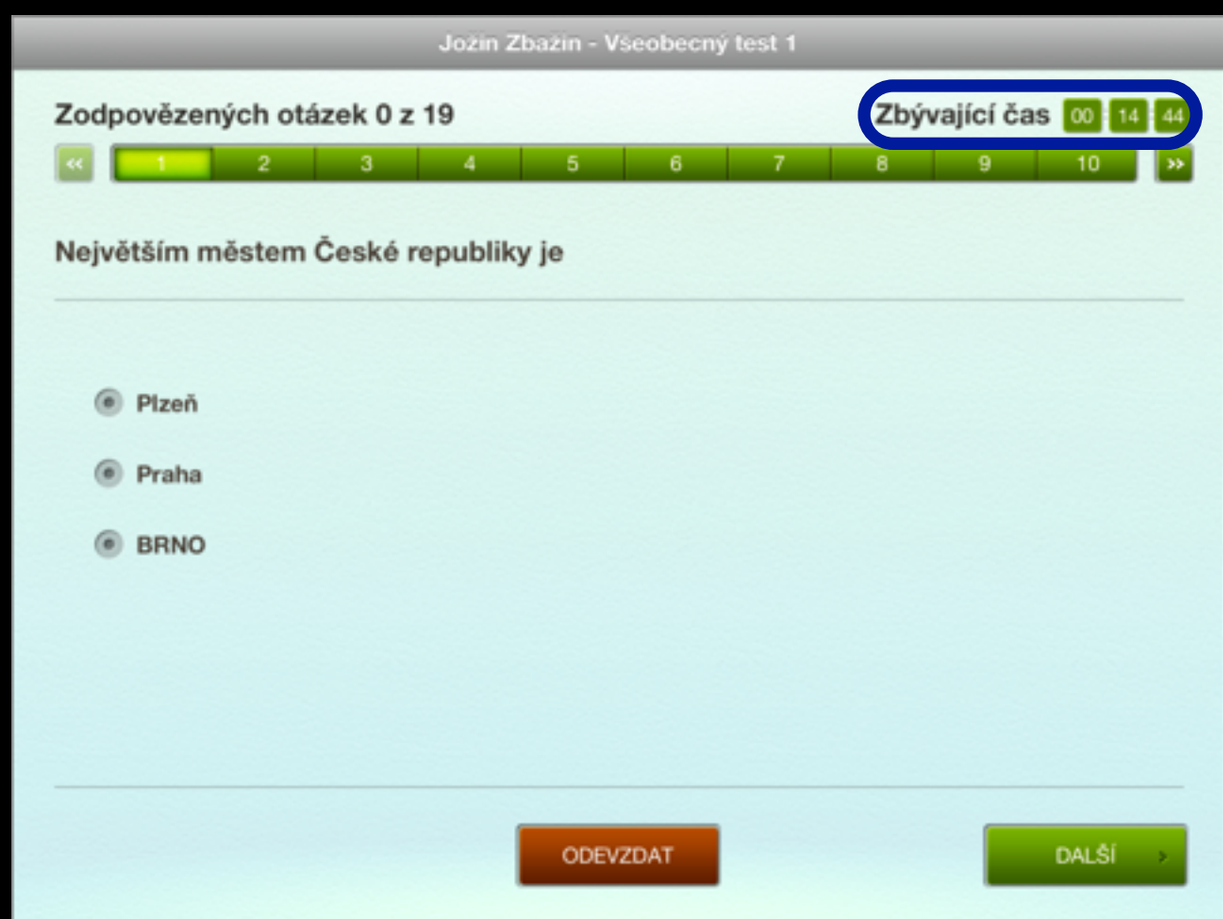

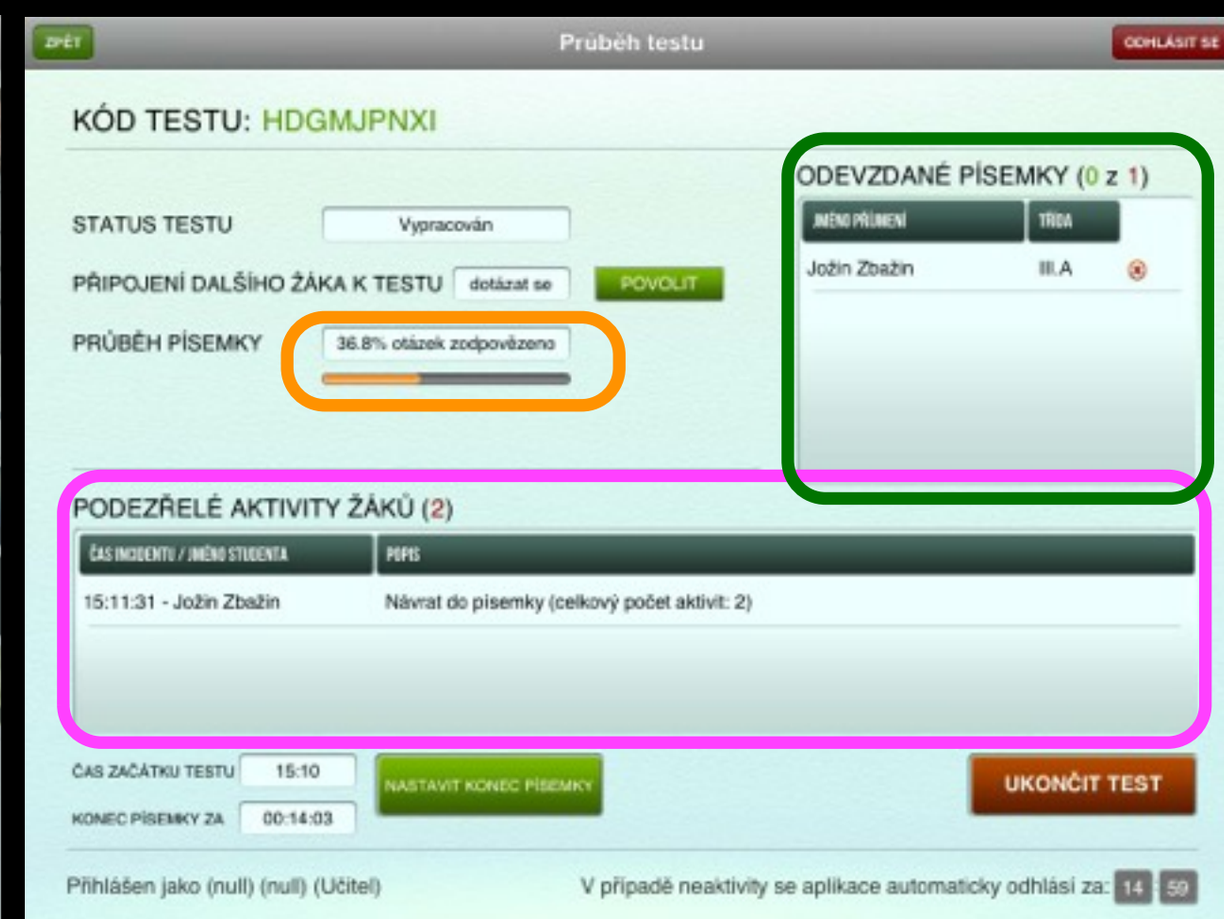

implementation

- API: scala with Spring MVC
  - jetty 8.1 supports ws
  - Akka handles msg parsing/sending and clients connected

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  - jetty 8.1 supports ws
  - Akka handles msg parsing/sending and clients connected
- Objective C
  - https://github.com/square/SocketRocket

jetty

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```
class WsServlet extends WebSocketServlet {
  def doWebSocketConnect(request: HttpServletRequest, protocol: String) = new Ws()
}

class Ws extends OnTextMessage {

  def onMessage(data: String) {
    println("Message got through websocket: " + data)
  }
}
```

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why actors and Akka

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- great testability
- awesome documentation

actor 101

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- state & behavior

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- ref ! Do

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- val future = ref ? Question

actor 101

- state & behavior
- ref ! Do
- val future = ref ? Question
  - answers will come in the Future[+T]

actor 102

```
class ChatRoomRegistry extends Actor with ActorLogging {

  var chatRooms = Set.empty[ChatRoom]

  def receive = {
    case ListRooms                          => listRooms()
    case msg: JoinRoom                      => joinRoom(msg)
  }
```

actor 102

```
class ChatRoomRegistry extends Actor with ActorLogging {

  var chatRooms =

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must extend Actor

actor 102

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actor 102

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actor 102

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```

defines behavior

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```

receive method (PartialFunction[Any, Unit])
is

guaranteed to process only 1 message at a time

one does not simply create an actor

1. you need to create the actor system

```
val actorSystem = ActorSystem("chakka")
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2. then you can ask it to create the actor

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val ref = actorSystem.actorOf(Props[ChatRoomRegistry], CHAT_REGISTRY_NAME)
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val ref = actorSystem.actorOf(Props[ChatRoomRegistry], CHAT_REGISTRY_NAME)
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3. which call gives you back an ActorRef (that is actually really good thing)

ActorRef

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- no way to mess with the implementation
- calling code does not know how the message will be handled
- tiny interface: ! (tell) is the most important

ref ! Dolt(For(“me”))

ref ! DoIt(For(“me”))

- fire&forget

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- puts the message => ref’s mailbox

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- fire&forget
- puts the message => ref’s mailbox
- ActorSystem schedules execution

what does Future[+T] hold

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what does Future[+T] hold

- ref can be ? asked to return result
- it actually gives back only a future
- doesn’t block and requires a timeout

enter Chakka

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- 1 servlet

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  - ChatRoomRegistry joins people into chatrooms

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- 1 servlet
- 2 types of actors
  - ChatRoomRegistry joins people into chatrooms
  - ChatRoomActor handles communication for 1 chat room

ChatRoomRegistry

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  def joinRoom(msg: JoinRoom) {
    val roomName = msg.roomName
    val room = chatRooms.find(_.name == roomName) match {
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        val ref = context.system.actorOf(Props(new ChatRoomActor(msg.roomName)))
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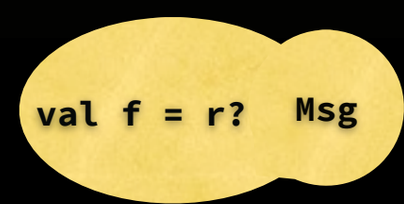

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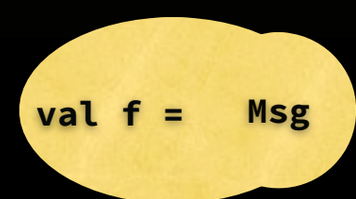

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RoomActor

ChatRoomActor

```
class ChatRoomActor(val name: String) extends ChatRoomManager
  with ChatController
  with ChatSocketFactory
  with ActorLogging
  with GsonProvider {


  override def receive = super[ChatRoomManager].receive orElse receiveChatMsgs

  def eventTarget = self
}
```

zeta.zunovi.cz:8080

lets look at the code

thank you!