

Архитектура для автоматизированного тестирования UI

Антон Бевзюк
Intel

План

- Кто?
- Зачем?
- Как?
- Паттерны
- Сложные модели

KTO?

КТО?



- Программист
- Руководитель разработки
- Тренер студентов и сотрудников

ЗАЧЕМ?

UI – это лицо программы



UI — ЭТО КОД

UI бывает сложный

The image displays the Antares Filter software interface, which is a complex and cluttered user interface (UI) for audio processing. The interface is divided into several sections:

- Master Section:** Includes a Clip indicator, Filter Display Style (Hz/Note), Tempo Source (Int/MIDI/Clock), Tempo (120.0 bpm), Input Level (-6.4 dB), and MIDI Setup.
- Filter Routing:** A diagram showing the routing of four filter stages (1, 2, 3, 4) through various paths.
- Rhythm Generators:** A section for generating rhythmic patterns, including a Sync knob, Beats, and To Master options.
- Filter Stages (1-4):** Each stage has its own set of controls, including On/Solo/Frequency Link buttons, Frequency (90.0 Hz to 6.4 kHz), Filter Type (Lowpass, Bandpass, Notch, Highpass), Poles (6 or 8), Delay (Beats, Feedback, Time), Gain (-6.5 dB to -10 dB), Phase Invert, and Pan.
- Envelope Follower:** A section for envelope following, including Attack (15 ms) and Release (150 ms) knobs, a Clip indicator, and an Output Level knob (+1.4 dB).
- Filter Envelopes (FG 1-4):** Four individual envelope sections, each with a Trigger, Delay, Hold, and various shape options (Short pulse, Random ramp).

The interface is highly detailed, with numerous knobs, buttons, and sliders, making it a complex and potentially overwhelming environment for users.

Поддержка



Расширяемость

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Тестирова
ть
и
нужно



KAK?

Вручную



Автоматически

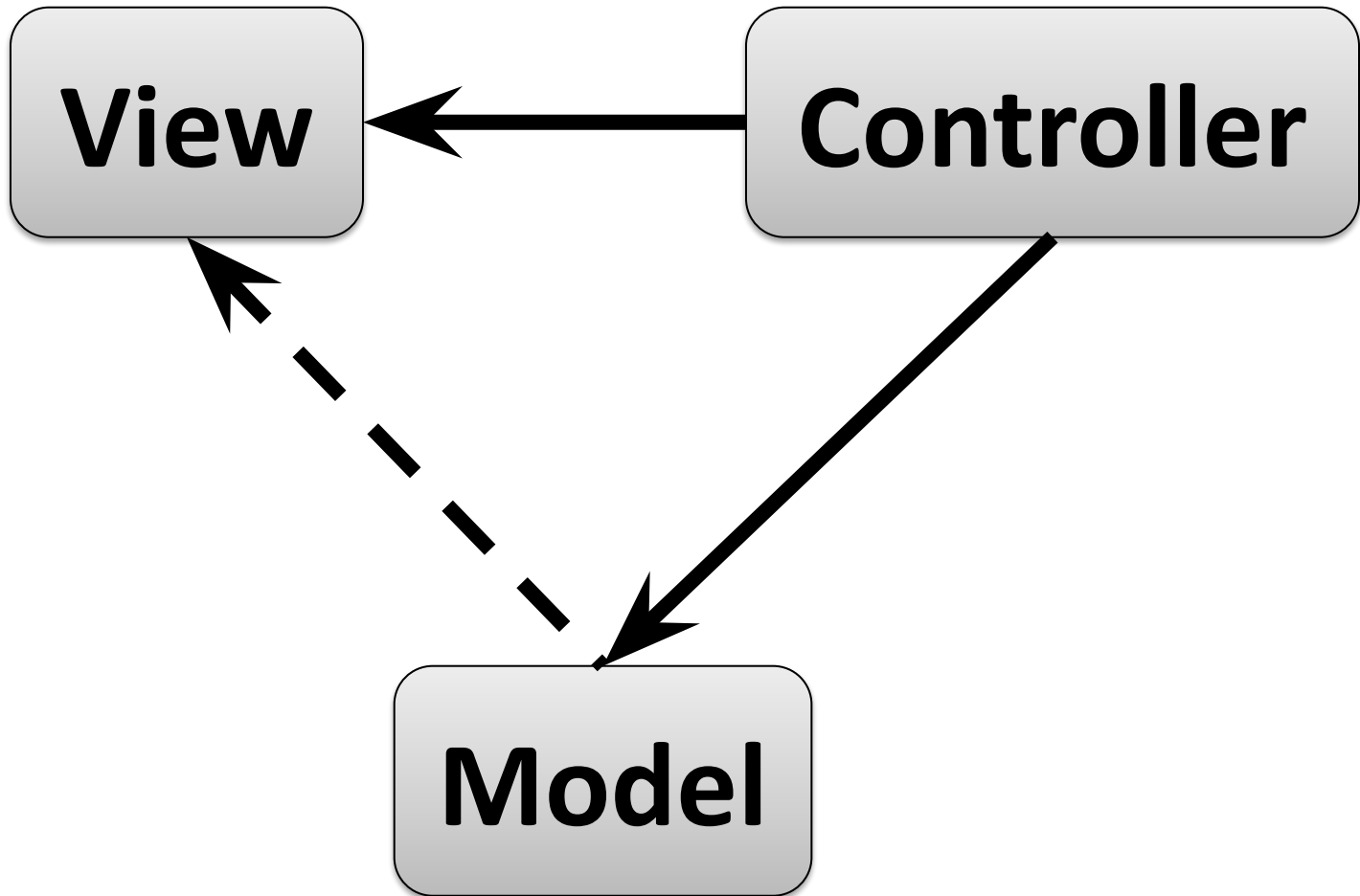


- Через UI

- Unit test

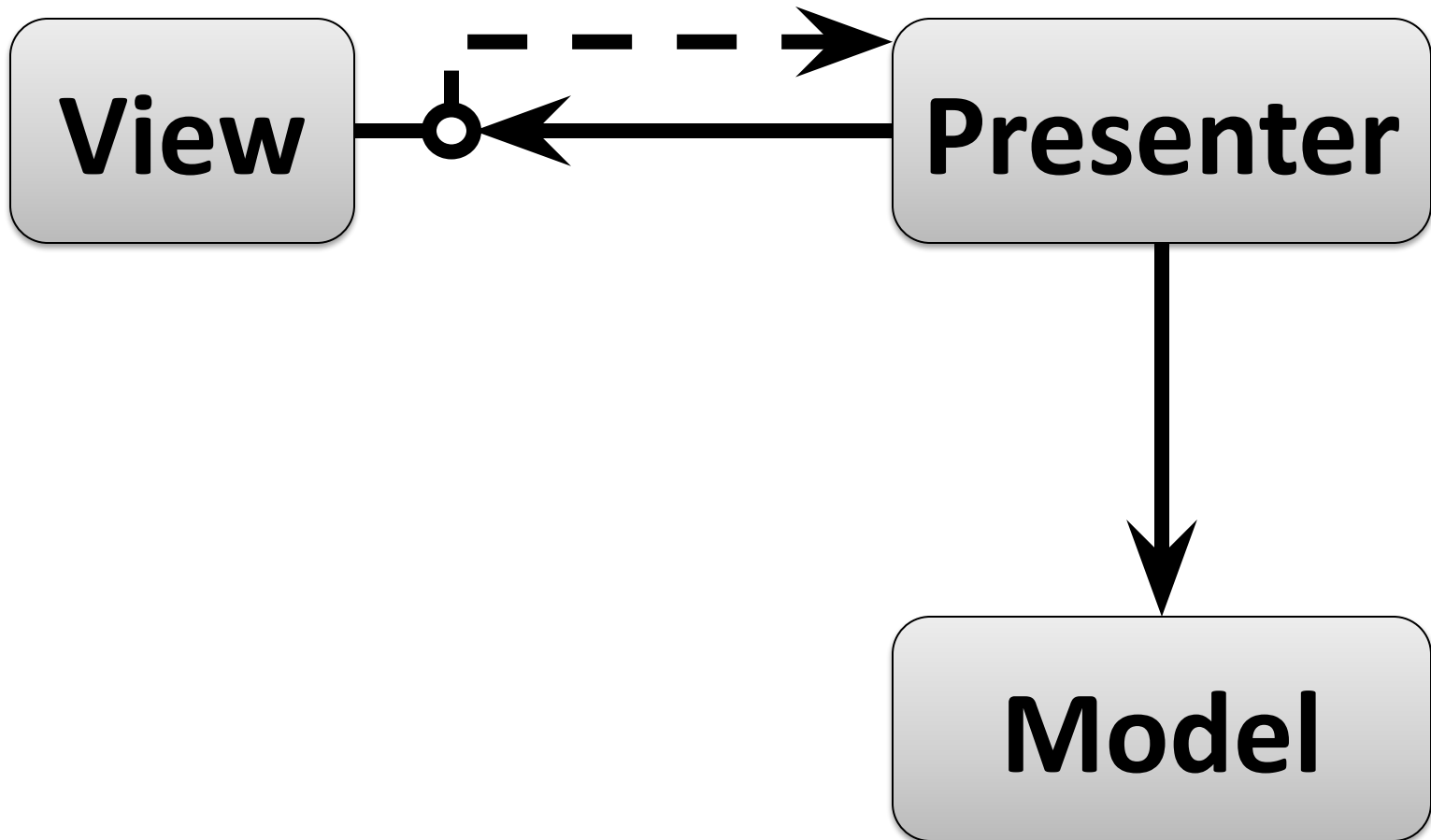
MVC

MVC

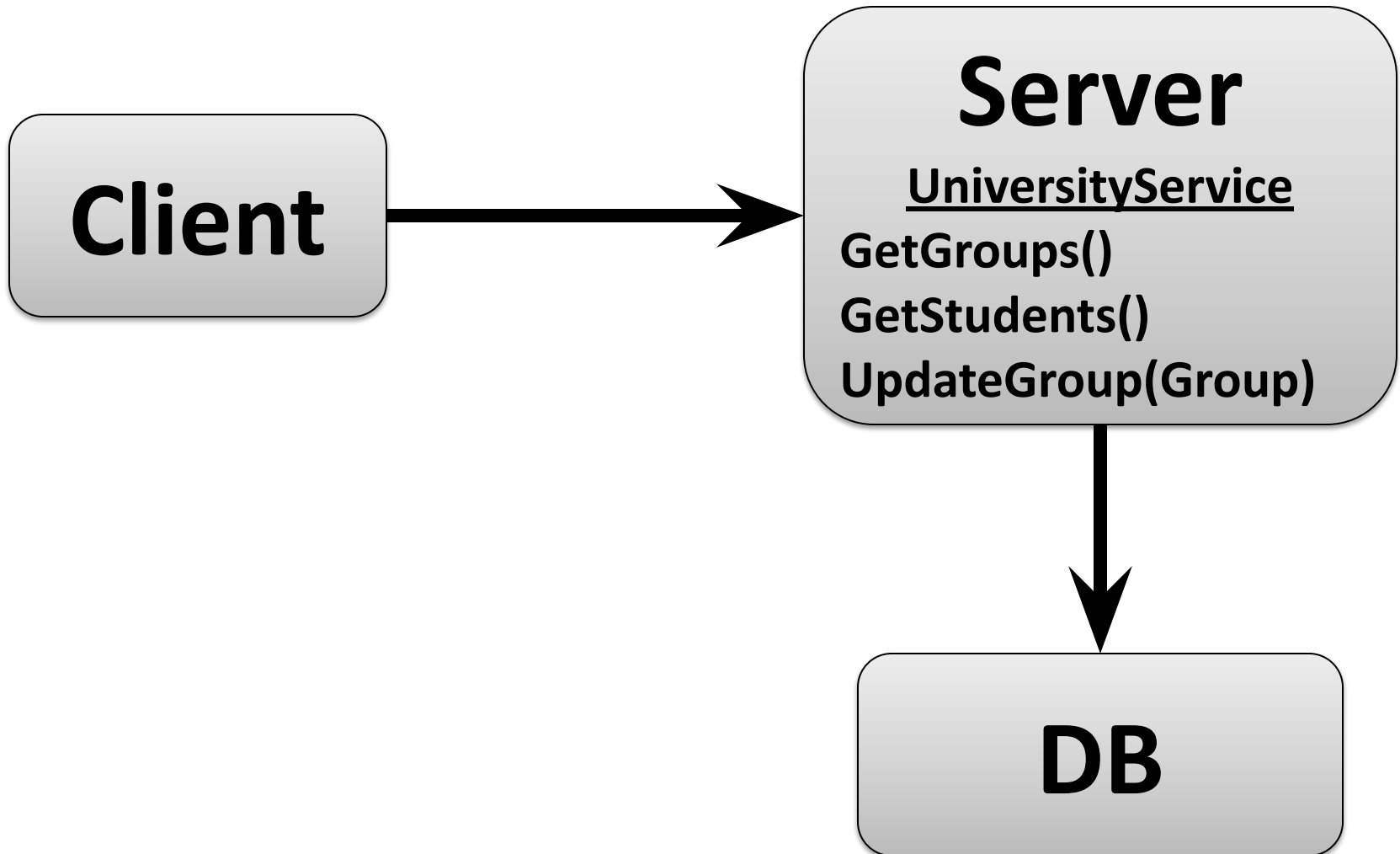


MVP

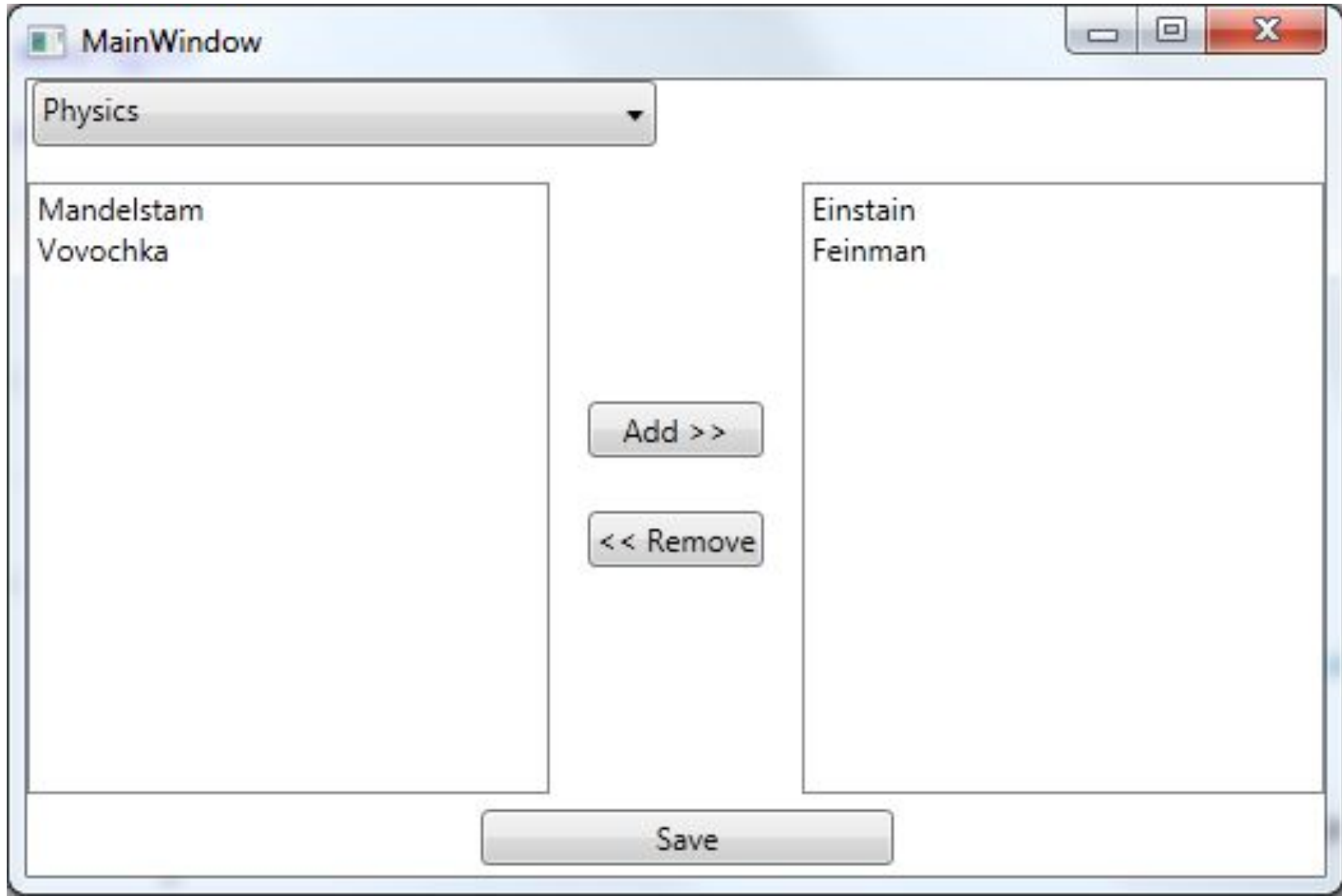
MVP



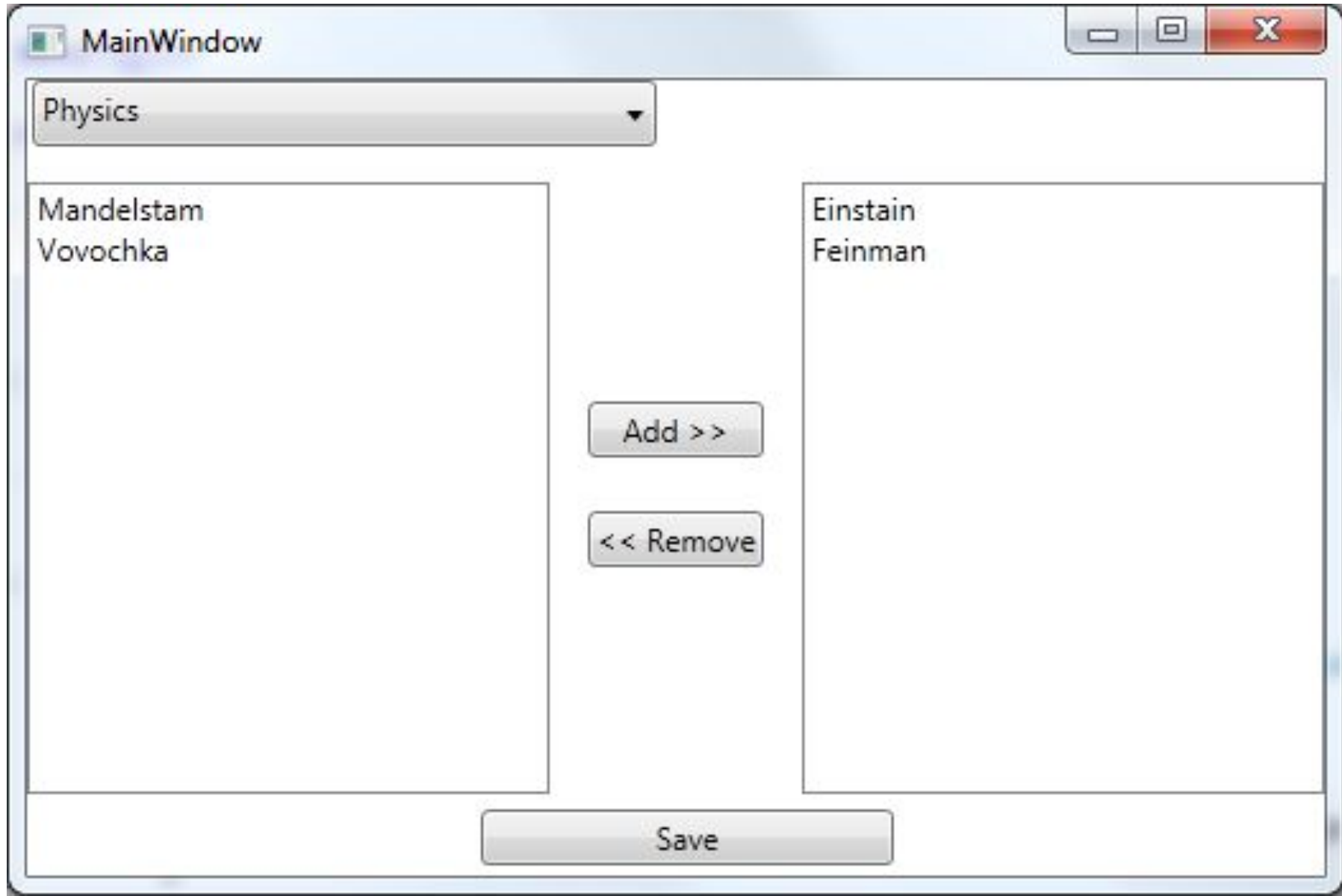
Архитектура



Client



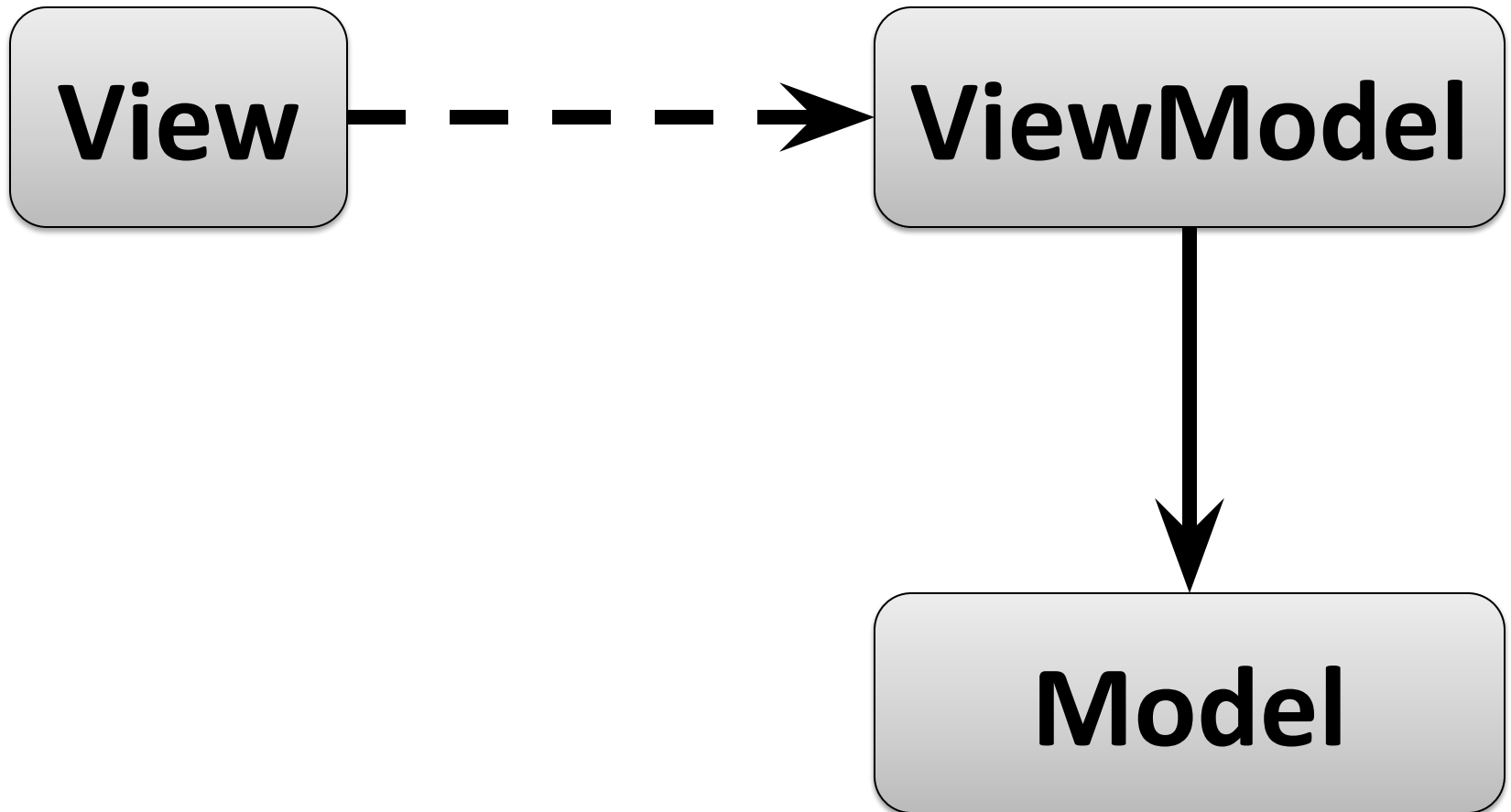
MVP demo



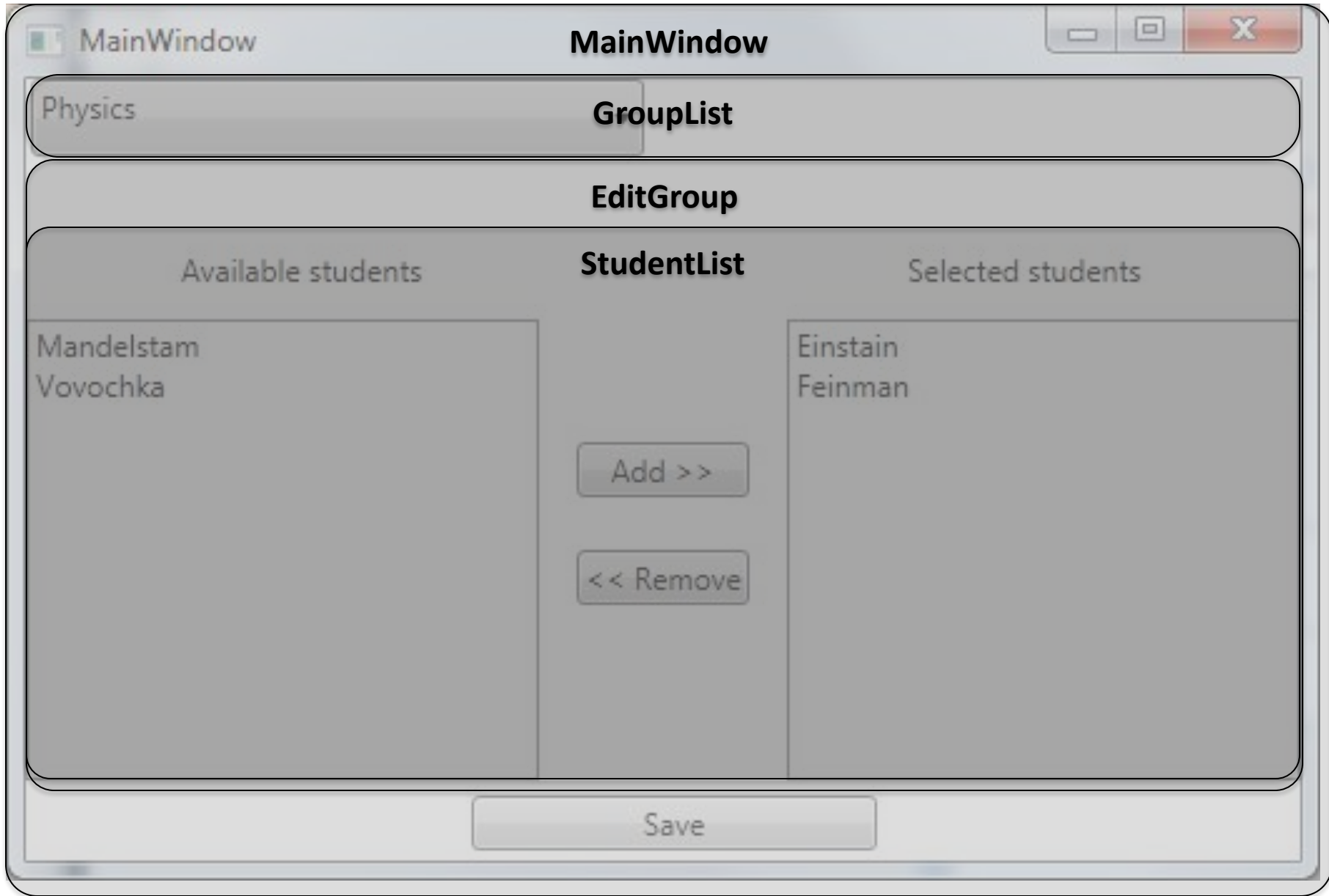
PM

MVVM

MVVM



MVVM demo



СЛОЖНЫЕ МОДЕЛИ

Как справиться со сложностью?

The image displays the Antares Filter software interface, which is a complex digital audio workstation (DAW) plugin. The interface is organized into several main sections:

- Master Section:** Located at the top left, it includes a Clip indicator, a Filter Display Style selector (Hz or Note), a Tempo Source selector (Int, MIDI, Clock), a MIDI Clock control, a Tempo knob (set to 120.0 bpm), a Tap Tempo button, a MIDI Setup button, and an Input Level knob (set to -6.4 dB).
- Filter Routing:** A central section showing a diagram of the filter chain and a list of routing options for the four filter channels.
- Rhythm Generators:** Located at the bottom left, it features a Sync knob, a Beats knob, and a To Master button, along with a grid for programming rhythmic patterns.
- Filter Channels (1-4):** Each channel has its own set of controls:
 - Channel 1:** Filter1, Lowpass, 6 poles, 90.0 Hz, 19% Q, -6.5 dB Gain, -54 Pan.
 - Channel 2:** Filter1, Bandpass, 8 poles, 310 Hz, 31% Q, +0.1 dB Gain, -31 Pan.
 - Channel 3:** Filter2, Notch, 8 poles, 1.3 kHz, 18% Q, -3.5 dB Gain, +42 Pan.
 - Channel 4:** Filter3, Highpass, 6 poles, 6.4 kHz, 10% Q, -10 dB Gain, +74 Pan.
- Delay Section:** Each filter channel includes a Delay section with Time, Feedback, and Mix controls.
- Envelope Follower:** Located at the bottom right, it includes an Envelope Follower section with Attack and Release knobs, a Clip indicator, and an Output Level knob (set to +1.4 dB).
- Source Amount Dest Table:** A table on the right side of the interface listing various sources and their amounts:

Source	Amount	Dest
1 Env 1	+36	F1 Freq
2 Lfo 1	+15	F1 Freq
3 Follower	-21	F2 Freq
4 Lfo 2	+36	F2 Pan
5 Lfo 3	+45	F3 Q
6 Lfo 4	+30	F4 Delay
7 M Note A	+100	F4 Freq
8 M Pres B	-27	Lfo4 Rate
9 Follower	+0	F1 Freq
10 RG 1	+0	F1 Freq
11 Env 2	+45	Mod1 Amt
12 M Note A	+0	F1 Freq

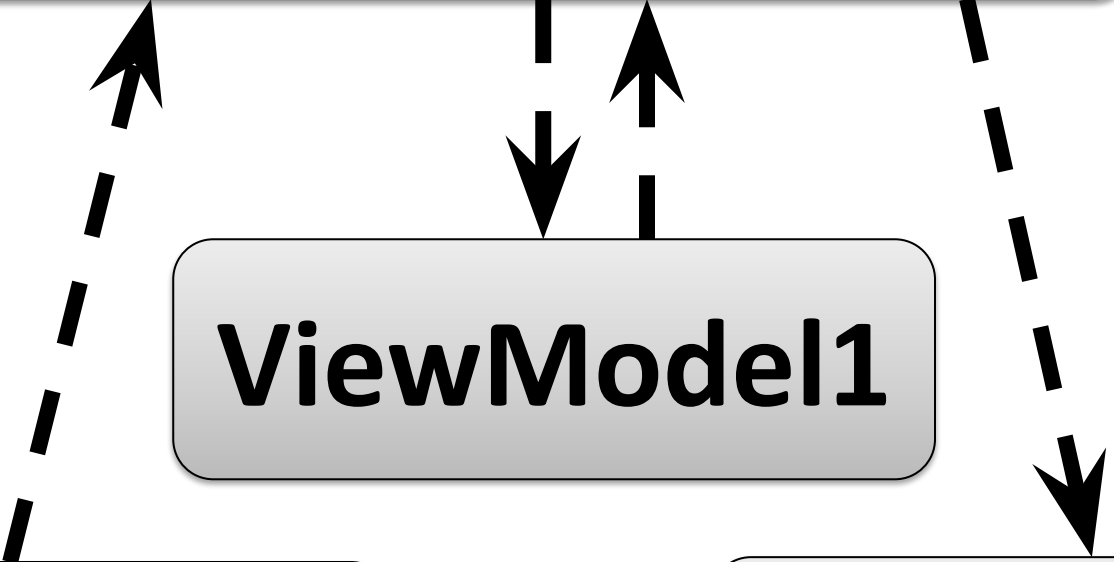
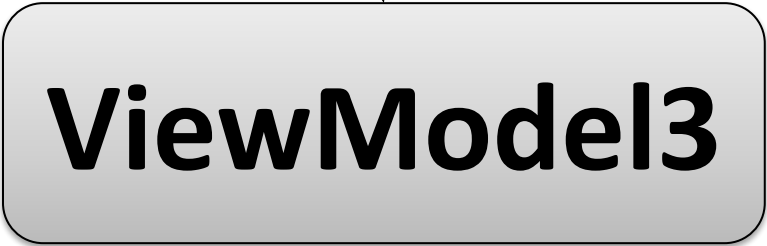
Декомпозиция

The image displays the Antares Filter software interface, which is used for audio signal processing. The interface is divided into several sections:

- Master Section:** Includes a Clip indicator, Filter Display Style (Hz/Note), Tempo Source (Int/MIDI/Clock), MIDI Clock, 120.0 bpm, Tempo, Top Tempo, and MIDI Setup.
- Input Section:** Features a Clip indicator, a level meter showing -6.4 dB, and an Input Level knob.
- Filter Routing:** A diagram showing the signal path through four filter stages (1, 2, 3, 4).
- Rhythm Generators:** A section for generating rhythmic patterns, including a Sync knob, Beats, and To Master options.
- Filter Stages (1-4):** Each stage has its own controls:
 - Stage 1:** Filter1, 90.0Hz, 19% gain, Lowpass, 6 poles, Delay 0%.
 - Stage 2:** Filter2, 310Hz, 31% gain, Bandpass, 8 poles, Delay 0%.
 - Stage 3:** Filter3, 1.3kHz, 18% gain, Notch, 8 poles, Delay 0%.
 - Stage 4:** Filter4, 6.4kHz, 10% gain, Highpass, 6 poles, Delay 0%.
- Envelope Follower:** Controls for Attack (15ms) and Release (150ms), and a Clip indicator.
- Output Level:** A level meter and a knob showing +1.4 dB.
- Filter Graph:** A central frequency response graph showing the combined effect of the four filters, with a color-coded area under the curve.
- Source Amount Dest Table:** A table on the right side of the interface listing various sources and their amounts:

Source	Amount	Dest
1 Env 1	+36	F1 Freq
2 Lfo 1	+15	F1 Freq
3 Follower	-21	F2 Freq
4 Lfo 2	+36	F2 Pan
5 Lfo 3	+45	F3 Q
6 Lfo 4	+30	F4 Delay
7 M Note A	+100	F4 Freq
8 M Pres B	-27	Lfo4Rate
9 Follower	+0	F1 Freq
10 RG 1	+0	F1 Freq
11 Env 2	+45	Mod1 Amt
12 M Note A	+0	F1 Freq

События



Агрегация

MainViewModel

ChildViewModel1

ChildViewModel2

ChildViewModel3

Еще раз

- Тестировать UI нужно
- Способов много
- MVC
- MVP
- MVVM
- Сложные модели

Спасибо!

АНТОН БЕВЗЮК

anton.bevzjuk@pisem.net

Skype: anton.bevzyuk

ICQ: 26248832

