MODULE 7: DEVELOPING AN MVP FOR YOUR ORGANIZATION

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Topics

- Future of Autonomous Robots and Vehicles in Industry Transformation

- Design Considerations

- Development Process for Autonomous Robots and Vehicles

Introduction

- This module is to train and teach participants to design and implement a futuristic autonomous robot MVP for real world applications

- Robotic professionals need to identify proper pain points and design considerations to tackle to ensure success

Future of Autonomous Robots and Vehicles in Industry Transformation

Expansion of AV's capabilities:

1. Emergency Response and Disaster Relief (AV + Autonomous Robots)

2. Mobile offices and living spaces

3. Goods delivery and logistics (AV + Autonomous Robots)

4. Mobility for the Elderly and Disabled (AV + Autonomous Robots)

5. Agricultural Farming and Industrial Inspection/ Maintenance (AV + Autonomous Robots)

How to ensure a fleet of AVs and Autonomous Robots communicate with one another and operate smoothly together?

Future of Autonomous Robots and Vehicles in Industry Transformation

Musk says Tesla to use humanoid robots next year

24 July 2024

Share

João da Silva & Natalie Sherman
Business reporters, BBC News

Elon Musk hopes humanoid robots will be performing tasks at Tesla's factories by next year
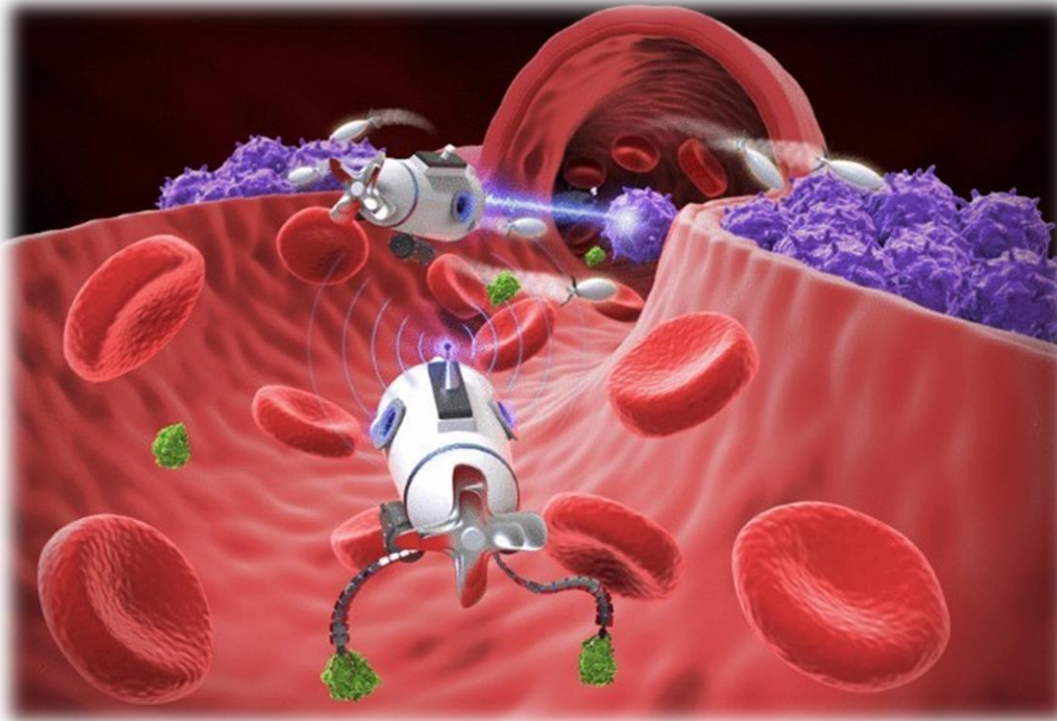
Tesla boss Elon Musk says the electric car maker will start producing and using humanoid robots from next year.

Humanoid robotics

- Homes
- Factories
- Healthcare
- Customer service

Future of Autonomous Robots and Vehicles in Industry Transformation

Nanorobots

- Made of advanced materials, e.g. carbon nanotubes, nanowires, DNA

- **Applications:** Targeted drug delivery, cellular level surgeries, diagnose diseases, precise manufacturing processes, cleaning up pollutants, detecting/neutralizing hazardous substances

# Development Process for Autonomous Robots and Vehicles

Look for:

- Daily pain issues (no pain, no interest)
- Revenue generating or manpower/cost saving opportunities

After identifying, ask yourself these questions:

- Can the problem be solved with other **cheaper alternatives than using robots**?
- Will robotics result in **cost or manpower savings in the long run?**
- Will it **infringe any company IT policy or ethical policies?**
- Will it **cause inconvenience in any way?**
- Is it **cheap and worth the time to try out?**

Autonomous System Flow Process Example (RECAP)
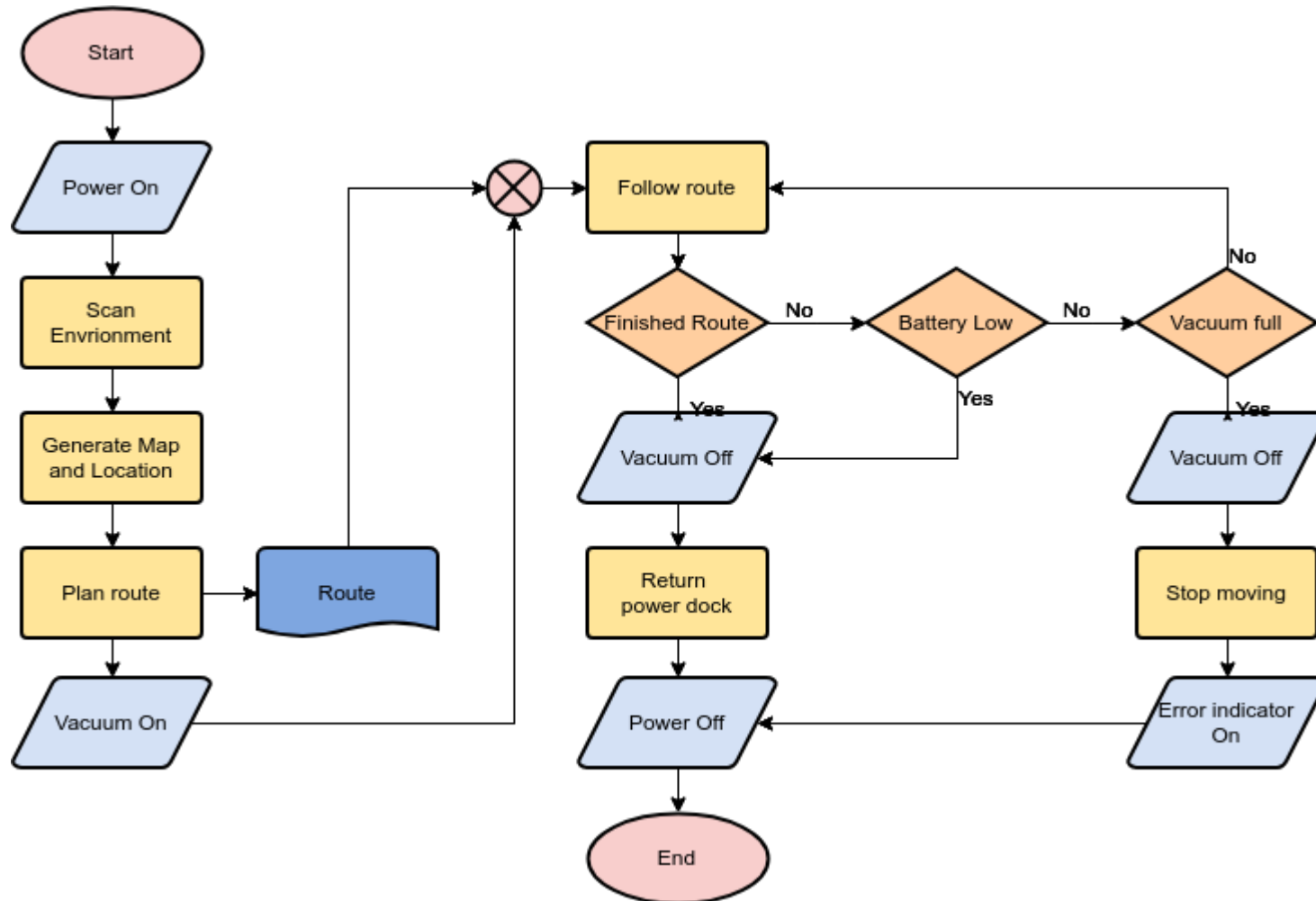
Homework

- **Prepare a real autonomous robotics implementation plan** specific to your work place or identified use-case

- Include all the points discussed in the previous few slides [e.g. **system architecture** (covered in M2), **system flow process** (see previous slide)]

- **To be presented and submitted on the 5th day**

- **10 minutes presentation** (around 10 slides) and 5 minutes Q&A per person

- Have more graphics/charts/figures than words

- PowerPoint-based
  - Use template provided

Proposal Structure Example

- **Introduction & Business Case; e.g.**
  - ➢ What pain point(s) do you want to address?
  - ➢ Aim to generate revenue generate or manpower/cost saving or both?

- **Implementation Plan; e.g.**
  - ➢ Required sub-systems,
  - ➢ Required hardware and software

- **Detailed Design:**
  - ➢ System architecture and/or
  - ➢ System flow process

- **Product Visual Illustration**
  - ➢ Rough sketch of product with the labelled components.
  - ➢ Pinpoint where the various hardware should be located within the prototype

Please upload all your works in CANVAS → Assignments → ARV Module 7 Presentation Submission

(Each representative per group to submit)

End of Module 7