XR4ALL_Survey_1

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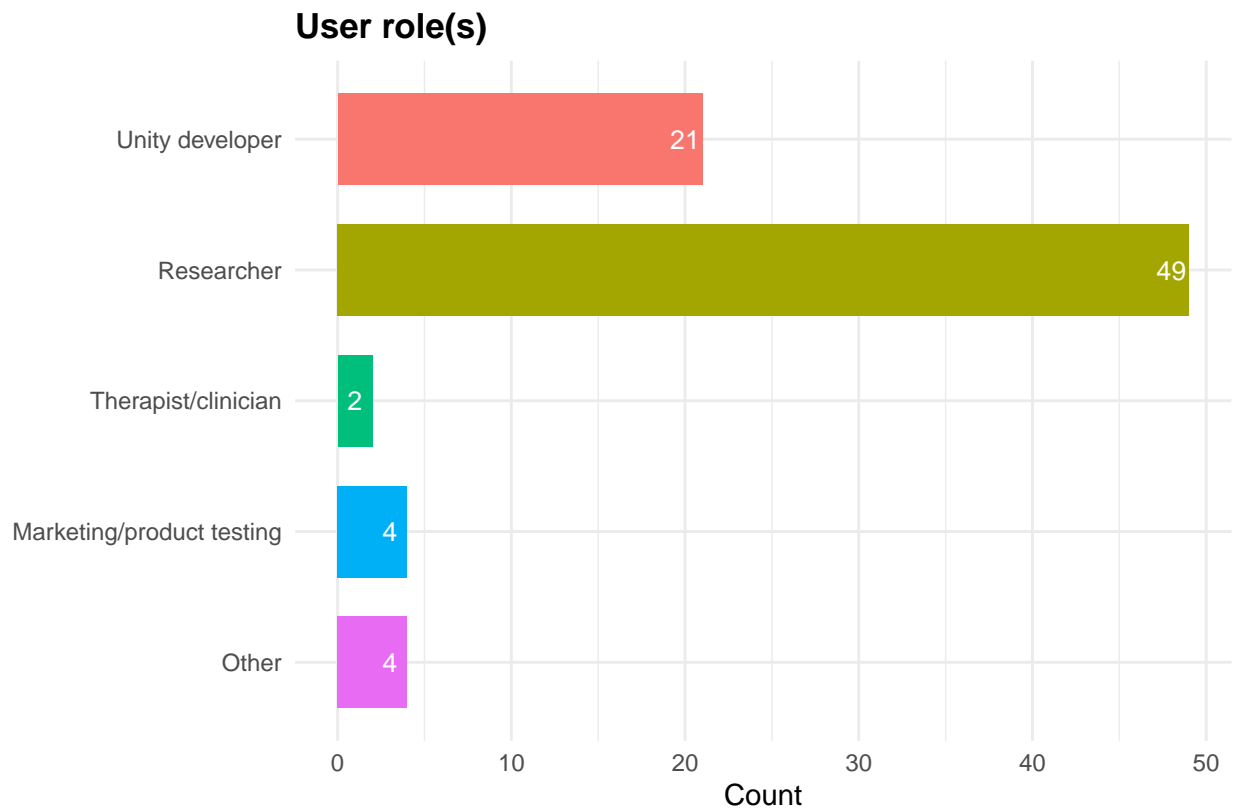*5/5/2020*

```
## 58 participants completed the survey.
```

66 people completed the first page.

58 people completed the whole survey.

```
## All user role counts:
```

```
##                    categories counts
## 1         Unity developer     21
## 2               Researcher     49
## 3      Therapist/clinician      2
## 4 Marketing/product testing     4
## 5                    Other      4
```
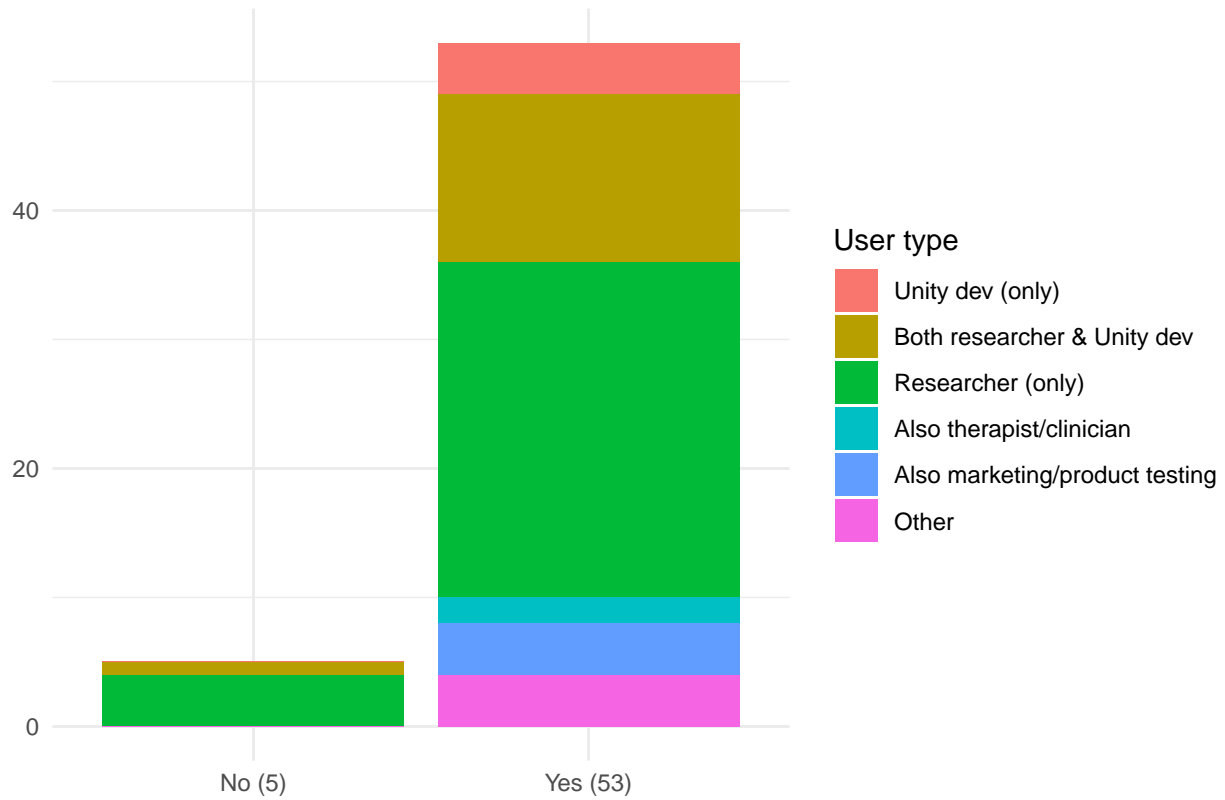
User role(s)

n = 58 (respondents could select multiple options)

```
##
## Q1 - "Other" elaboration:
```
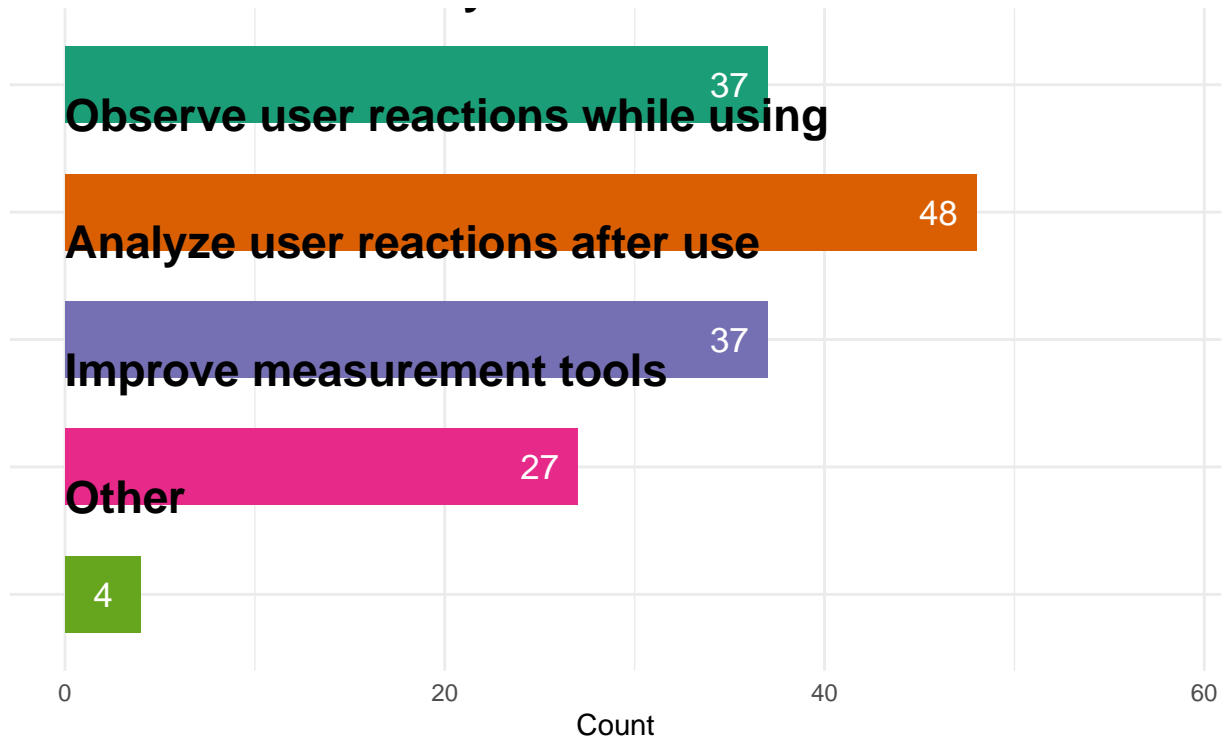
1

```
## # A tibble: 4 x 2
##     id 'Q01UserType[other]'
##  <dbl> <chr>
## 1    17 Cognitive scientist
## 2    46 Unreal engine developer and educator
## 3    70 UE4 Developer
## 4    85 entrepreneur
```

Are you interested in this plugin?


```
## Q2 Interest [ n =  58 ]
## Yes: 53
## No: 5
```

Preferred features

Observe user reactions while using — 37

Analyze user reactions after use — 48

Improve measurement tools — 37

Other — 27

4

Count

0   20   40   60

n = 58 (respondents could select multiple options)

Q3 What feature are you most interested in?
(Unity devs)

Make reactive Unity software — 18
Observe user reactions while using — 16
Analyze user reactions after use — 13
Improve measurement tools — 8
Other — 1

counts

0   5   10   15
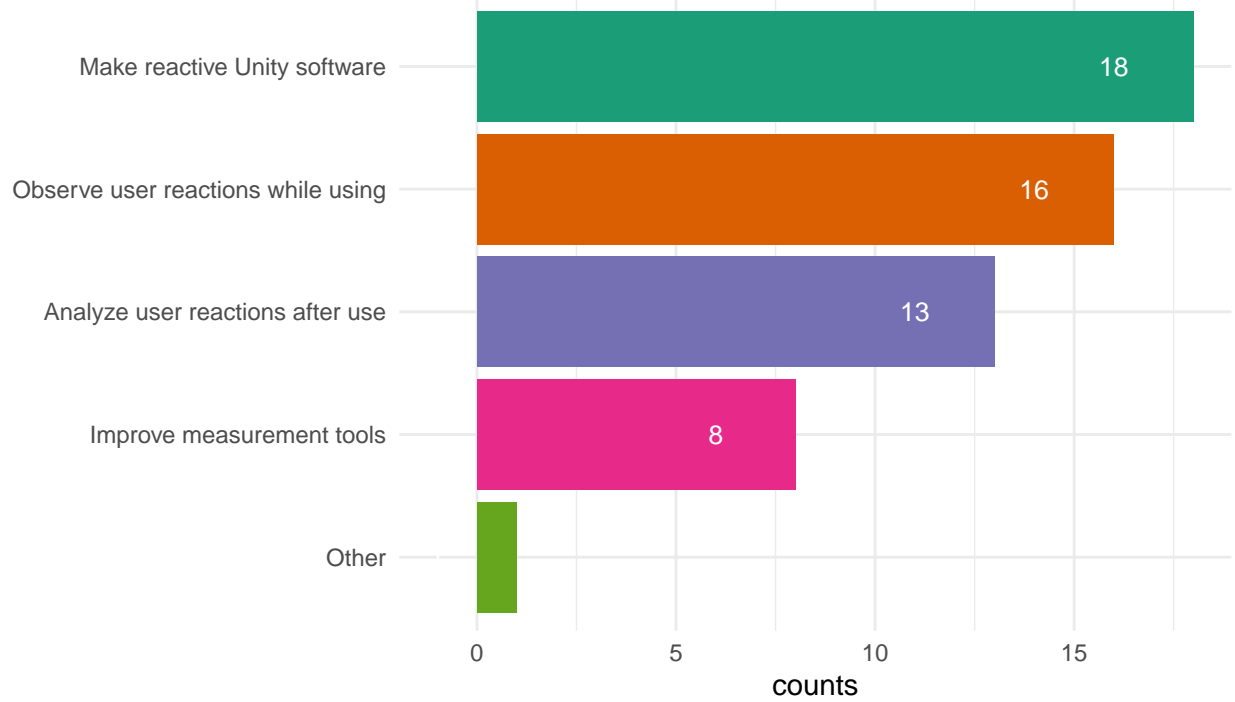
n = 21

Q3 What feature are you most interested in?
(Researchers)

Feature	Count
Make reactive Unity software	29
Observe user reactions while using	39
Analyze user reactions after use	35
Improve measurement tools	24
Other	4
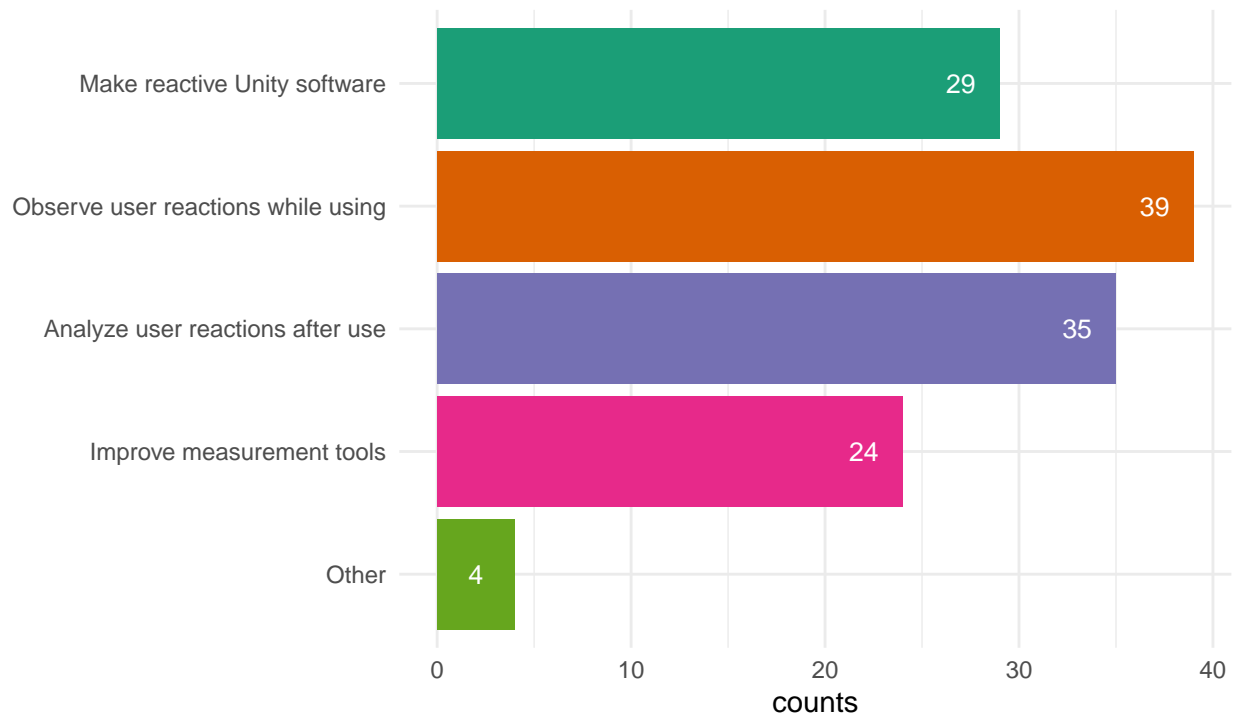
counts

n = 55

```
##               categories counts
## 1            Ask the user     37
## 2         Analyze behavior     33
## 3 Physiological (incl. HR)     29
## 4       Brain measurements     22
## 5             Record video     13
## 6                     None      3
## 7                    Other      3
```

Q4 How do you currently measure your users' experience?
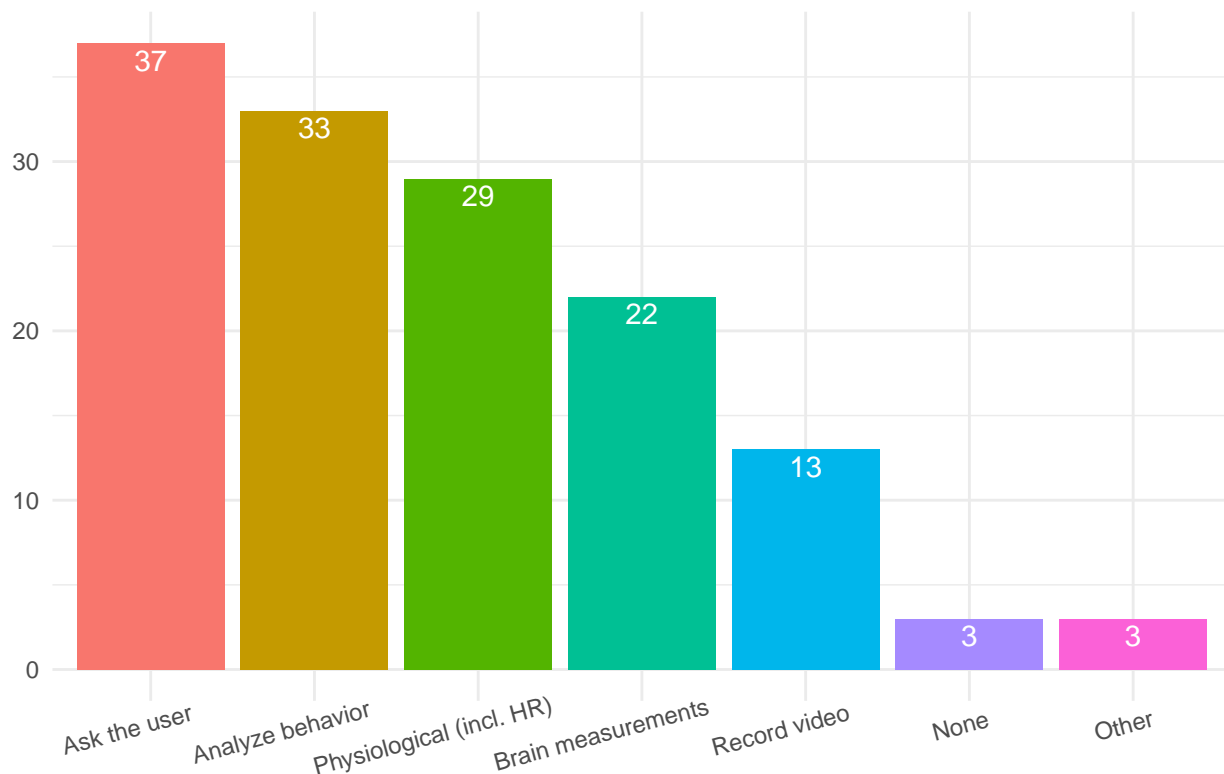

```
## 
## Physio

## If you measure physiology or brain, what hardware and software do you use?

## # A tibble: 19 x 3
##       id hardware                          software
##    <dbl> <chr>                             <chr>
## 1      2 Biopac mostly (with serial trigger~ Unity; Biopac's Acqknowledge
## 2      5 EGI                               Matlab
## 3      6 HTC Vive                          Unity
## 4     17 EEG, controller/joypad            Unity itself, LSL
## 5     31 mostly Oculus Quest VR            self made in Python
## 6     40 Biosemi                           Matlab
## 7     42 gtech eeg                         custom
## 8     51 Tower of Measurement (you can conn~ software included
## 9     54 HTC Vive                          Unity
## 10    65 Bitalino                          https://github.com/eegsynth/eegsyn~
## 11    70 One of the following: Apple Watch,~ Affectiva's Affdex Unity SDK for e~
## 12    71 various psychophysiological sensors various commercial and open-source~
## 13    72 Muse, Mindwave, Arduino, Polar    Arduino IDE, Lab Streaming Layer, ~
## 14    73 Shimmer3 GSR+, Schuhfried Resp and~ <NA>
## 15    77 biopac                            <NA>
## 16    79 ANT eego sports, general mocap mea~ LSL, MATLAB
## 17    81 Custom sensor set                 Custom scripts
```
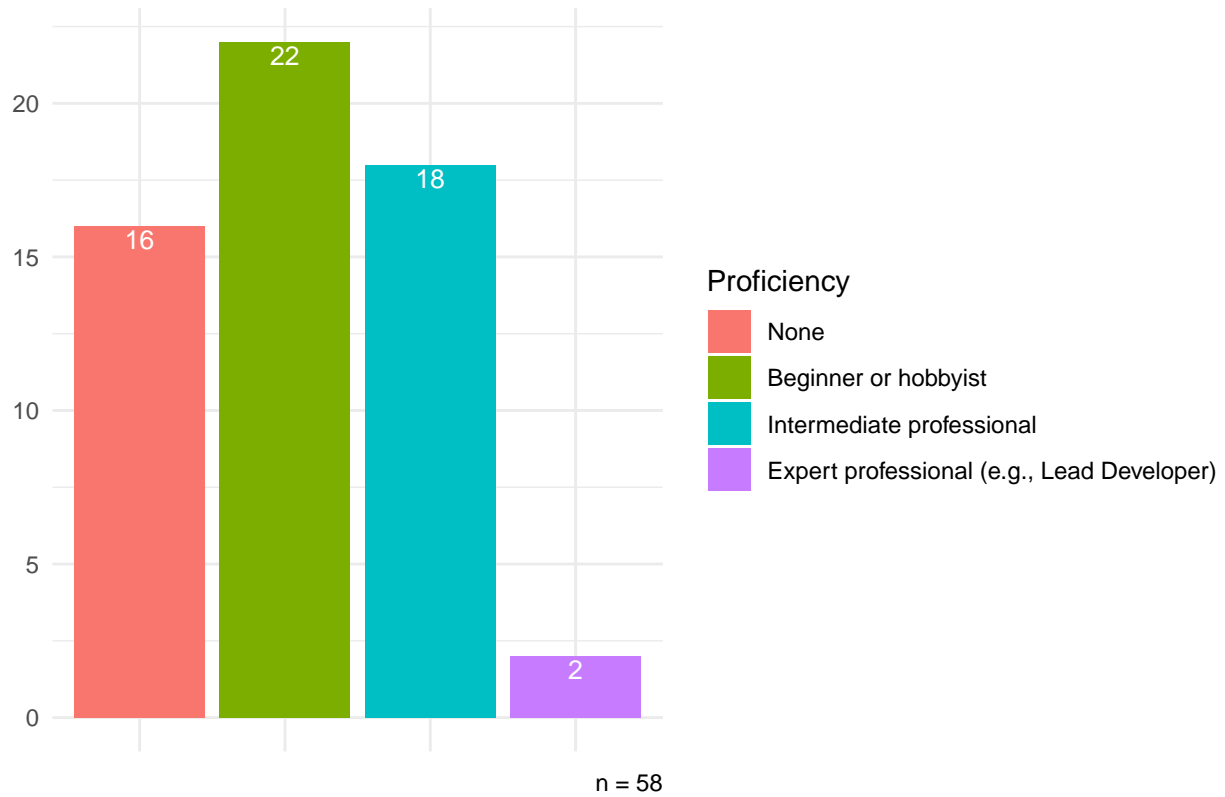
```
## 18    83 oculus                            unity, matlab
## 19    92 laptop, tablet, bitalino          limewire, googledrive


##                                          x freq
## 1 Expert professional (e.g., Lead Developer)    2
## 2                                      None   16
## 3                   Intermediate professional   18
## 4                        Beginner or hobbyist   22
```
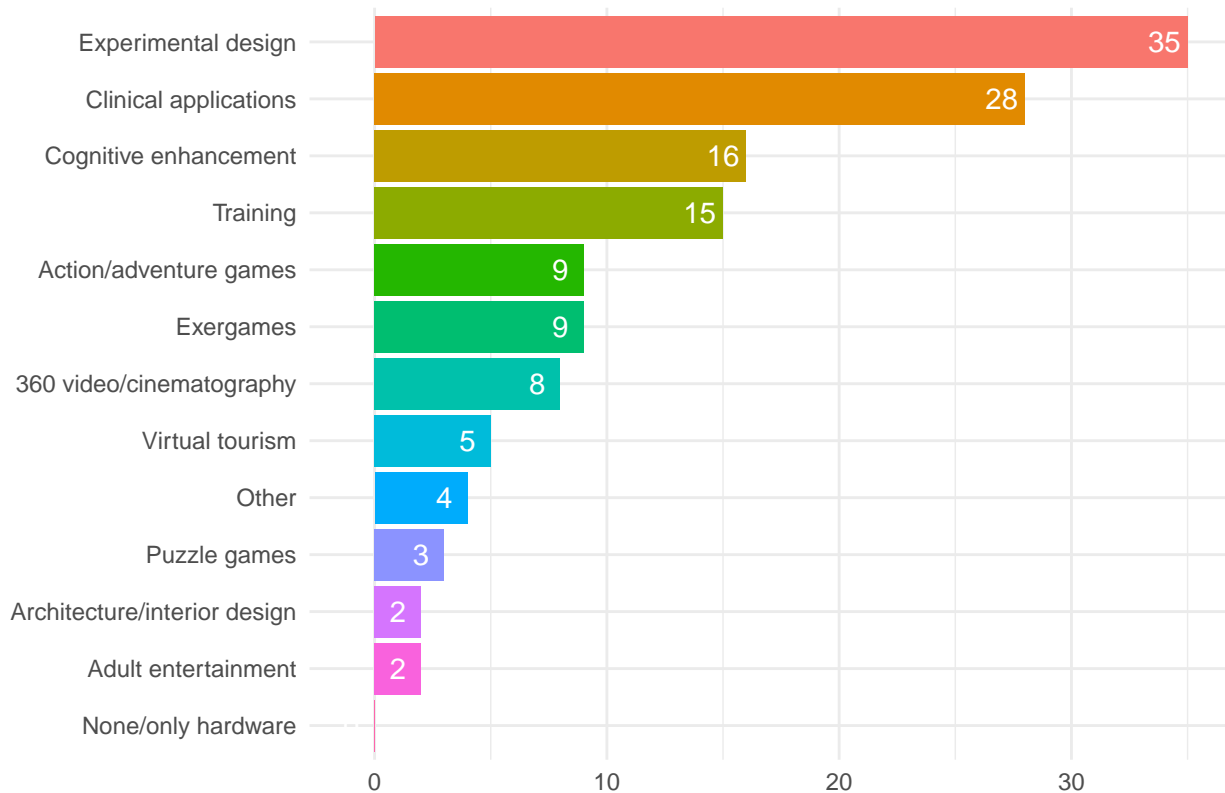
Q5 – Unity proficiency

n = 58

## Q6 – Types of XR applications


```
##                     categories counts
## 1          Experimental design     35
## 2          Clinical applications    28
## 3          Cognitive enhancement    16
## 4                     Training      15
## 5          Action/adventure games    9
## 6                    Exergames       9
## 7       360 video/cinematography     8
## 8              Virtual tourism       5
## 9                        Other       4
## 10                 Puzzle games      3
## 11 Architecture/interior design      2
## 12            Adult entertainment     2
## 13          None/only hardware       0


## # A tibble: 9 x 2
##      id Q065WhatIndustry
##   <dbl> <chr>
## 1     6 Defense
## 2    12 Research
## 3    27 Clinical Neuropsychology
## 4    31 immersive industry UK
## 5    46 Medical training: empathy designs and skillstraining
## 6    72 sports training, law enforcement training, biofeedback training
## 7    73 MedTech
```
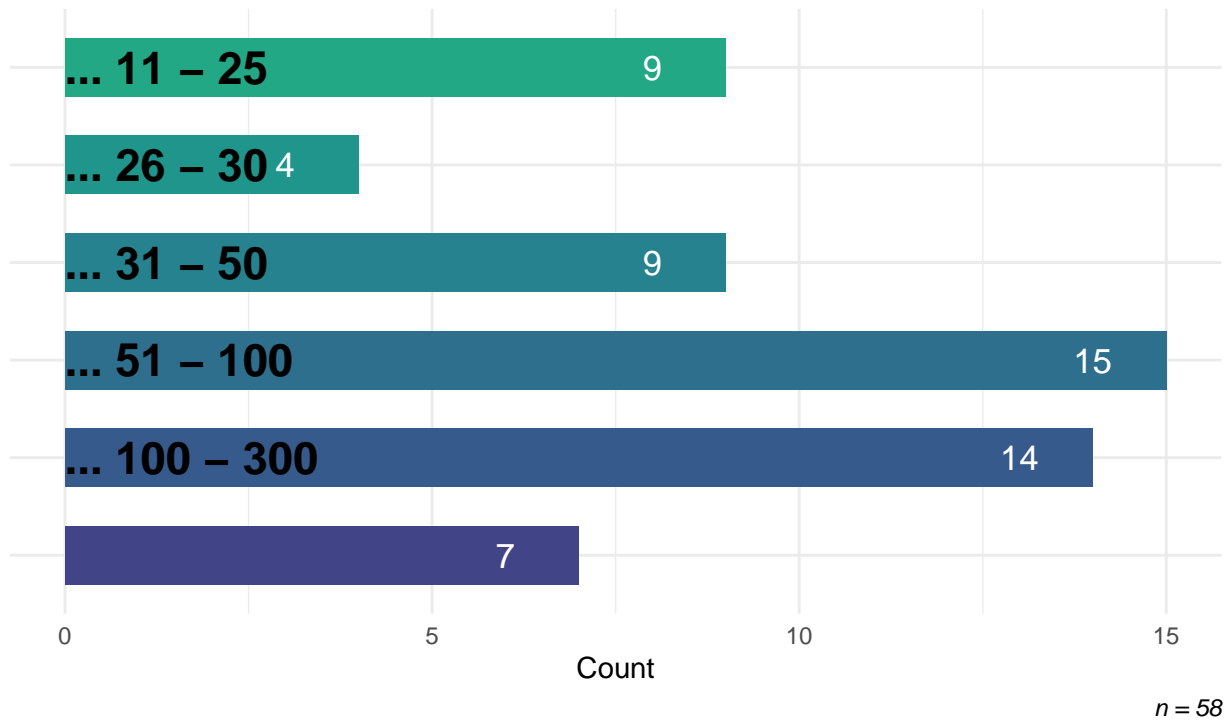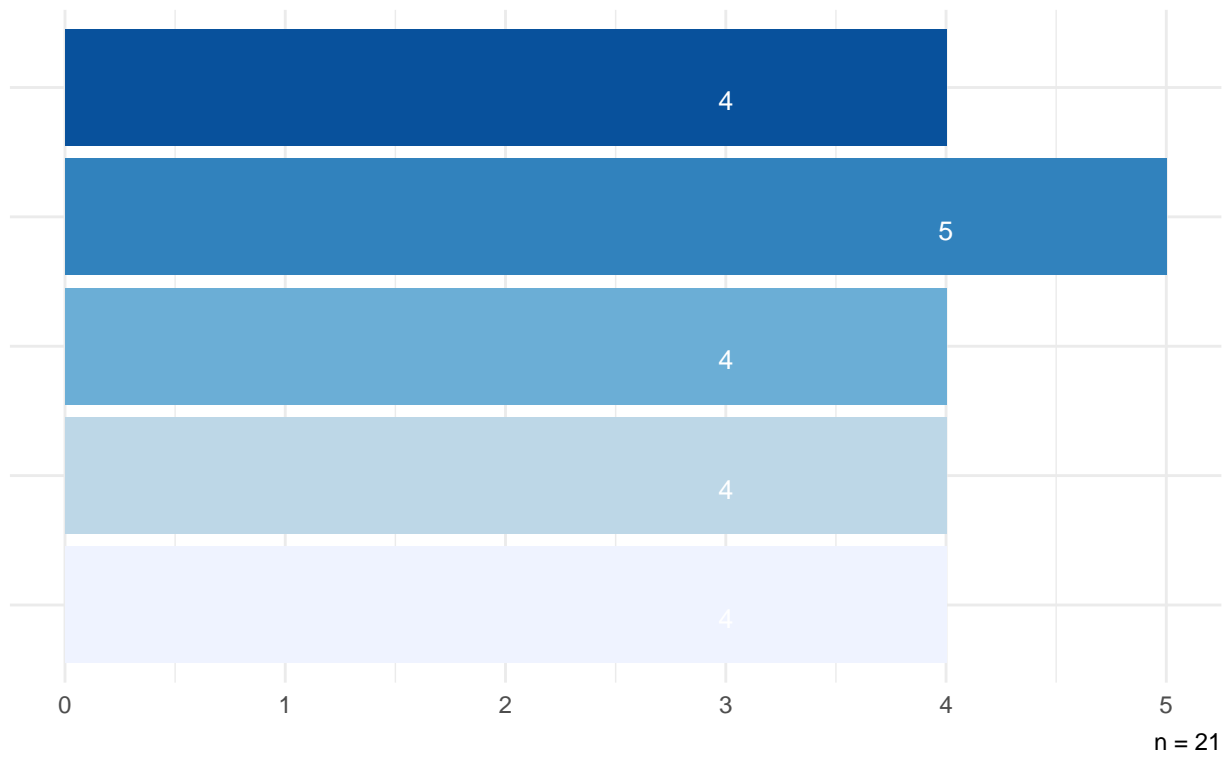
```
## 8     76 Dance for- Wellness/entertainment/education
## 9     92 education
```
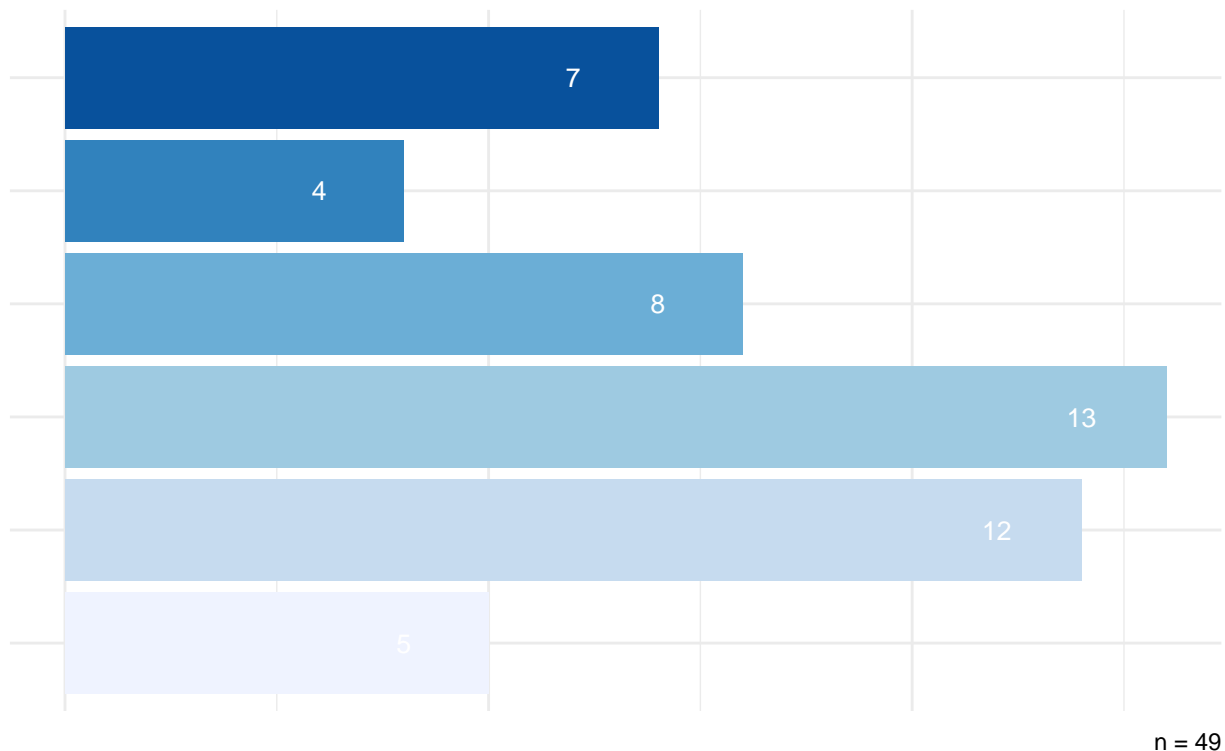
Q7 How often do you (or your company) pay for tools/plugin

n = 58
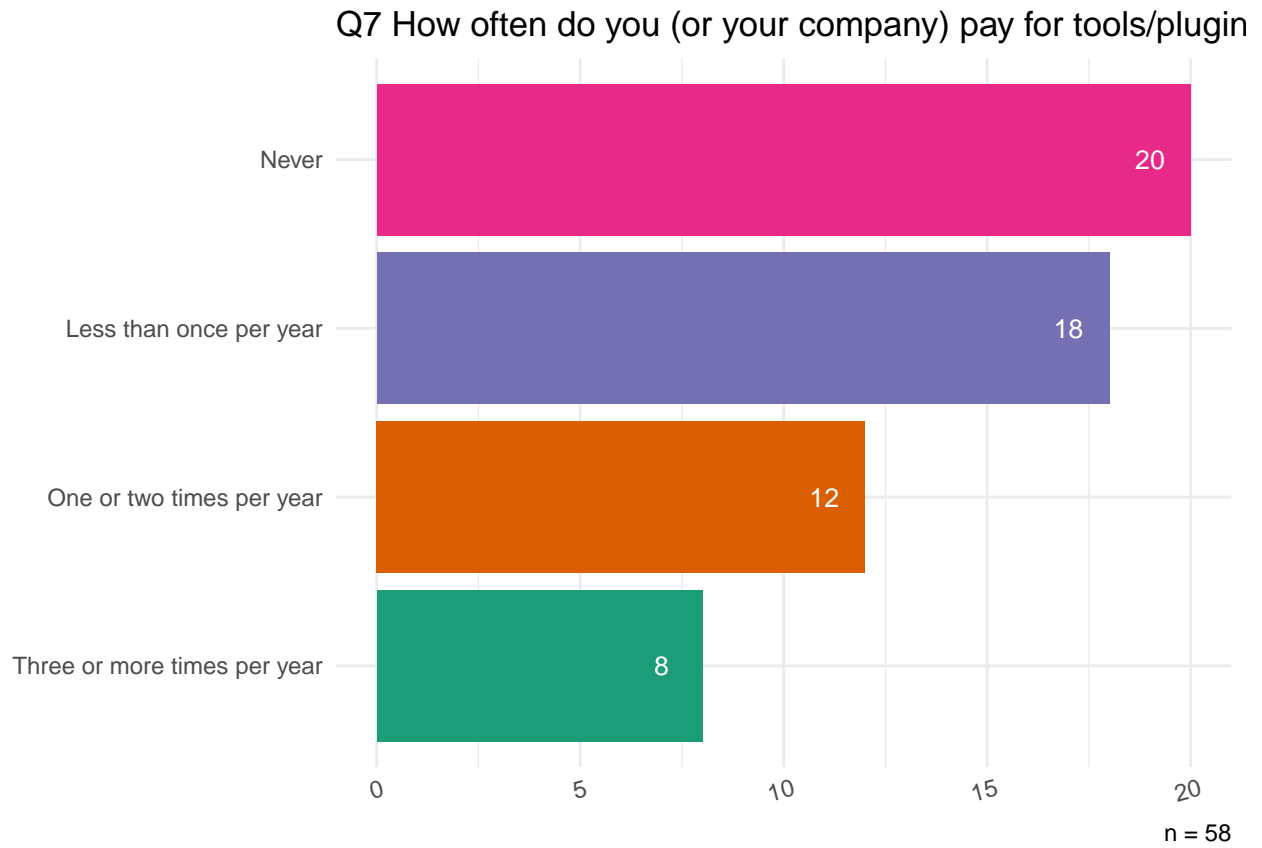
How much would you pay for one license?

Range	Count
... 11 – 25	9
... 26 – 30	4
... 31 – 50	9
... 51 – 100	15
... 100 – 300	14
	7

Count

n = 58

Q8 How much would you be willing to pay for one Excite–O–Meter license?
(Unity devs)

	4
	5
	4
	4
	4

n = 21

Q8 How much would you be willing to pay for one Excite–O–Meter license?
(Researchers)

n = 49

Q9 What is the number one thing you want us to consider while developing this plugin?

32 respondents answered this question.

[1] "No subscription, but one time license."
[2] "User friendly integration of physiological recording hardware and Unity"
[3] "Easy API for implementation and robust"
[4] "We use unreal. Not unity. Too bad. Still wanted to give you all the feedback I can. Good luck!"
[5] "Practical application to VR. VR is clumsy as it is already. \r\n"
[6] "No additional hardware and consistency over accuracy.\r\n\r\nBallistocardiography via imu?"
[7] "Data synchronization according to vr refresh rate\r\n"
[8] "Easy to handle, data can be processed with R or other programs, reliable"
[9] "Measuring fatigue\r\nValidating motivation during testing"
[10] "time precision"
[11] "Does the device makes the user conscious of his decisions in the game/application/product made"
[12] "I don't want to sound like a Debby downer but it is unclear how you would market this. I am in"
[13] "It would be nice if it was independent from Unity. For instance, one might be interested in us"
[14] "Reliability and Applicability to all/majority users"
[15] "Versatility and ease of use"
[16] "I'm an unreal developer, so next the unity plugin an u real plugin would be highly appreciated"
[17] "Compatibility with a relatively big number of biofeedback devices would be very helpful."
[18] "Ease of use/integration. Confidence levels of measurements."
[19] "easy to integrate with AR/VR SDKs + good tutorials + active online forum to answer developer qu"
[20] "Maximum out-of-the-box usability or support system. Access to source for own developments"
[21] "Making the software open source."

```
## [22] "Tutorials and easy explanation of processes.\r\nPreferably in Python"
## [23] "Flexibility/customization/extensibility options for the developers since many different develop
## [24] "Extensibility of plug-in and interoperability with various various psychophysiological sensors
## [25] "Ability for developer to modify interaction"
## [26] "Robustness of Use. The Biometrics are generally quite finicky, more so when integrated in real-
## [27] "A platform where I create an amazing one-of-a-kind VR immersive experience"
## [28] "how to design an amazing killer immersive experience for my users"
## [29] "cross-platform compatibility"
## [30] "???"
## [31] "I would have to be able to use LSL and select specific channels of a data stream as ECG channel
## [32] "Easiness of use"


## "","id","Q08WhatElse"
## "1",1,"No subscription, but one time license."
## "2",2,"User friendly integration of physiological recording hardware and Unity"
## "3",6,"Easy API for implementation and robust"
## "4",7,"We use unreal. Not unity. Too bad. Still wanted to give you all the feedback I can. Good luck
## "5",9,"Practical application to VR. VR is clumsy as it is already.
## "
## "6",12,"No additional hardware and consistency over accuracy.
##
## Ballistocardiography via imu?"
## "7",17,"Data synchronization according to vr refresh rate
## "
## "8",21,"Easy to handle, data can be processed with R or other programs, reliable"
## "9",27,"Measuring fatigue
## Validating motivation during testing"
## "10",28,"time precision"
## "11",35,"Does the device makes the user conscious of his decisions in the game/application/product ma
##
## Is it bulky to use?"
## "12",36,"I don't want to sound like a Debby downer but it is unclear how you would market this. I am
## "13",37,"It would be nice if it was independent from Unity. For instance, one might be interested in
## "14",39,"Reliability and Applicability to all/majority users"
## "15",43,"Versatility and ease of use"
## "16",46,"I'm an unreal developer, so next the unity plugin an u real plugin would be highly appreciat
## "17",51,"Compatibility with a relatively big number of biofeedback devices would be very helpful."
## "18",52,"Ease of use/integration. Confidence levels of measurements."
## "19",56,"easy to integrate with AR/VR SDKs + good tutorials + active online forum to answer develope
## "20",60,"Maximum out-of-the-box usability or support system. Access to source for own developments"
## "21",65,"Making the software open source."
## "22",69,"Tutorials and easy explanation of processes.
## Preferably in Python"
## "23",70,"Flexibility/customization/extensibility options for the developers since many different dev
## "24",71,"Extensibility of plug-in and interoperability with various various psychophysiological sens
## "25",72,"Ability for developer to modify interaction"
## "26",73,"Robustness of Use. The Biometrics are generally quite finicky, more so when integrated in r
## "27",75,"A platform where I create an amazing one-of-a-kind VR immersive experience"
## "28",76,"how to design an amazing killer immersive experience for my users"
## "29",77,"cross-platform compatibility"
## "30",78,"???"
## "31",79,"I would have to be able to use LSL and select specific channels of a data stream as ECG cha
## "32",81,"Easiness of use"
```