AOBD Lab 3

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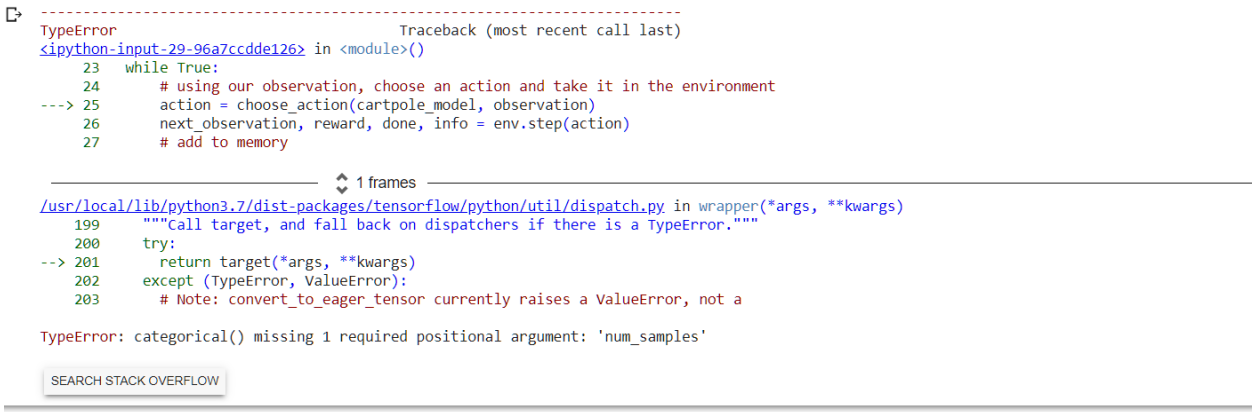
Errors faced and obtained solution (if found)

Problem: 1

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
<ipython-input-25-96a7ccdde126> in <module>()
     23   while True:
     24       # using our observation, choose an action and take it in the environment
---> 25       action = choose_action(cartpole_model, observation)
     26       next_observation, reward, done, info = env.step(action)
     27       # add to memory

<ipython-input-17-415cd1868510> in choose_action(model, observation, single)
     16   '''TODO: feed the observations through the model to predict the log
     17   probabilities of each possible action.'''
---> 18   logits = model.predict(obervation)
     19
     20   '''TODO: Choose an action from the categorical distribution defined by the log

NameError: name 'obervation' is not defined
```

Solution: Error was in using the variable it was fixed after proper usage

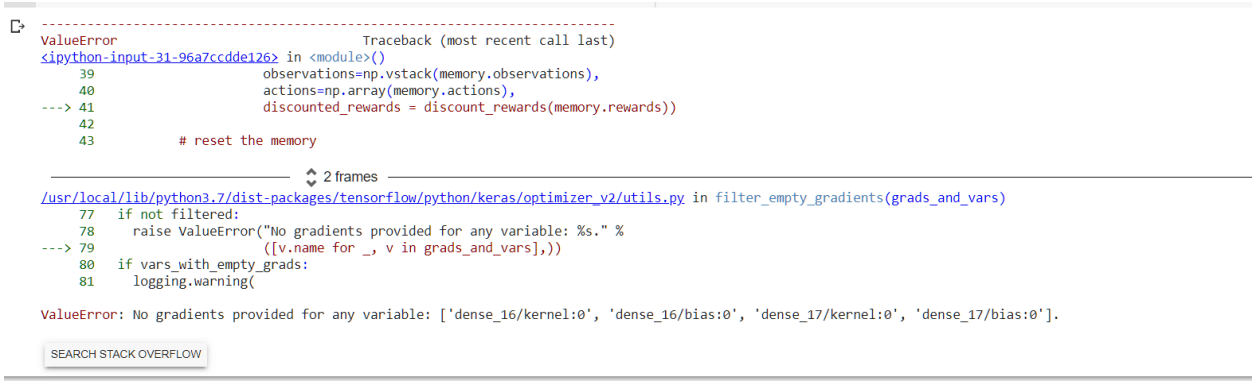
Problem: 2



```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
<ipython-input-29-96a7ccdde126> in <module>()
     23   while True:
     24       # using our observation, choose an action and take it in the environment
---> 25       action = choose_action(cartpole_model, observation)
     26       next_observation, reward, done, info = env.step(action)
     27       # add to memory

                                  1 frames
/usr/local/lib/python3.7/dist-packages/tensorflow/python/util/dispatch.py in wrapper(*args, **kwargs)
    199     """Call target, and fall back on dispatchers if there is a TypeError."""
    200     try:
--> 201       return target(*args, **kwargs)
    202     except (TypeError, ValueError):
    203       # Note: convert_to_eager_tensor currently raises a ValueError, not a

TypeError: categorical() missing 1 required positional argument: 'num_samples'

SEARCH STACK OVERFLOW
```

Solution: error says that one more argument is required in categorical function named “num_samples”

Problem: 3



```
---------------------------------------------------------------------------
ValueError                                Traceback (most recent call last)
<ipython-input-31-96a7ccdde126> in <module>()
     39                     observations=np.vstack(memory.observations),
     40                     actions=np.array(memory.actions),
---> 41                     discounted_rewards = discount_rewards(memory.rewards))
     42
     43         # reset the memory

                                  2 frames
/usr/local/lib/python3.7/dist-packages/tensorflow/python/keras/optimizer_v2/utils.py in filter_empty_gradients(grads_and_vars)
     77   if not filtered:
     78     raise ValueError("No gradients provided for any variable: %s." %
---> 79                      ([v.name for _, v in grads_and_vars],))
     80   if vars_with_empty_grads:
     81     logging.warning(

ValueError: No gradients provided for any variable: ['dense_16/kernel:0', 'dense_16/bias:0', 'dense_17/kernel:0', 'dense_17/bias:0'].

SEARCH STACK OVERFLOW
```

Solution: forget to multiply negative probability to the rewards in loss function so basically loss was incorrectly calculated.

Problem: 4

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
<ipython-input-13-5ad85e95b0d6> in <module>()
      6 # Rollout with single batch
      7 single_batch_size = 1
----> 8 memories = collect_rollout(single_batch_size, env, test_model, choose_action)
      9 rollout_video = mdl.lab3.save_video_of_memory(memories[0], "Pong-Random-Agent.mp4")
     10

NameError: name 'choose_action' is not defined

SEARCH STACK OVERFLOW
```

Solution: re run the choose_action part, it became undefined because of session timeout in google chrome.

Problem 5:

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
<ipython-input-30-5ad85e95b0d6> in <module>()
      6 # Rollout with single batch
      7 single_batch_size = 1
----> 8 memories = collect_rollout(single_batch_size, env, test_model, choose_action)
      9 rollout_video = mdl.lab3.save_video_of_memory(memories[0], "Pong-Random-Agent.mp4")
     10

<ipython-input-29-f47d7f2e36f5> in collect_rollout(batch_size, env, model, choose_action)
     25
     26     # Instantiate Memory buffer, restart the environment
---> 27     memory = Memory()
     28     next_observation = env.reset()
     29     previous_frame = next_observation

NameError: name 'Memory' is not defined

SEARCH STACK OVERFLOW
```

Solution: Unsolved error