

## ✓ Congratulations! You passed!

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1. What advantage does Federated Learning give you?

1 / 1 point

- ☐ User data can remain private on their device but still be used to train models
- ☐ Users can have models trained on everybody's data
- ☐ Models can be frequently updated
- ☒ All of the above

✓ Correct

2. What is the privacy principle of focused collection?

1 / 1 point

- ☒ Devices report only the data needed for a specific computation
- ☐ Engineer filters all the data to get only what she needs for a calculation
- ☐ Devices filter all the data from the server to only use updates
- ☐ Data is filtered by the network to remove all irrelevant data

✓ Correct

3. What is secure aggregation?

0 / 1 point

- ☐ Data is aggregated before being sent to the server, and only sent on encrypted channels
- ☒ Data is aggregated on the device before sending to the server, and sent on an encrypted channel
- ☐ Devices in a network pair up, and aggregate mutual data before sending to the server
- ☐ Devices in a network pair up, and create obfuscation keys that get cancelled out when aggregated on the server

✗ Incorrect

4. TensorFlow Federated includes a Federated Learning API, a Federated Core API and a runtime for simulations. What's the role of the Federated Learning API?

1 / 1 point

- ☐ It is the API for everything Federated Learning
- ☒ It contains implementations of federated training that can be applied to existing tensorflow models and data
- ☐ It's designed to allow the expression of new Federated algorithms
- ☐ It is a mobile runtime for Federated Learning

✓ Correct

5. If you want to declare a federated type, where a numeric item of data is available across all your devices, how do you do it?

1 / 1 point

- ☒ You declare the type as `{float32}@clients`
- ☐ Each device needs the same variable name and type
- ☐ You declare the type as `{float32}@server`
- ☐ You can't do this for privacy reasons, you have to declare it when submitting to the server

✓ Correct

6. If you want to do a federated computation on the server, what do you need to do to your computation function?

1 / 1 point

- ☐ Make sure it returns its value to `@Clients`
- ☐ Attribute the function with `@federated`

- ☐ Nothing, it will just work automatically
- ☒ Attribute the function with `@tff.federated_computation`

✓ Correct

7. You want to return a mean value of client values, calculated on the server, back to the clients. How do you do this?

1 / 1 point

- ☒ You have to use a `tff.federated_mean` to calculate the value and return its results
- ☐ The return value from your function is automatically mapped to the clients
- ☐ You have to explicitly open a network pipe and send the value to all of the clients using it
- ☐ You can't do this for privacy reasons

✓ Correct

8. If you want to try the tensorflow federated APIs, how do you install them for Python?

1 / 1 point

- ☐ Do nothing, they're included in TensorFlow
- ☒ Pip install `tensorflow-federated`
- ☐ Pip install `tensorflow_federated`
- ☐ Pip install `tf-federated`

✓ Correct