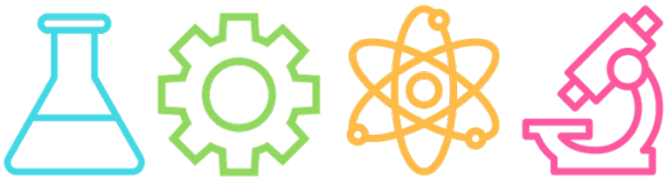


# BIOMEDICAL ENGINEERING – AN ART OR A SCIENCE?



SOWMYA ANJUR, Ph.D.

ILLINOIS MATHEMATICS AND SCIENCE ACADEMY



# ENGINEERING OR BIOLOGY?



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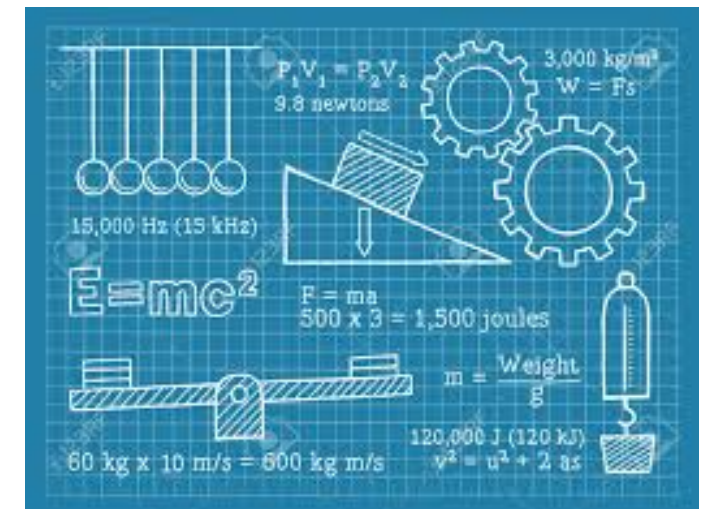
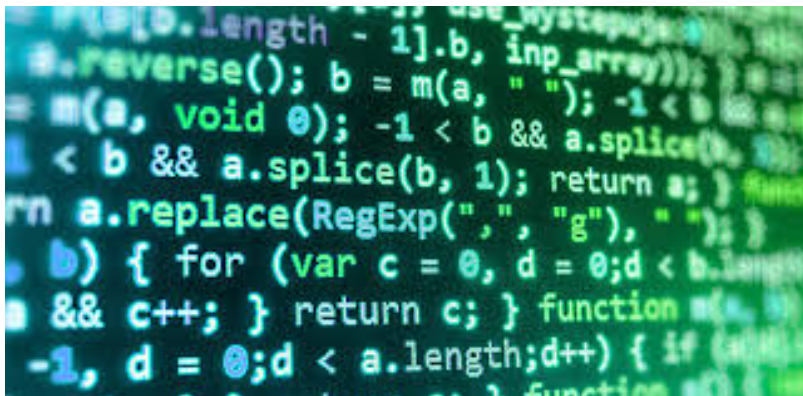


# ENGINEERING OR BIOLOGY?

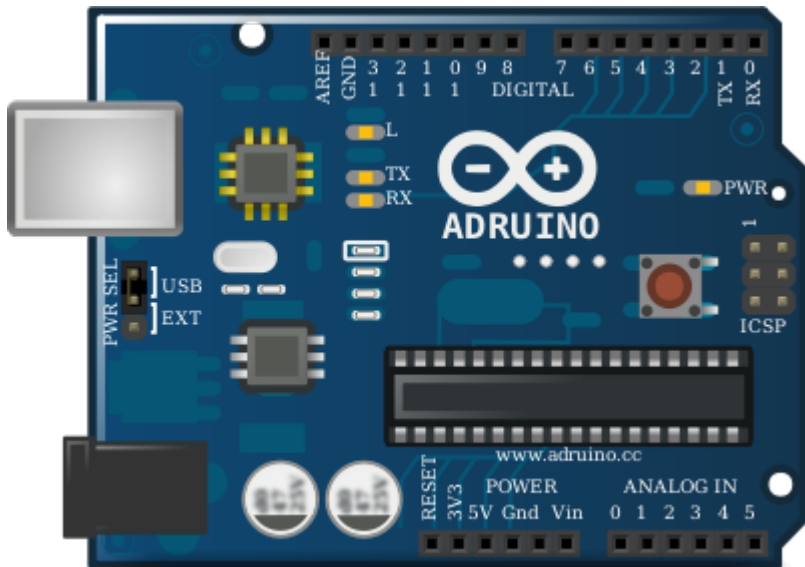


# INTEGRATING ENGINEERING WITH BIOLOGY

- ARTIFICIAL INTELLIGENCE
- COMPUTER SCIENCE AND BIOLOGY
- PHYSICS AND BIOLOGY

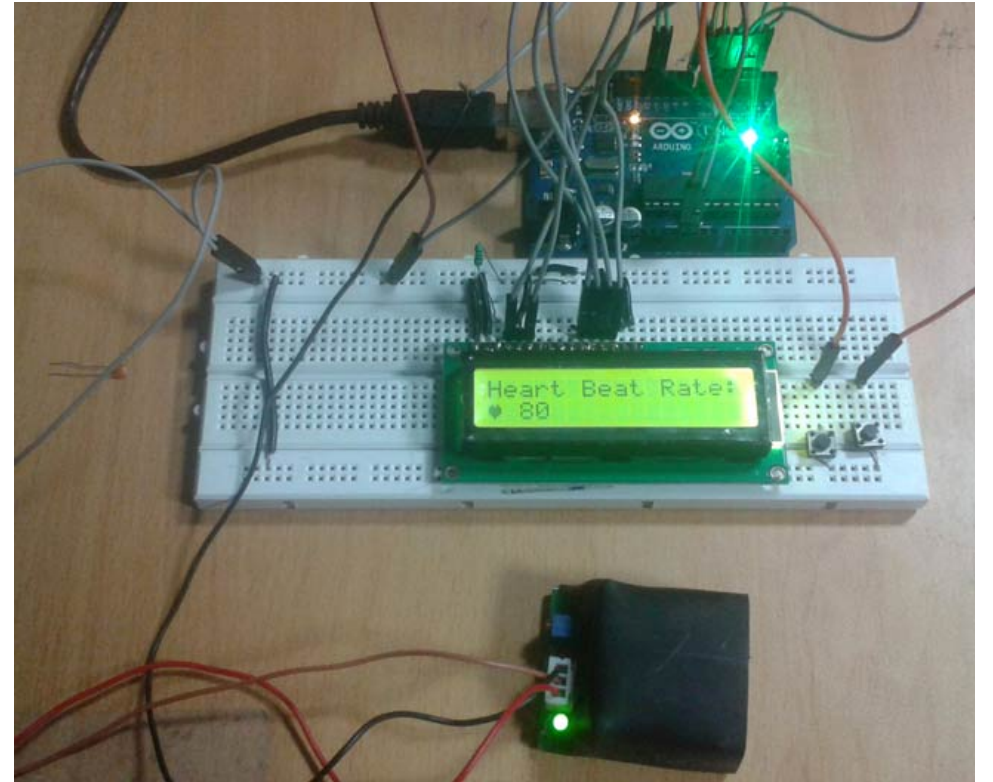


# ARDUINO HEART RATE LED MONITORS IN THE PHYSIOLOGY CLASSROOM



# GOAL OF THE PROJECT

Students will use arduinos to make a heart rate monitor in which LED lights are incorporated to flash when measurements of heart rate are made



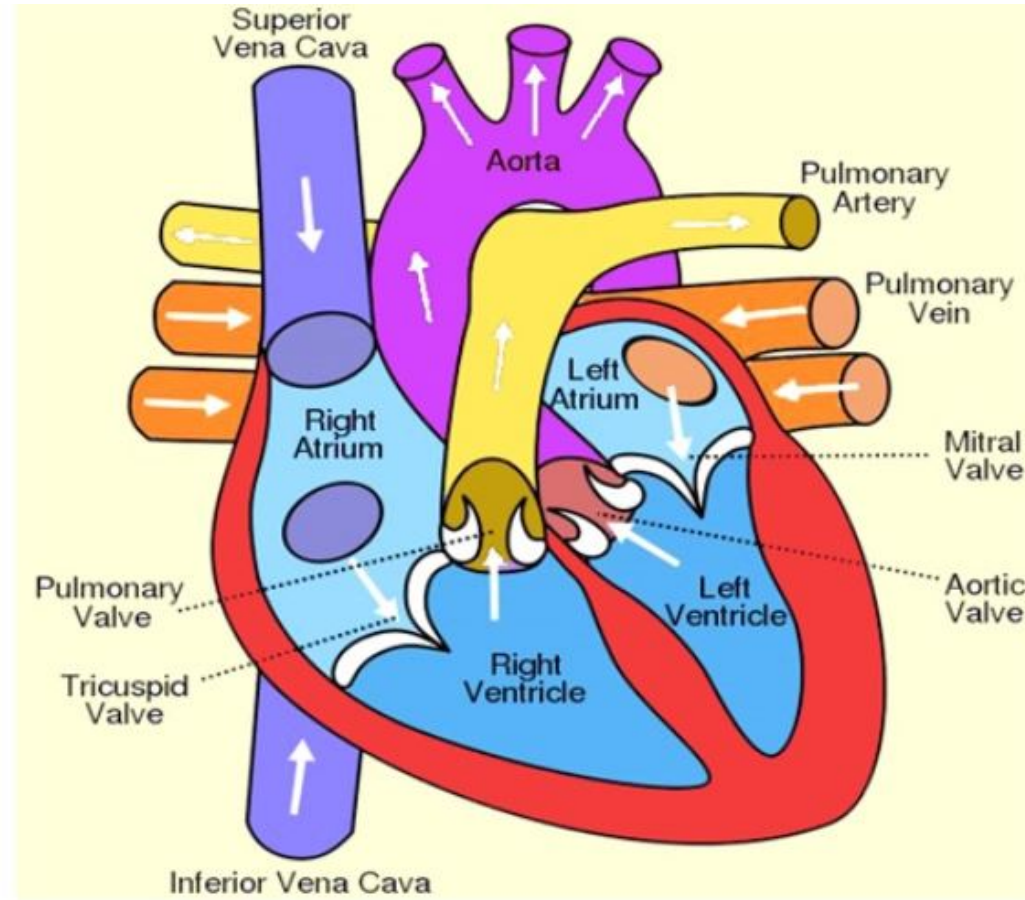
# THOUGHT FOR THE DAY

What do you think  
is the best feat of engineering  
known to man?





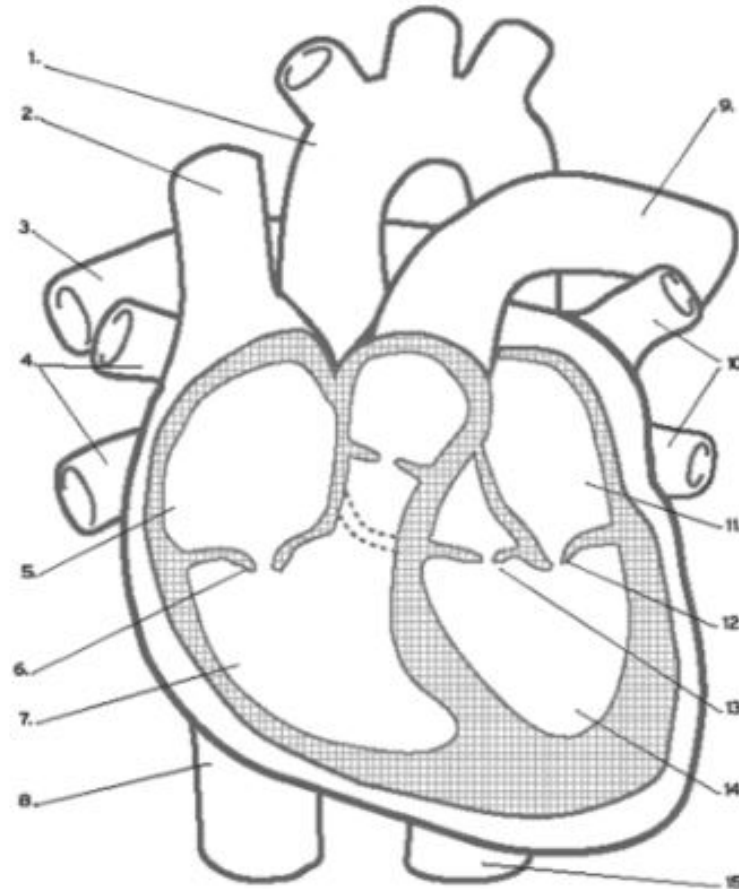
# THE HUMAN HEART



# GROUP QUIZ

## Heart diagram

Name as many parts of the heart as you can



# EXAMPLE OF ENGINEERING SCHEMATIC

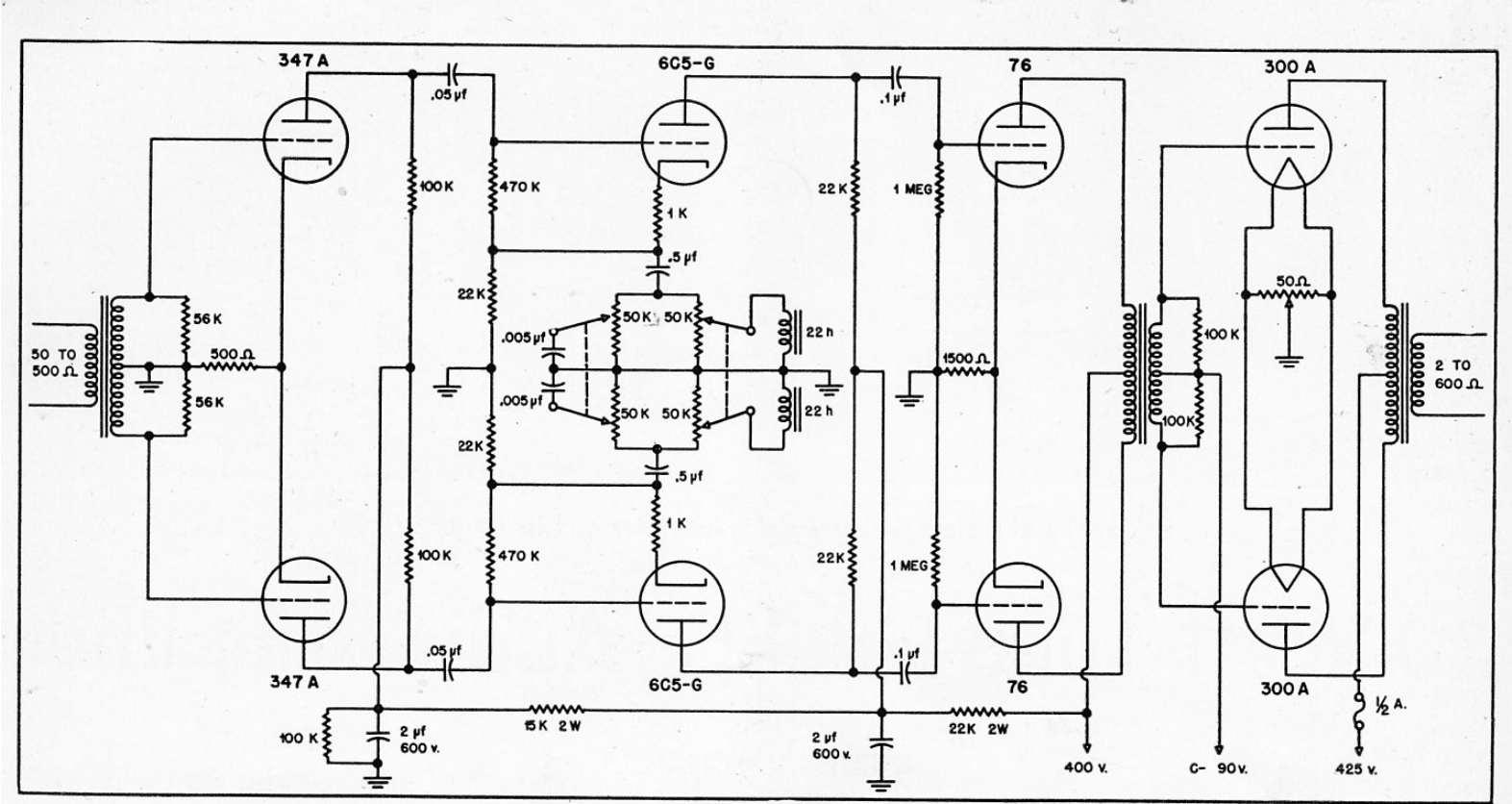
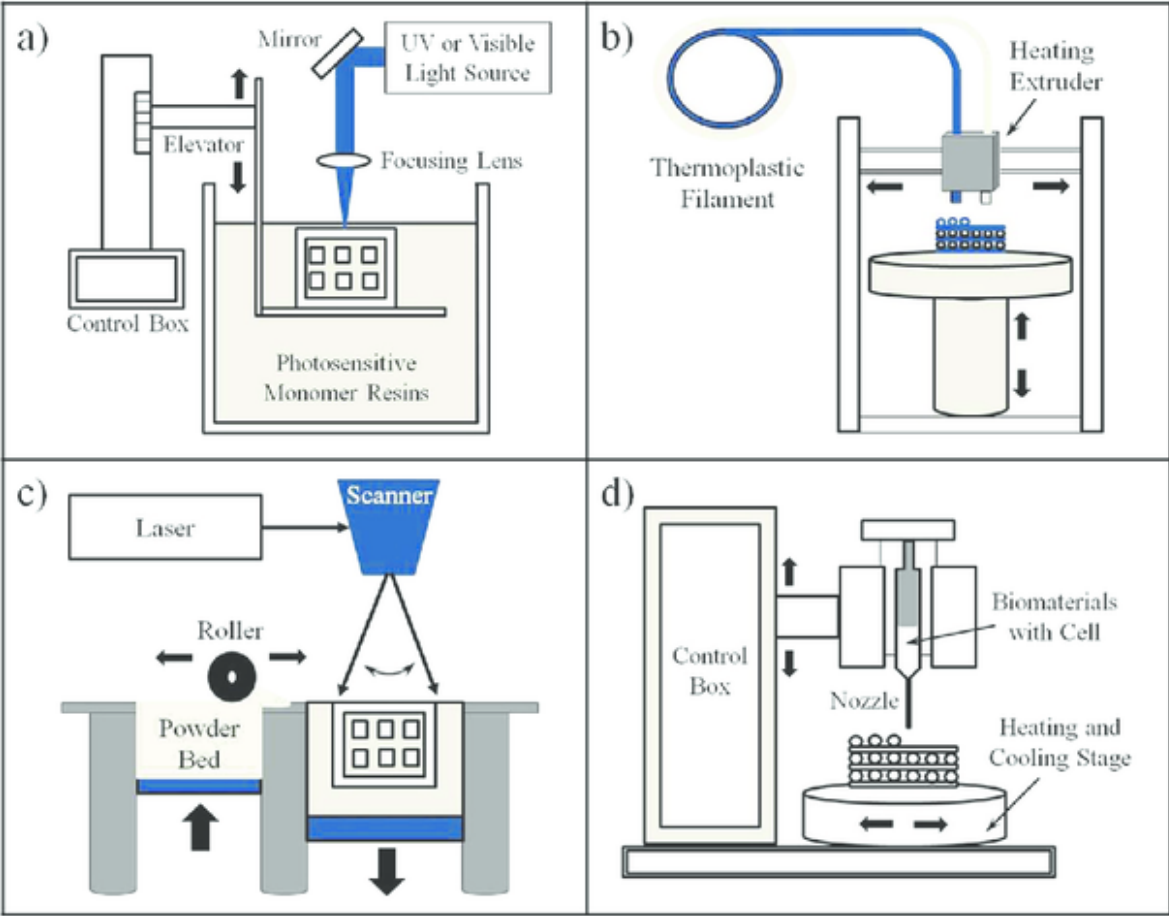


Fig. 2. Complete schematic of the 30-watt high-fidelity audio amplifier.

# EXAMPLE OF ENGINEERING SCHEMATIC



# ENGINEERING HEART MODELS

- Brainstorm and come up with a schematic for your heart model
- Show the schematic to me for approval
- Use the given materials to build your heart model
- HINT: The model should be the size of your fist (life-sized)
- Try to represent as many parts as you can, using your creativity and engineering skills
- HAVE FUN!!!!!!



# DEMONSTRATE YOUR CREATIVITY

- Come up with novel ideas to integrate biology with engineering or computer science with engineering and lead your class in a creative project, time permitting, before the end of summer!
- Good luck!



