Problem 3.

c) Download the pre-trained Inception-v3 model and run it on some images of your own choice. https://www.tensorflow.org/tutorials/images/image_recognition (https://www.tensorflow.org/tutorials/images/image_recognition) ¶

```
In [3]: !cd /Users/aparnaaidith/Desktop/Business_DataScience_HW5/models-master/tuto
```

With an image of a flower

```
In [4]: lon /Users/aparnaaidith/Desktop/Business_DataScience_HW5/models-master/tutor
```

```
WARNING:tensorflow:From /Users/aparnaaidith/Desktop/Business_DataScience_
HW5/models-master/tutorials/image/imagenet/classify_image.py:141: FastGFi
le.__init__ (from tensorflow.python.platform.gfile) is deprecated and wil
l be removed in a future version.
Instructions for updating:
Use tf.gfile.GFile.
2018-11-29 19:15:18.681387: W tensorflow/core/framework/op_def_util.cc:35
5] Op BatchNormWithGlobalNormalization is deprecated. It will cease to wo
rk in GraphDef version 9. Use tf.nn.batch_normalization().
2018-11-29 19:15:19.084735: I tensorflow/core/platform/cpu_feature_guard.
cc:141] Your CPU supports instructions that this TensorFlow binary was no
t compiled to use: SSE4.1 SSE4.2 AVX AVX2 FMA
2018-11-29 19:15:19.086778: I tensorflow/core/common_runtime/process_uti
l.cc:69] Creating new thread pool with default inter op setting: 4. Tune
using inter_op_parallelism_threads for best performance.
daisy (score = 0.97947)
bee (score = 0.00099)
speedboat (score = 0.00067)
fly (score = 0.00027)
mitten (score = 0.00023)
```

With an image of a girl

```
In [5]: !python /Users/aparnaaidith/Desktop/Business_DataScience_HW5/models-master/
```

```
WARNING:tensorflow:From /Users/aparnaaidith/Desktop/Business_DataScience_
HW5/models-master/tutorials/image/imagenet/classify_image.py:141: FastGFi
le.__init__ (from tensorflow.python.platform.gfile) is deprecated and wil
l be removed in a future version.
Instructions for updating:
Use tf.gfile.GFile.
2018-11-29 19:26:28.871753: W tensorflow/core/framework/op_def_util.cc:35
5] Op BatchNormWithGlobalNormalization is deprecated. It will cease to wo
rk in GraphDef version 9. Use tf.nn.batch_normalization().
2018-11-29 19:26:29.432980: I tensorflow/core/platform/cpu_feature_guard.
cc:141] Your CPU supports instructions that this TensorFlow binary was no
t compiled to use: SSE4.1 SSE4.2 AVX AVX2 FMA
2018-11-29 19:26:29.434691: I tensorflow/core/common_runtime/process_uti
l.cc:69] Creating new thread pool with default inter op setting: 4. Tune
using inter_op_parallelism_threads for best performance.
cloak (score = 0.14803)
trench coat (score = 0.14018)
suit, suit of clothes (score = 0.08267)
stole (score = 0.08201)
wool, woolen, woollen (score = 0.06680)
```

d) (Optional) Complete this tutorial for CIFAR-10. https://www.tensorflow.org/tutorials/images/deep_cnn (https://www.tensorflow.org/tutorials/images/deep_cnn)

It was taking more than 2 hours to run.Therefore stopped the execution*

In [6]:
```
!pip install tensorflow-datasets
```

```
Collecting tensorflow-datasets
  Downloading https://files.pythonhosted.org/packages/a4/02/6717354e5f6ee
ec5face466cc5a2b94f745716bea270c39301d44134abc7/tensorflow_datasets-0.0.1
-py2.py3-none-any.whl (https://files.pythonhosted.org/packages/a4/02/6717
354e5f6eeec5face466cc5a2b94f745716bea270c39301d44134abc7/tensorflow_datas
ets-0.0.1-py2.py3-none-any.whl) (44kB)
    100% |████████████████████████████████| 51kB 2.3MB/s ta 0:00:011
Requirement already satisfied: requests in /Users/aparnaaidith/anaconda3/
lib/python3.6/site-packages (from tensorflow-datasets) (2.20.1)
Requirement already satisfied: six in /Users/aparnaaidith/anaconda3/lib/p
ython3.6/site-packages (from tensorflow-datasets) (1.11.0)
Collecting enum34 (from tensorflow-datasets)
  Downloading https://files.pythonhosted.org/packages/af/42/cb9355df32c69
b553e72a2e28daee25d1611d2c0d9c272aa1d34204205b2/enum34-1.1.6-py3-none-an
y.whl (https://files.pythonhosted.org/packages/af/42/cb9355df32c69b553e72
a2e28daee25d1611d2c0d9c272aa1d34204205b2/enum34-1.1.6-py3-none-any.whl)
Requirement already satisfied: tqdm in /Users/aparnaaidith/anaconda3/lib/
python3.6/site-packages (from tensorflow-datasets) (4.28.1)
Requirement already satisfied: future in /Users/aparnaaidith/anaconda3/li
b/python3.6/site-packages (from tensorflow-datasets) (0.17.1)
Requirement already satisfied: certifi>=2017.4.17 in /Users/aparnaaidith/
anaconda3/lib/python3.6/site-packages (from requests->tensorflow-dataset
s) (2018.10.15)
Requirement already satisfied: idna<2.8,>=2.5 in /Users/aparnaaidith/anac
onda3/lib/python3.6/site-packages (from requests->tensorflow-datasets)
 (2.7)
Requirement already satisfied: chardet<3.1.0,>=3.0.2 in /Users/aparnaaidi
th/anaconda3/lib/python3.6/site-packages (from requests->tensorflow-datas
ets) (3.0.4)
Requirement already satisfied: urllib3<1.25,>=1.21.1 in /Users/aparnaaidi
th/anaconda3/lib/python3.6/site-packages (from requests->tensorflow-datas
ets) (1.23)
Installing collected packages: enum34, tensorflow-datasets
Successfully installed enum34-1.1.6 tensorflow-datasets-0.0.1
```

In [9]:
```
!python /Users/aparnaaidith/Desktop/Business_DataScience_HW5/models-master/
```

```
>> Downloading cifar-10-binary.tar.gz 100.0%
Successfully downloaded cifar-10-binary.tar.gz 170052171 bytes.
WARNING:tensorflow:From /Users/aparnaaidith/Desktop/Business_DataScience_
HW5/models-master/tutorials/image/cifar10/cifar10_input.py:158: string_in
put_producer (from tensorflow.python.training.input) is deprecated and wi
ll be removed in a future version.
Instructions for updating:
Queue-based input pipelines have been replaced by `tf.data`. Use `tf.dat
a.Dataset.from_tensor_slices(string_tensor).shuffle(tf.shape(input_tenso
r, out_type=tf.int64)[0]).repeat(num_epochs)`. If `shuffle=False`, omit t
he `.shuffle(...)`.
WARNING:tensorflow:From /Users/aparnaaidith/anaconda3/lib/python3.6/site-
packages/tensorflow/python/training/input.py:276: input_producer (from te
nsorflow.python.training.input) is deprecated and will be removed in a fu
ture version.
Instructions for updating:
Queue-based input pipelines have been replaced by `tf.data`. Use `tf.dat
a.Dataset.from_tensor_slices(input_tensor).shuffle(tf.shape(input_tensor,
out_type=tf.int64)[0]).repeat(num_epochs)`. If `shuffle=False`, omit the
```

In [ ]:
```
tensorboard --logdir /tmp/cifar10_eval
```

In [ ]:
```
python cifar10_multi_gpu_train.py --num_gpus=2
```