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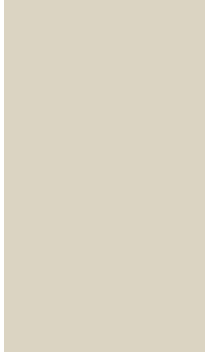


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THIS PROJECT REPRESENTS A COLLABORATIVE EFFORT BY A DIVERSE TEAM OF ASPIRING ENGINEERS DEDICATED TO DESIGNING AND BUILDING A CUTTING-EDGE ROBOT. OUR TEAM COMBINES A WIDE RANGE OF SKILLS. IN THIS EXPLORATION, WE WILL INVESTIGATE MULTIPLE RENEWABLE ENERGY SOURCES. THIS DOCUMENT CHRONICLES OUR PROJECT FROM ITS INITIAL IDEA TO THE FINISHED PRODUCT, HIGHLIGHTING THE OBSTACLES WE FACED AND THE MILESTONES WE ACHIEVED ALONG THE WAY. JOIN US AS WE EMBARK ON THIS THRILLING JOURNEY IN ENGINEERING AND SUSTAINABILITY!



THE TEAM CONSISTS OF A HIGHLY SKILLED PROGRAMMER, A SEASONED ENGINEER, AND A KNOWLEDGEABLE PROJECT MANAGER. TOGETHER, THEY BRING A WEALTH OF EXPERIENCE IN SOFTWARE DEVELOPMENT, DESIGN, AND PROJECT EXECUTION. THEIR DIVERSE BACKGROUNDS ENABLE THEM TO TACKLE COMPLEX CHALLENGES CREATIVELY AND EFFICIENTLY, FOSTERING COLLABORATION AND INNOVATION AT EVERY STAGE OF THE PROJECT. THIS SYNERGY NOT ONLY ENHANCES THE QUALITY OF THE FINAL PRODUCT BUT ALSO ENSURES A ROBUST DEVELOPMENT PROCESS GROUNDED IN BEST PRACTICES AND CUTTING-EDGE TECHNOLOGIES.

HASAN ABO FARES

BRINGS EXPERTISE IN COUCH CONSTRUCTION AND TEAM BUILDING SKILLS.

JANA

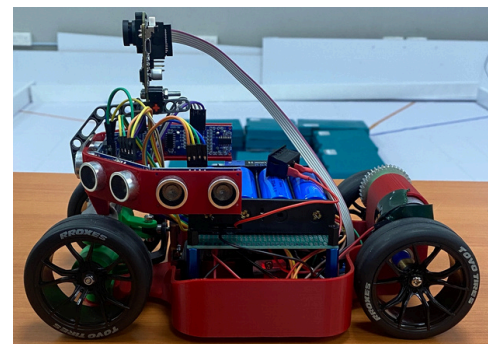
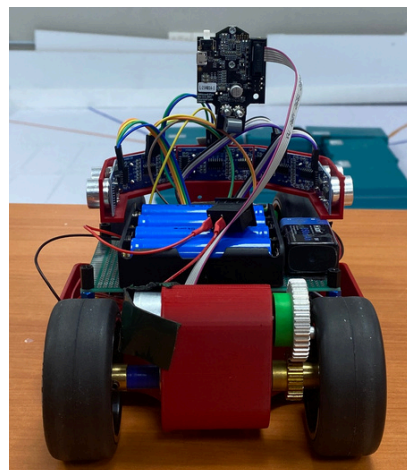
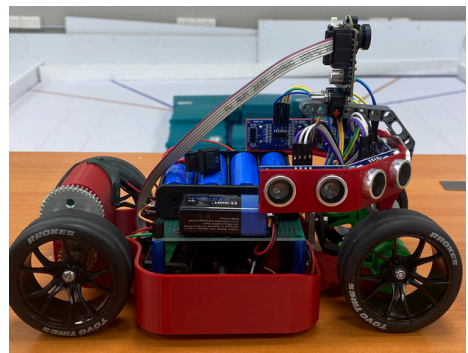
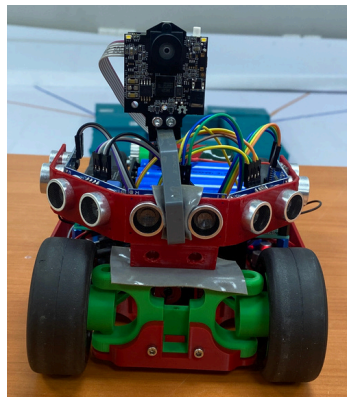
EXCELS IN PROGRAMMING THE ROBOT'S FUNCTIONALITIES AND HAS SOLDERED MANY ELECTRICAL COMPONENTS. SHE'S ALSO A MECHANICAL ENGINEER

BANAH

DESIGNED THE ROBOT AND SHE IS A MECHANICAL ENGINEER.

ROBOT & DESIGN

OUR ROBOT IS ENTIRELY 3D PRINTED, SETTING IT APART FROM THE COMPETITION. THE 3D MODELING PROCESS ENABLED US TO CREATE A FULLY CUSTOMIZED ROBOT TAILORED FOR SPECIFIC TASKS, ENHANCING ITS FUNCTIONALITY AND VERSATILITY



3 D M O D E L I N G



SOFTWARE USING FUSION 360 TO DESIGN OUR ROBOT WAS AN AMAZING EXPERIENCE THAT BLENDED CREATIVITY, ENGINEERING, AND EXTENSIVE EXPERIMENTATION. THIS POWERFUL SOFTWARE ENABLED US TO DEVELOP INTRICATE 3D MODELS, SIMULATE MOVEMENTS, AND VISUALIZE OUR CONCEPTS PRIOR TO ANY PHYSICAL CONSTRUCTION. FUSION 360 WAS CRUCIAL FOR PROTOTYPING AND HONING OUR IDEAS, ALLOWING US TO REFINE OUR DESIGNS EFFECTIVELY.



TECHNICAL :

TO REALIZE OUR ROBOT DESIGN, WE UTILIZED CUTTING-EDGE 3D PRINTING TECHNOLOGY AND TOP-TIER PRINTERS. THE INTRICATE NATURE OF OUR DESIGN DEMANDED A LEVEL OF PRECISION AND DURABILITY THAT CONVENTIONAL PRINTERS COULD NOT ACHIEVE. WE REQUIRED A PRINTER ADEPT AT WORKING WITH A RANGE OF MATERIALS, INCLUDING ROBUST PLASTICS AND FLEXIBLE COMPONENTS, TO FAITHFULLY REPRODUCE OUR FUSION 360 MODELS.

THIS STATE-OF-THE-ART 3D PRINTER EMPOWERED US TO PRODUCE COMPLEX SHAPES AND PRECISE TOLERANCES ESSENTIAL FOR THE OPTIMAL FUNCTIONING OF OUR ROBOT.

CAMERA:

LIGHT SENSITIVITY: CAMERAS EFFECTIVELY CAPTURE A BROAD RANGE OF LIGHT LEVELS, MAKING THEM VERSATILE FOR DIFFERENT LIGHTING CONDITIONS.

DYNAMIC RANGE: THEY CAN DETAIL BOTH HIGHLIGHTS AND SHADOWS, OFFERING A MORE COMPREHENSIVE VIEW OF A SCENE THAN THE HUMAN EYE.

COLOR ACCURACY: CAMERAS REPRODUCE A WIDE ARRAY OF COLORS, ENSURING THE SCENE'S RICHNESS AND VIBRANCY ARE WELL CAPTURED

ULTRASONIC SENSOR

SENSORIA USES FIVE ULTRASONIC SENSORS POSITIONED PRECISELY IN A DESIGNATED AREA TO DETECT OBJECTS IN ITS PATH.

C O D E

UTILIZING FUNCTIONS IN THE ARDUINO IDE GREATLY ENHANCES THE EFFICIENCY AND RELIABILITY OF YOUR CODE. BY ENCAPSULATING SPECIFIC TASKS WITHIN FUNCTIONS, YOU CREATE A MODULAR STRUCTURE THAT MINIMIZES REDUNDANCY AND SIMPLIFIES DEBUGGING. FUNCTIONS ENABLE YOU TO LOGICALLY ORGANIZE YOUR CODE INTO MANAGEABLE, REUSABLE SEGMENTS. THIS APPROACH NOT ONLY STREAMLINES THE CODE BUT ALSO FACILITATES MAINTENANCE AND SCALABILITY FOR MORE COMPLEX PROJECTS.