✔ **Congratulations! You passed!**

Grade	Latest Submission	To pass 80% or	
received 100%	Grade 100%	higher	**Go to next item**

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1. Vector x_u and vector x_m must be of the same dimension, where x_u is the input features vector for a user (age, gender, etc.) x_m is the input features vector for a movie (year, genre, etc.) True or false?

    1 / 1 point

○ True

◉ False

   ✓ **Correct**
     These vectors can be different dimensions.

2. If we find that two movies, i and k, have vectors $v_m^{(i)}$ and $v_m^{(k)}$ that are similar to each other (i.e., $||v_m^{(i)} - v_m^{(k)}||$ is small), then which of the following is likely to be true? Pick the best answer.
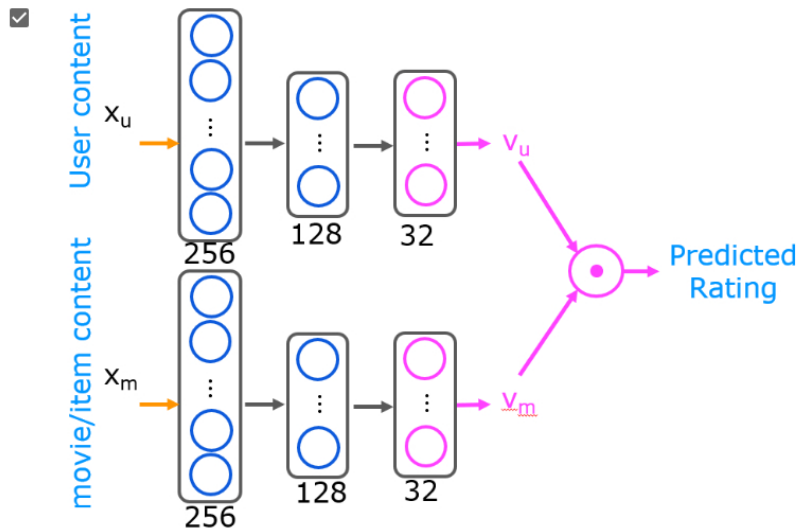
    1 / 1 point

○ A user that has watched one of these two movies has probably watched the other as well.

◉ The two movies are similar to each other and will be liked by similar users.

○ The two movies are very dissimilar.

○ We should recommend to users one of these two movies, but not both.

   ✓ **Correct**
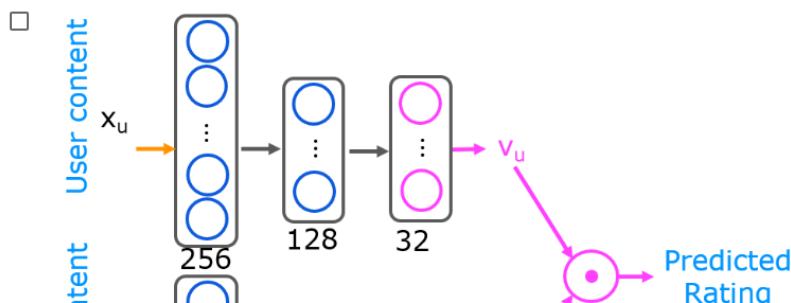   Similar movies generate similar v_m's.

3. Which of the following neural network configurations are valid for a content based filtering application? Please note carefully the dimensions of the neural network indicated in the diagram. Check all the options that apply:
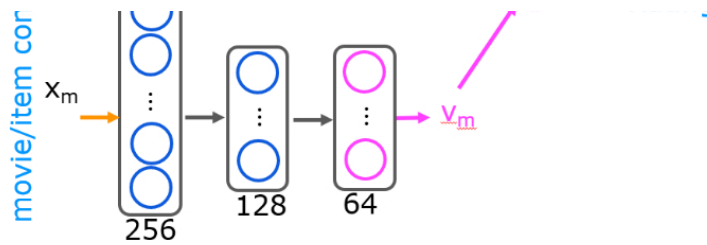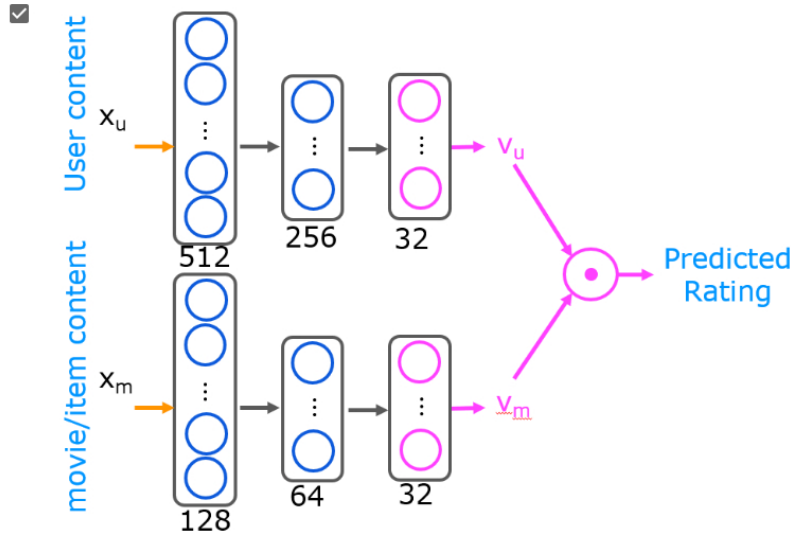
    1 / 1 point

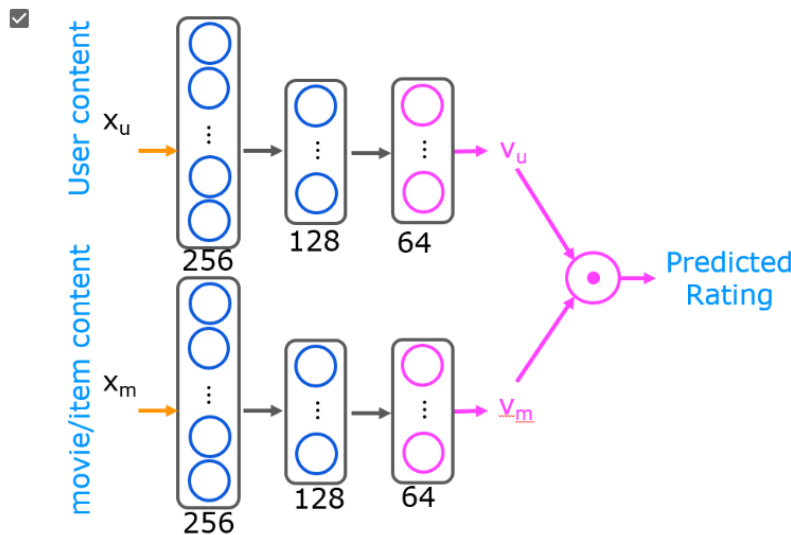

Both the user and the item networks have the same architecture

   ✓ **Correct**
     User and item networks can be the same or different sizes.

movie/item cor

x_m

128 64

256

The user vector v_u is 32 dimensional, and the item vector v_m is 64 dimensional

☑ User content

movie/item content

x_u

v_u

512 256 32

x_m

v_m

128 64 32

Predicted Rating

The user and the item networks have different architectures

✓ **Correct**

User and item networks can be the same or different sizes.

☑ User content

movie/item content

x_u

v_u

256 128 64

x_m

v_m

256 128 64

Predicted Rating

The user and item networks have 64 dimensional v_u and v_m vector respectively

✓ **Correct**

Feature vectors can be any size so long as v_u and v_m are the same size.

4. You have built a recommendation system to retrieve musical pieces from a large database of music, and have an algorithm that uses separate retrieval and ranking steps. If you modify the algorithm to add more musical pieces to the retrieved list (i.e., the retrieval step returns more items), which of these are likely to happen? Check all that apply.

1 / 1 point

☐ The system's response time might decrease (i.e., users get recommendations more quickly)

☑ The system's response time might increase (i.e., users have to wait longer to get recommendations)

✓ **Correct**

A larger retrieval list may take longer to process which may *increase* response time.

☐ The quality of recommendations made to users should stay the same or worsen.

☑ The quality of recommendations made to users should stay the same or improve.

5.   1 / 1 point

To speed up the response time of your recommendation system, you can pre-compute the vectors v_m for all the items you might recommend. This can be done even before a user logs in to your website and even before you know the x_u or v_u vector. True/False?

◉ True

◯ False