Date: 21st December-2024

DEVELOPMENT AND INSTALLATION OF AN AUTOMATIC TEMPERATURE CONTROL SYSTEM IN ROOMS.

Murodov Oybek Turakulovich
Assistant of the Department of General Technical Subjects of the Asian International University

Annotation: The article discusses automated temperature and humidity control systems in production rooms. First, general information about cooling systems, their types and properties is provided, and typical and various designs of temperature and humidity control systems for production rooms are analyzed, and then the implementation of these technologies in such systems is considered.
Keywords:temperature, humidity, production room, automatic control system.
Annotation: Maqolada ishlab chikarish honalari temperaturesi va namligini avtomatlashtirilgan boshkarish tizimiini ishlab chikish usullarini tashkil qilish kўrib chikilgan. Boshida avtomatlashtirilgan sovutish tizimining turlari va hossalari tugrisida umumiy malumot berylgan boulib, shuningdek ishlab chikarish honalarning temperaturesi va namligini odatiy hamda turli khil boshkarish tizimlarini qurish usullari tahlil qilingan, keyincha lik esa ushbu usullarni shu tisimlarda qўllanilishi kўrib chikilgan.
Kalit so‘zlar: harorat, namlik, ishlab chikarish khonasi, automatic boshkarish tizimi

INTRODUCTION

In the modern world, namely in the age of high technology, there remains a need for workers and employees to create comfortable working conditions. The main goals of the ventilation system are to provide the premises with a microclimate, as well as purify the air from harmful substances. By supplying a manufacturing plant with clean air at a comfortable temperature for the working personnel, work efficiency increases. As part of this trend, there is a need to automate the ventilation system. Current developments help provide better working conditions.

There are several types of ventilation systems, which are classified as follows:

- Method of air pressure and movement;
- Purpose – supply and exhaust;
- Service area – general and local;
- Design – channel and without channel.

Natural ventilation is the simplest type of ventilation, since ventilation occurs naturally and does not require special equipment.

There are situations when the power of natural ventilation is not enough and then it becomes necessary to install artificial ventilation. The peculiarity of its work is that, the useadditional equipment that facilitates the forced movement of used air, replacing it with clean air, as well as maintaining the specified air parameters. The distinctive quality of such systems is air treatment, namely air purification, heating, cooling and humidification.

The purpose of controlling the ventilation system is to ensure and maintain the required air quality standards in the working area of the room. Local automation is usually used to control the ventilation system. One and the most important disadvantage of such regulation is that it does not take into account the real air and heat balance of the building, as well as weather conditions. Thus, we can say that the ventilation system is not operating optimally.

By implementing optimal control of the ventilation system, you can not only increase operating efficiency, but also reduce the cost of energy resources. But for this it is necessary to use a complex of software and hardware.

Using a computer, you can find the optimal operating mode and determine the appropriate control action. As a result, the computer and the complex, consisting of software and hardware, form an automated ventilation control system. The role of a computer can be either a control panel for the supply ventilation system or a computer with a modeling program, which, based on the data obtained, establishes the optimal operating mode of the ventilation system.

Automatic control system – a set of devices designed to obtain a finished product from initial raw materials by automatically changing one or more parameters of the control object. In the case of a supply ventilation system, the finished product is air with specified parameters (temperature, humidity, etc.) in the production room.

When designing an automatic system, remote control is often provided; this is necessary to change the basic parameters of the system. This control is carried out using converters or sensors, the values of which can be displayed on the control panel or computer monitor.

One of the main functions that needs to be implemented is the “start sequence”. To ensure normal start-up of the supply ventilation system, it is necessary to take into account:

• Preheating of the heater. If you do not start warming up the air heater in advance, cold air can trigger the antifreeze protection. Thus, when starting the system, you should open the supply air dampers, open the water heater valve and warm up the heater. Typically, this function should be activated when the outside temperature is below 12 °C.

• Preliminary opening of air dampers. This is due to the fact that not all dampers, when closed, can withstand the pressure drop caused by the operation of the fan.

• Distribution of electric motor starting moments. This function is necessary in an automated ventilation system since asynchronous electric motors often have high starting currents. If you start the fans and air damper drives at the same time, then due to the heavy load on the electrical network, the voltage will drop significantly and the engines will not start

Many important functions that need to be provided for when designing an automatic control system for supply ventilation are the “stop sequence”. When shutting down the system, the following must be considered:

• Delay for stopping the supply air fan in systems with an electric heater. After removing the voltage from the heater, it should be cooled for some time using a supply air fan.

CONCLUSION

The presence of a ventilation system is necessary to ensure air exchange inside the building by removing excess moisture, heat, and harmful substances. Its presence is one of the main conditions for ensuring life. If there are no types of ventilation systems in the room, this is harmful to the human body, harmful substances are not removed, and leads to the formation of fungi, since condensation forms in the absence of air exchange.

BIBLIOGRAPHY:

1. To'raqulovich, M. O. (2024). OLIY TA'LIM MUASSASALARIDA AXBOROT KOMMUNIKASIYA TEXNOLOGIYALARI DARSLARINI TASHKIL ETISHDA ZAMONAVIY USULLARDAN FOYDALANISH. PEDAGOG, 7(6), 63-74.3
2. Muradov, O. (2024, January). IN TEACHING INFORMATICS AND INFORMATION TECHNOLOGIES REQUIREMENTS. In Международная конференция академических наук (Vol. 3, No. 1, pp. 97-102).
3. Murodov, O. T. R. (2023). INFORMATIKA DARSLARINI TASHKIL ETISHDA INNOVATSION USULLARDAN FOYDALANISH. GOLDEN BRAIN, 1(32), 194-201.
4. To'raqulovich, M. O. (2024). OLIY TA'LIM MUASSASALARIDA TA'LIMNING INNOVASION TEXNOLOGIYALARDAN FOYDALANISH. PEDAGOG, 7(5), 627-635.
5. To'raqulovich, M. O. (2024). IMPROVING THE TEACHING PROCESS OF IT AND INFORMATION TECHNOLOGIES BASED ON AN INNOVATIVE APPROACH. Multidisciplinary Journal of Science and Technology, 4(3), 851-859.
6. Murodov, O. (2024). DEVELOPMENT AND INSTALLATION OF AN AUTOMATIC TEMPERATURE CONTROL SYSTEM IN ROOMS. Solution of social problems in management and economy, 3(2), 91-94.
7. Murodov, O. (2024). DEVELOPMENT OF AN AUTOMATED SYSTEM FOR CONTROLLING TEMPERATURE AND HUMIDITY IN PRODUCTION ROOMS. Development and innovations in science, 3(1), 84-93.
8. Murodov, O. (2024). TA'LIM TEXNOLOGIYALARINING ILMIY-NAZARIY ASOSLARI. Science and innovation in the education system, 3(3), 155-160.
9. Murodov, O. (2023). INNOVATSION YONDASHUV ASOSIDA INFORMATIKA VA AXBOROT TEXNOLOGIYALARI FANINI O'QITISH JARAYONINI TAKOMILLASHTIRISH. Theoretical aspects in the formation of pedagogical sciences, 3(4), 77-81.
10. Muradov, O. (2024). APPLIED TO THE CURRENT TRAINING PROCESS REQUIREMENTS. Инновационные исследования в науке, 3(1), 54-63.
11. Murodov, O. (2024). DEVELOPMENT OF AN AUTOMATED PARAMETER CONTROL SYSTEM ROOMS AND WORKSHOPS BASED ON CLOUD TECHNOLOGIES. Академические исследования в современной науке, 3(2), 16-27.

12. Muradov, O. (2024, January). Application of basic principles and rules of innovative pedagogical technologies to educational processes. In Международная конференция академических наук (Vol. 3, No. 1, pp. 46-55).
13. Muradov, O. (2024). Basic principles and rules of innovative pedagogical technologies in the educational process. Models and methods in modern science, 3(1), 84-93.
14. Jalolov, T. S. (2023). STUDY THE PSYCHOLOGY OF PROGRAMMERS. American Journal of Public Diplomacy and International Studies (2993-2157), 1(10), 563-568.
15. Sadriddinovich, J. T. (2023). Capabilities of SPSS software in high volume data processing testing. American Journal of Public Diplomacy and International Studies (2993-2157), 1(9), 82-86.
16. Жуков, Д. С. (2020). Создание программы для имитации шифрования машины Enigma на языке Python. Постулат, (1 январь).
17. Jalolov, T. S., & Usmonov, A. U. (2021). "AQLLI ISSIQXONA" BOSHQARISH TIZIMINI MODELLASHTIRISH VA TADQIQ QILISH. Экономика и социум, (9 (88)), 74-77.
18. Jalolov, T. S. (2024). ANALYSIS OF PSYCHOLOGICAL DATA USING SPSS PROGRAM. Multidisciplinary Journal of Science and Technology, 4(4), 477-482.
19. Жалолов, Т. (2023). Использование математических методов в психологических данных (с использованием программного обеспечения SPSS). in Library, 4(4), 359-363.
20. Jalolov, T. S. (2024). ANALYSIS OF PSYCHOLOGICAL DATA USING SPSS PROGRAM. Multidisciplinary Journal of Science and Technology, 4(4), 477-482.
21. Sadriddinovich, J. T. (2024). BASICS OF PSYCHOLOGICAL SERVICE. PSIXOLOGIYA VA SOTSIOLOGIYA ILMIY JURNALI, 2(4), 61-67.
22. Jalolov, T. S. (2024). РАЗВИТИЕ ТВОРЧЕСКОГО МЫШЛЕНИЯ УЧАЩИХСЯ МЛАДШИХ КЛАССОВ С ПОМОЩЬЮ МУЛЬТИМЕДИЙНЫХ ТЕХНОЛОГИЙ. MASTERS, 2(5), 40-47.
23. Jalolov, T. S. (2024). SPSS DASTURI FOYDALANISHDA PSIXOLOGIK MA'LUMOTLARNI TAHLILI. Multidisciplinary Journal of Science and Technology, 4(4), 463-469.
24. Jalolov, T. S. (2024). PYTHONNING MATEMATIK KUTUBXONALARINI O'RGANISH: KENG QAMROVLI QO'LLANMA. BIOLOGIYA VA KIMYO FANLARI ILMIY JURNALI, 2(5), 71-77.
25. Jalolov, T. S. (2023). PARALLEL PROGRAMMING IN PYTHON. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 1(5), 178-183.
26. Jalolov, T. S. (2024). ПОРЯДОК СОЗДАНИЯ ПСИХОЛОГИЧЕСКИХ ТЕСТОВЫХ ПРОГРАММ. PEDAGOG, 7(6), 145-152.
27. Jalolov, T. S. (2024). BOSHLANG'ICH SINF O'QUVCHILARIDA MULTIMEDIA TEXNOLOGIYALARI ORQALI IJODIY FIKRLASHNI KUCHAYTIRISH. BIOLOGIYA VA KIMYO FANLARI ILMIY JURNALI, 2(5), 64-70.
28. Jalolov, T. S. (2023). PYTHON DASTUR TILIDADA WEB-ILOVALAR ISHLAB CHIQISH. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 1(5), 160-166.

29. Jalolov, T. S. (2024). ENHANCING CREATIVE THINKING IN ELEMENTARY SCHOOL STUDENTS THROUGH MULTIMEDIA TECHNOLOGIES. WORLD OF SCIENCE, 7(5), 114-120.
30. Jalolov, T. S. (2024). ВАЖНОСТЬ АНГЛИЙСКОГО ЯЗЫКА В ПРОГРАММИРОВАНИИ. MASTERS, 2(5), 55-61.
31. Jalolov, T. S. (2023). MATH MODULES IN C++ PROGRAMMING LANGUAGE. Journal of Universal Science Research, 1(12), 834-838.
32. Jalolov, T. S. (2024). EXPLORING THE MATHEMATICAL LIBRARIES OF PYTHON: A COMPREHENSIVE GUIDE. WORLD OF SCIENCE, 7(5), 121-127.
33. Jalolov, T. S. (2024). THE IMPORTANCE OF ENGLISH IN PROGRAMMING. WORLD OF SCIENCE, 7(5), 128-134.
34. Jalolov, T. S. (2024). ИЗУЧЕНИЕ МАТЕМАТИЧЕСКИХ БИБЛИОТЕК PYTHON: ПОДРОБНОЕ РУКОВОДСТВО. MASTERS, 2(5), 48-54.
35. Jalolov, T. S. (2023). PYTHON INSTRUMENTLARI BILAN KATTA MA'LUMOTLARNI QAYTA ISHLASH. Educational Research in Universal Sciences, 2(11 SPECIAL), 320-322.
36. Jalolov, T. S. (2024). DASTURLASHDA INGLIZ TILINING AHAMIYATI. BIOLOGIYA VA KIMYO FANLARI ILMIY JURNALI, 2(5), 78-84.
37. Jalolov, T. S. (2023). Artificial intelligence python (PYTORCH). Oriental Journal of Academic and Multidisciplinary Research, 1(3), 123-126.
38. Jalolov, T. S. (2023). WORKING WITH MATHEMATICAL FUNCTIONS IN PYTHON. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 1(5), 172-177.
39. Jalolov, T. S. (2023). SPSS YOKI IJTIMOIY FANLAR UCHUN STATISTIK PAKET BILAN PSIXOLOGIK MA'LUMOTLARNI QAYTA ISHLASH. Journal of Universal Science Research, 1(12), 207-215.
40. Jalolov, T. S. (2023). Solving Complex Problems in Python. American Journal of Language, Literacy and Learning in STEM Education (2993-2769), 1(9), 481-484.
41. Sadriddinovich, J. T. (2023). IDENTIFYING THE POSITIVE EFFECTS OF PSYCHOLOGICAL AND SOCIAL WORK FACTORS BETWEEN INDIVIDUALS AND DEPARTMENTS THROUGH SPSS SOFTWARE. In INTERNATIONAL SCIENTIFIC RESEARCH CONFERENCE (Vol. 2, No. 18, pp. 150-153).
42. Jalolov, T. (2023). UNDERSTANDING THE ROLE OF ATTENTION AND CONSCIOUSNESS IN COGNITIVE PSYCHOLOGY. Journal of Universal Science Research, 1(12), 839-843.
43. Jalolov, T. S. (2023). SUN'IY INTELLEKTDA PYTHONNING (PYTORCH) KUTUBXONASIDAN FOYDALANISH. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 1(5), 167-171.
44. Jalolov, T. S. (2023). PYTHON TILINING AFZALLIKLARI VA KAMCHILIKLARI. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 1(5), 153-159.
45. Sadriddinovich, J. T. (2024). ANALYSIS OF PSYCHOLOGICAL DATA IN ADOLESCENTS USING SPSS PROGRAM. PEDAGOG, 7(4), 266-272.

46. Jalolov, T. S. (2023). TEACHING THE BASICS OF PYTHON PROGRAMMING. International Multidisciplinary Journal for Research & Development, 10(11).
47. Jalolov, T. S. (2023). THE MECHANISMS OF USING MATHEMATICAL STATISTICAL ANALYSIS METHODS IN PSYCHOLOGY. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 1(5), 138-144.
48. Jalolov, T. S. (2024). PYTHONDA MATEMATIK STATISTIK TAHLIL HAQIDA. WORLD OF SCIENCE, 7(5), 583-590.
49. Jalolov, T. S. (2024). DJANGO'S ROLE IN WEB PROGRAMMING. MASTERS, 2(5), 129-135.
50. Jalolov, T. S. (2024). PYTHON LIBRARIES IN HIGH VOLUME DATA PROCESSING. WORLD OF SCIENCE, 7(5), 561-567.
51. Jalolov, T. S. (2024). ИСПОЛЬЗОВАНИЕ API В PYTHON: ПОДРОБНОЕ РУКОВОДСТВО. WORLD OF SCIENCE, 7(5), 553-560.
52. Jalolov, T. S. (2024). МАТЕМАТИЧЕСКОМ СТАТИСТИЧЕСКОМ АНАЛИЗЕ В PYTHON. MASTERS, 2(5), 151-158.
53. Jalolov, T. S. (2024). LEVERAGING APIS IN PYTHON: A COMPREHENSIVE GUIDE. WORLD OF SCIENCE, 7(5), 544-552.
54. Jalolov, T. S. (2024). DJANGONING VEB-DASTURLASHDAGI ROLI. WORLD OF SCIENCE, 7(5), 576-582.
55. Jalolov, T. S. (2024). PYTHON-DA API-LARDAN FOYDALANISH: KENG QAMROVLI QO'LLANMA. MASTERS, 2(5), 113-120.
56. Jalolov, T. S. (2024). YUQORI HAJMLI MA'LUMOTLARNI QAYTA ISHLASHDA PYTHON KUTUBXONALARI. MASTERS, 2(5), 121-128.
57. Jalolov, T. S. (2024). DJANGO В ВЕБ-ПРОГРАММИРОВАНИИ. MASTERS, 2(5), 136-142.
58. Jalolov, T. S. (2023). ADVANTAGES OF DJANGO FEMWORKER. International Multidisciplinary Journal for Research & Development, 10(12).
59. Jalolov, T. S. (2023). Programming languages, their types and basics. Technical science research in Uzbekistan, 1(5), 145-152.
60. Jalolov, T. S. (2023). PEDAGOGICAL-PSYCHOLOGICAL FOUNDATIONS OF DATA PROCESSING USING THE SPSS PROGRAM. INNOVATIVE DEVELOPMENTS AND RESEARCH IN EDUCATION, 2(23), 220-223.
61. Jalolov, T. S. (2023). Programming languages, their types and basics. Technical science research in Uzbekistan, 1(5), 145-152.
62. Jalolov, T. S. (2024). ЗНАЧЕНИЕ ИНФОРМАЦИОННОЙ КОММУНИКАЦИИ В ВЫСШЕМ ОБРАЗОВАНИИ. MASTERS, 2(8), 1-7.
63. Jalolov, T. S. (2024). SPSS S DASTURIDAN PSIXOLOGIK MA'LUMOTLARNI TAHLILIDA FOYDALANISH. MASTERS, 2(8), 8-14.