

CONTENT AND SCOPE OF THE EXPLANATORY NOTE

Structure and content of the explanatory note

The contents of the explanatory note must correspond to the task of the bachelor's project.

The explanatory note contains a number of mandatory components, the requirements for which are specified by the graduating departments in accordance with the profile of the specialty.

The explanatory note consists of mandatory parts (structural elements), which are submitted in the following order:

1. Title page. (Appendix 1)
2. Task for the project. (Appendix 2)
3. Abstracts. (Appendix 3)
4. Album description. (Appendix 4)
5. Technical task. (Appendix 5)
6. Contents of the explanatory note. (Appendix 6)
7. List of acronyms (if necessary). (Appendix 7)
8. Introduction with justification of the actuality, necessity or other reasons to perform the project, definition and formulation of the task. (Appendix 8)
9. Overview (including, if necessary, patent search) of existing solutions of the above defined problem and their comparative analysis with the requirements of the problem.
10. Solution of the task (description of all necessary aspects).
11. Conclusions (not numbered and start from new pages).
12. References. (Appendix 9)
13. Appendices (copies of graphic materials of the project, program listings).

In addition, the explanatory note should contain conclusions to each part. It is allowed to add another parts as suggested by the mentor. The volume of the explanatory note must be at least 55 pages of type-written text on A4 sheets (without appendices), printing should be done on one page of the sheet. The first part may not exceed 25% of the volume of the explanatory note. The division of the material into separate parts is determined by the nature of the topic and the properties of the problem being solved. Appendices are not included in this volume, but their size is limited to 20 pages.

The explanatory note of the project should be presented in the form of a bound book and recorded on a computer storage medium in one of the modern formats.

Auxiliary elements of the explanatory note

The title page and tasks for the project are performed on special pages (Appendix 1). The name of the project topic should not differ from the approved project topic by the university (№ of the order is entered when submitting the project to the secretary of the exam commission).

The abstract contains a summary of the completed project with an indication of the original part of the project. The abstract provides information about the purpose, composition of the document and a summary of the main part.

The title page, task and abstracts are not numbered, but are included in the total number of pages in the note.

The introduction describes the purpose of the project and considers the task from the standpoint of its actuality, the importance of its solution for the subject area to which the topic of the bachelor's project. The current level of solving this problem and the relationship with other projects on this topic are briefly described. The main technical characteristics of development and the expected technical and economic effect from its realization are given. The volume of the introduction is up to 5 pages.

The volume of auxiliary elements of the note (together with the content) should not exceed 10 pages.

The main part of the explanatory note

The main part of the explanatory note may contain the following:

- Task description;
- Description of the subject area and directions of research;
- Analysis and characteristics of the object being designed;
- Rationale of the optimal variant of the bachelor project's implementation;
- Description of algorithm and software;
- Selection and rationale of the structure of the system and/or its components;
- The main decisions on the implementation of the system as a whole and its components;
- Description of the used software;
- Development of a mathematical model and analysis of its solution methods;
- User guide for the system.

The main part contains all the necessary decisions and rationale, accompanied by appropriate computations, including with the help of a computer, illustrations, references to literature sources, the results of own research.

It is desirable that the developed software product be more advanced in technical and/or economic sense than the existing ones. That is, the implementation should provide a real improvement of characteristics compared to existing implementations, decreasing of its cost, increasing of efficiency, etc.

As a result of theoretical research of the object being designed, a model of the object or process is developed, its characteristics are determined. The model should sufficiently describe the processes occurring in the object and at the same time not be difficult to understand. It is presented in the form of tables, graphs, analytical relationships.

The structure and/or functional scheme of development is most often given in the graphic part of the bachelor's project.

All computations must be done clearly and logically using modern methods and a computer. If the complex computation is performed on a computer, it is necessary to submit the text of the program developed by the bachelor (large programs should be listed in the appendices). When performing computations graphoanalytical methods are often used. Experimental, digital data are recommended to be presented in tables.

When developing software, the following issues should be considered: rationale of the chosen programming language and software, requirements for functional characteristics, requirements for reliability, development of the program scheme, requirements for hardware, requirements for software operation. The explanatory note should have a part with examples of the usage of the developed software and user guide.

The conclusions provide an estimation of the results of the bachelor's project or its separate stage (also negative), possible areas of its use. Conclusions should include a brief generalized estimation of the results of development, including in their technical and economic efficiency. It is necessary to compare the obtained results of all characteristics of the object being designed with the task for the bachelor's project and with the main indicators of modern similar objects. It is necessary to indicate which new technical solution is the basis of the project and what are its advantages, what is new was proposed by the student. On the basis of the received conclusions recommendations on use of development can be given. They must be specific and fully confirmed by the project.

GRAPHIC MATERIAL

The project includes graphic and text documentation. Graphic material intended to illustrate the report on the defense may contain schemes, drawings, diagrams, etc. It is not allowed to apply on posters images that are not directly related to the project.

The graphic part of the project must contain at least 3 sheets (A4 format) with the following content:

SHEET 1. Algorithm diagram;

SHEET 2. Functional diagram (for example, data diagram, class diagram);

SHEET 3. Block diagram (for example, block diagram of a device or software).

With the consent of the mentor, taking into account the peculiarities of the project theme, the composition of the graphic part can be changed to increase the number of sheets related to the project theme. The maximum number of sheets is limited to 5.

RULES OF BACHELOR'S DIPLOMA PROJECTS TYPOGRAPHY

The project should be typed using a computer in English.

The text of the explanatory note is placed in a frame with indents of 10 mm from the borders of the frame and page numbering in the appropriate field of the frame.

For the text the font Times New Roman of the size 14 in one and a half line intervals with alignment on width of the page with no more than 32 lines on a page on condition of its uniform filling should be used. Each paragraph begins with an indent and there is no extra space between paragraphs.

The text of the explanatory note is divided into sections, and those, in turn, into subsections, paragraphs. Sections are numbered throughout the document, subsections, paragraphs and sub-paragraphs are numbered within the upper structural element with the addition through the dot numbers of all higher structural elements. For example, 1.2.3 is 1st section, 2nd subsection, 3rd clause.

Section titles should be in bold with a larger font size:

SECTION 18

Subsection 16

Clause 14

Each section is made on a new page with an indentation of 1 font height (14 points). The following text begins with an indentation of 1 font height. It is recommended to compose titles of one sentence. If the title consists of two or more sentences, they are separated by a period. Words wrapping in the title is not allowed.

Subsections, clauses and sub-clauses are written in the paragraph in lower case (except for the 1st capital letter) on the current page with a indentation from the previous text (including the title of the section) in 1 font height. The following text begins with an indentation of 1 font height.

The titles of the recommended structural parts “TABLE OF CONTENTS”, “LIST OF ABBREVIATIONS”, “INTRODUCTION”, “SECTION”, “CONCLUSION”, “REFERENCE LIST”, “APPENDIX” or their semantic substitutes are printed in capital letters in the center of the page.

It is not allowed to place the name of the section, subsection, as well as clause and sub-clause at the bottom of the page, if it is followed by only one line of text.

Appendix 1: Title page of the explanatory note
NATIONAL TECHNICAL UNIVERSITY OF UKRAINE
“IGOR SIKORSKY KYIV POLYTECHNIC INSTITUTE”

Faculty of Informatics and Computer Engineering

Department of Computer Engineering

Admitted to the defense:

Chairman of the Department

_____ Sergii STIRENKO
(signature)

“ ” _____ 2022.

Graduation project
for obtaining a bachelor's degree

in the educational and professional program "Computer systems and networks".
specialty 123 "Computer Engineering"

on the topic: _____

The work was performed by: ____ year student, group _____
(group code)

(Full Name) (signature)

Project supervisor _____
(position, academic degree, academic status, surname and initials) (signature)

Advisor (normative control) _____
(section name) (position, academic degree, academic status, surname and initials) (signature)

Reviewer _____
(position, academic degree, academic status, surname and initials) (signature)

I certify that in this graduation project there are no borrowings from the works of other authors without proper references.

Student _____
(signature)

Kyiv – 2022.

**NATIONAL TECHNICAL UNIVERSITY OF UKRAINE
“IGOR SIKORSKY KYIV POLYTECHNIC INSTITUTE”**

Faculty of Informatics and Computer Engineering

Department of Computer Engineering

Admitted to the defense:

Chairman of the Department

Sergii STIRENKO

(signature)

“ ___ ” _____ 2022.

**Graduation project
for obtaining a bachelor's degree
in the educational and professional program
“Software Engineering for Computer Systems”
specialty 121 "Software Engineering"**

on the topic: _____

The work was performed by: ____ year student, group _____
(group code)

(Full Name) (signature)

Project supervisor _____
(position, academic degree, academic status, surname and initials) (signature)

Advisor (normative control) _____
(section name) (position, academic degree, academic status, surname and initials) (signature)

Reviewer _____
(position, academic degree, academic status, surname and initials) (signature)

I certify that in this graduation project there are no borrowings from the works of other authors without proper references.

Student _____
(signature)

Kyiv – 2022.

Appendix 2: Sample of filling in the technical task sheet

NATIONAL TECHNICAL UNIVERSITY OF UKRAINE “IGOR SIKORSKY KYIV POLYTECHNIC INSTITUTE”

Faculty of Informatics and Computer Engineering

Department of Computer Engineering

Level of higher education - first (bachelor)

Education and Professional Program

“Computer Systems and Networks”

specialty 123 "Computer Engineering"

(Education and Professional Program

"Computer Systems Software Engineering

specialty 121 "Software Engineering")

APPROVED

Chairman of the Department

Sergii STIRENKO

(signature)

“ ” _____ 2022.

TASK

for a student's bachelor's degree project

(Full Name)

1. Project topic Development of a software package for the creation of an electronic text-book based on hypertext technology.

Project supervisor _____,
(Full Name, academic degree, academic status)

approved by the order of the University of _____, 2022 № _____

2. Deadline for submission of the completed project by the student May 20, 2022.

3. Output data to the project technical documentation, theoretical and statistical data, patents for the product.

4. The content of the explanatory note (the list of issues to be developed)

Description of the subject area, research of methods of construction of the electronic textbook on the basis of hypertext technology, the program of providing hypertext technologies.

5. List of graphic material (with exact designation of obligatory drawings)

Block diagram of the system, generalized scheme of the system, the scheme of the algorithm of the editor module, the scheme of the information windows of the editor

6. Project consultant, indicating the sections of the project that are included in them

Section	Advisor	Signature, date	
		Task issued	Task accepted

7. Date of issue of the task _____

Timetable

№	Naming the stages of the diploma project	Timeframe for completing the phases	Notes
1.	<i>Approval of the subject of the project</i>	<i>10.12.2022-15.12.2022</i>	
2.	<i>Study and analysis of the task</i>	<i>15.12.2022-15.03.2022</i>	
3.	<i>Development of architecture and general system structures</i>	<i>15.03.2022-25.03.2022</i>	
4.	<i>Development of separate structures subsystems</i>	<i>25.03.2022-5.04.2022</i>	
5.	<i>Software implementation of the system</i>	<i>5.04.2022-15.04.2022</i>	
6.	<i>Making an explanatory note</i>	<i>15.04.2022-20.05.2022</i>	
7.	<i>Software product protection</i>	<i>25.04.2022</i>	
8.	<i>Preliminary protection</i>	<i>23.05.2022</i>	
9.	<i>Protection</i>	<i>17.06.2022</i>	

Graduate student _____
(signature)

Project supervisor _____
(signature)

Appendix 3. Annotation

Annotation

In this project for a Bachelor's Degree, the algorithm (based on the solution for Steiner problem) of building of an optimal network for source-consumer product transporting is realized.

The software product makes it possible to get the transport costs data, as well as the network graphical mapping. This program was realized in the Object Pascal 5.0. language in Borland Delphi 5.0 visual environment.

The integrated mapping from MapInfo 5.0 geoinformation system by means of OLE mechanism for objects control is used for the visualization, input and output of mapped information.

Анотація

В бакалаврському дипломному проєкті реалізовано алгоритм побудови оптимальної транспортної мережі, призначеної для транспортування продукту від джерела до користувачів, який базується на розв'язанні зваженої задачі Штейнера.

Програма дозволяє підрахувати вартість транспортних витрат, а також графічне зображення усієї мережі. Програмний продукт був створений на мові Object Pascal 5.0 у візуальному середовищі Borland Delphi 5.0.

Для візуалізації, вводу та отримання картографічної інформації використовується інтегрована картографія з геоінформаційної системи MapInfo 5.0, опосередкованої механізмом керування об'єктами OLE.

Appendix 5. Technical task

Technical task for the diploma project

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16. PURPOSE OF THE DEVELOPMENT.....	2
17. THE SOURCES OF DEVELOPMENT	2
18. TECHNICAL REQUIREMENTS	3
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					IAJII.467100.002 TT			
CHG	Sheets	№ document.	Sign.	Date	Development of the distance learning course. Technical task.	Type	Sheets	Sheet
Developed		Krysan T.V.					44	4
Checked		Rusanova O.V.				NTUU «KPI», FICE, OT-01		
Norm. control		Simonenko V. P.						
Approved		Stirenko S. G.						

1. NAME AND AREA OF APPLICATION

This technical task is extended to the development of a distance learning course on "Local Computer Science". Scope of application: alternative to the current method of teaching the course "Local Computer Networks" in the higher educational institutions.

2. REASONS FOR DEVELOPMENT

The basis for the development is the assignment for the undergraduate project on educational and professional program "Computer systems and networks" specialty 123 "Computer Engineering", approved by the Department of Computer Engineering of the National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute".

3. PURPOSE OF THE DEVELOPMENT

The purpose of this project is to develop a distance learning course on "Local area networks".

4. THE SOURCES OF DEVELOPMENT

The source of development is scientific and technical literature on computer networks and distance learning, publications in periodicals, guides on distance learning platforms, publications on the Internet on these issues.

5. TECHNICAL REQUIREMENTS

5.1. Requirements for the product to be developed

- Semantic self-sufficiency of the course - clear contours of the subject of study.
- Independence - the course must contain only the necessary and sufficient information that allows you to fully disclose the meaning of the studied subject.
- Technical correctness and relevance of the information that forms the content of the course.

5.2. Software requirements

- Operation system MS Windows 95, MS Windows 98, MS Windows NT 4, MS Windows 2000 Workstation
- Lotus Notes client 5.08
- Lotus Learning Space Forum 3.01
- MS Internet Explorer 4.0 or higher
- MS Netscape Communicator 4.62 or higher

					IAJIII.467100.002 TT	Sheet
CHG.	Sheets	№ document	Sign.	Date		2

5.3. Requirements for the hardware

- Computer based on Intel Pentium 166 or higher processor
- At least 64 MB of operative memory
- Free hard disk space of at least 800 MB
- Internet connection

6. STAGES OF DEVELOPMENT

	Date
6.1 Study of literature	20.12.2022
6.2 Creation and arrangement of the technical task	15.01.2022
6.3 Analysis of the structure of the developed training course	27.01.2022
6.4 Creation of modules for the developed course	14.02.2022
6.5 Test of remote access to the course	01.05.2022
6.6 Debugging and bug fixing	15.05.2022
6.7 Preparation of diploma project documentation	06.06.2022

					IAJIIQ.467100.002 TT	Sheet
CHG	Sheets	№ document	Sign.	Date		3

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					IAJII.467100.002 TT			
CHG	Sheets	№ document	Sign.	Date	Development of the distance learning course. Contents	Letter	Sheets	Sheet
Developed		Krysan T.V.					44	
Checked		Rusanova O.V.						
Reviewer								
Norm. control		Simonenko V. P.				NTUU «KPI», FICE, OT-01		
Approved		Stirenko S. G.						

Appendix 7. Shortcut List

SHORTCUT LIST

BDT	Batch Data Transfer
BS	Basic Station
BRTS	Basic Receiving and Transmitting Station
CN	Cellular Networks
CMCN	Cellular Mobile Communication Networks
CS	Central Station
FM	Frequency Modulation
ITU	International Telecommunication Union
MC	Management Channel
MCN	Mobile Communication Networks
MS	Moving Station
PC	Personal Computer
PCS	Paging Communication Systems
PRCN	Personal Radio Call Networks
PSCN	Personal Satellite Communication Networks
PTN	Public Telephone Network
SC	Switch Center
ST	Subscriber Terminal
TC	Traffic Channel
TN	Trunking Networks
A3	(Алгоритм аутентифікації) Authentication Algorithm
A5	(Алгоритм поточного шифрування) Stream Cipher Algorithm
A8	(Алгоритм формування ключа шифрування) Ciphering Key Generation Algorithm
UMTS	(Удосконалена мобільна телефонна служба) Advanced Mobile Phone Service

Appendix 8. Introduction

INTRODUCTION

Mobile communication is one of the most dynamically developing sectors of the infrastructure of modern society. This is facilitated by the constant demand for services and information, as well as the achievement of scientific and technological progress in the field of electronics, fiber optics and computer technology. In the concept of universal personal communication actively developed by ITU (International Telecommunication Union), a large place is given to mobile communication networks (MCN).

Currently, in many countries, intensive implementation of cellular MCN, personal radio call networks and satellite communication systems is underway. Such networks are designed to transmit data and provide mobile and stationary objects by telephone. Data transmission to a mobile subscriber dramatically expands its capabilities, since, in addition to telephone, it can receive telex and facsimile messages, all sorts of graphic information and much more. The increase in the amount of information will require a reduction in the time of its transmission and receiving. Therefore, now there is a steady increase in the production of mobile radio communications (pagers, cellular radio phones, satellite user terminals).

The advantages of MCN are as follows: mobile communication allows the subscriber to receive communication services anywhere within the zones of ground or satellite networks; thanks to the progress in the technology of communication means production, small-sized universal subscriber terminals have been created connecting to a personal computer and have interfaces to connect to MCN of all applicable standards.

Appendix 9. Design of the bibliography

REFERENCE LIST

1. Douglas T. Distributed computing in practice: The Condor experience / T. Douglas, T. Tannenbaum, M. Livny // *Concurrency and Computation: Practice and Experience*. — 2005. — N 2. — P. 323–356.
2. Tannenbaum Andrew S. *Distributed Systems: Principles and Paradigms (2nd Edition)* / Andrew S. Tanenbaum, Maarten van Steen. — Upper Saddle River, NJ, USA: Prentice-Hall, Inc. — 2006.
3. Метод опережающего планирования для ГРИД / В. Н. Коваленко, Е. И. Коваленко, Д. А. Корягин, Э.З. Любимский // *Препринт ИПМ*. — 2005. — No 112. — http://www.keldysh.ru/papers/2005/prep112/prep2005_112.html.
4. Platform LSF 7 Update 6. An Overview of New Features for Platform LSF Administrators. Официальный сайт компании Platform Computing Corporation — 2009. — http://www.platform.com/workload-management/whatsnew_lsf7u6.pdf.
5. Microsoft Windows Compute Cluster Server 2003. Руководство пользователя — 2006. — https://msdb.ru/Downloads/WindowsServer2003/CCS/CCS2003Guide_Rus.pdf.
6. TORQUE Resource Manager Guide. Официальный сайт компании Cluster Resources Inc. — 2009. — <http://www.clusterresources.com/products/torque-resource-manager.php>.
7. PBS Works. Официальный сайт компании Altair Engineering, Inc. — 2006. — <http://www.pbsworks.com/>.
8. Ding X. BWS: balanced work stealing for time-sharing multicores / X. Ding, K. Wang, P. B. Gibbons, X. Zhang // *Proceedings of the 7-th ACM European Conference on Computer Systems*. — EuroSys '12. — New York, NY, USA: ACM. — 2012. — P. 365–378.

Appendix 10. Example of illustration design

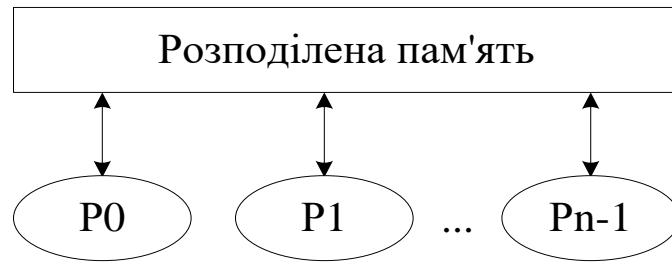


Figure 1.6 – Structure of the PRAM model with distributed memory

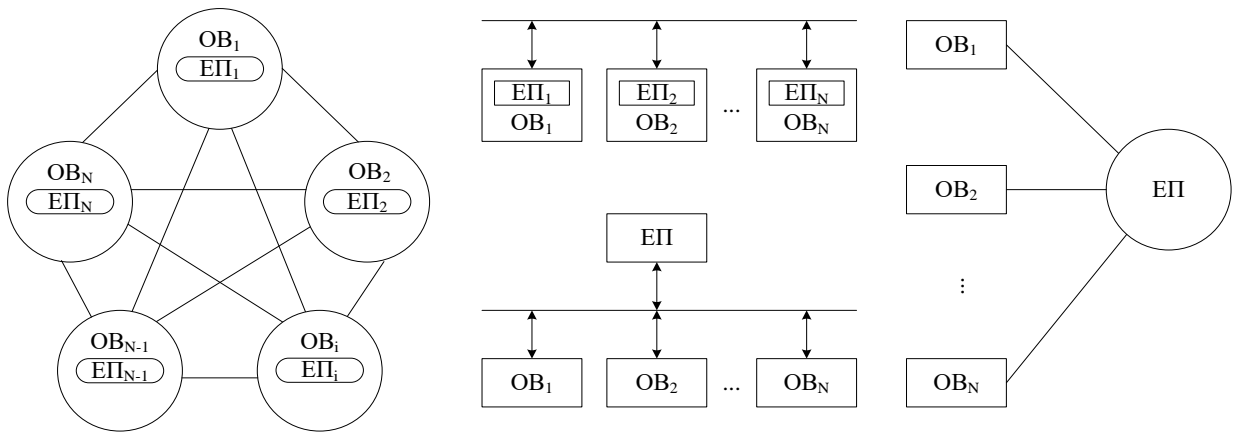


Figure 1.9 – Basic architectures of interaction between the memory architecture and the EP

Appendix 11. Example of formulas and tables design

Example of formulas design

$$C_p = \frac{C_m \cdot P_i}{125}, \quad (2.3)$$

where C_p – average annual liquid concentration, mg/m³;

C_m – maximum liquid concentration, mg/m³;

P_i – the frequency of repetition of the wind of a given direction, %.

Example of tables design

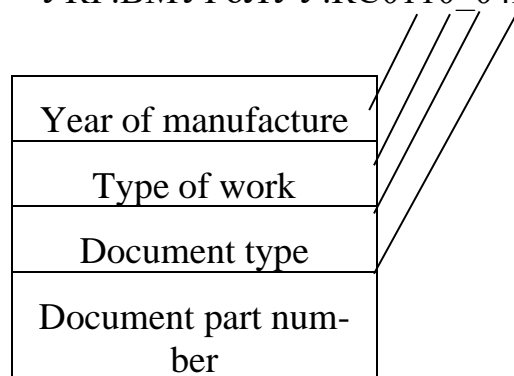
Table 7.8 – Name of Table

№ task	Code of task	Name of task	Prev. work	Actors	Duration of work
1	1-2	Development and approval of Technical requirement	7	P, I	12
2	2-3	Collection of information	1	P, I	11
3	3-5	Designing the Database Structure	2	P, I, П1	12

Appendix 12. Example of filling in the specification

Designation	Name	Remarks
Documentation		
УКР.БМУРПолИУУ.КC0110_04Б 35-1	Users	
УКР.БМУРПолИУУ.КC0110_04Б 81-1	Zapis.doc – Explanatory Note	
Components		
УКР.БМУРПолИУУ.КC0110_04Б 12-1	UDM.PAS – Program Text	
УКР.БМУРПолИУУ.КC0110_04Б 13-1	UDM.TXT – Program Description	
УКР.БМУРПолИУУ.КC0110_04Б 12-2	UZAGR.PAS – Program Text	
УКР.БМУРПолИУУ.КC0110_04Б 13-2	UZAGR.TXT – Program Description	
УКР.БМУРПолИУУ.КC0110_04Б 12-3	U3.PAS – Program Text	
УКР.БМУРПолИУУ.КC0110_04Б 13-3	U3. TXT – Program Description	
УКР.БМУРПолИУУ.КC0110_04Б 12-4	OTCHET.PAS – Program Text	
УКР.БМУРПолИУУ.КC0110_04Б 13-4	OTCHET.TXT – Program Description	

УКР.БМУРПолИУУ.КC0110_04Б 13-4



A part of the document corresponds to a specific program module.

Appendix 13. Corner stamps

ДСТУ ГОСТ 2.104:2006 Form 1

185										
65					70			50		
7	10	23	15	10						
								15	17	10
								Type	Weight	Scale
CHG	Sheet	№ document	Sign.	Date						
Developed	Gorbytenko									
Checked	Synychenko									
T Control								Sheet		Sheets
Norm.control	Shevchuk							20		30
Approved	Tymoshenko									

55

5

ДСТУ ГОСТ 2.104:2006 Form 2

185										
65					70			50		
7	10	23	15	10						
								15	17	18
CHG	Sheet	№ document	Sign.	Date				Type	Sheet	Sheets
Developed	Polishuk									
Checked	Shapovalova									
Norm.control	Gurin									
Approved	Tymoshenko									

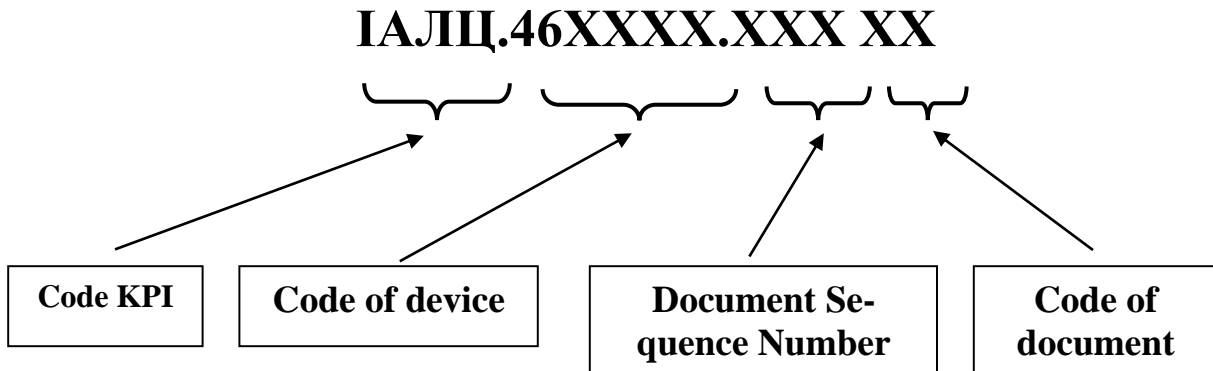
40

ДСТУ ГОСТ 2.104:2006 Form 2a

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<i>CHG</i>							<i>Sheet</i>							<i>№ document</i>																							<i>Sign.</i>															<i>Date</i>																																																																																																																							

15

Appendix 14. Code in stamp



a) Code of KPI – ІАЛЦ;

- Group 466500 – multiprocessor, multi-machine computing systems;
- Group 466510 – digital complexes with radial structure;
- Group 466520 – digital complexes with ring structure;
- Group 466530 – digital complexes with a combined structure;
- Group 466540 – analog complexes;
- Group 466550 – analog-digital complexes;
- Group 467100 – data exchange systems;
- Group 467200 – input, output, information gathering systems;
- Group 467400 – operating units, processors;
- Group 467450 – peripheral processors, specialized terminals;
- Group 467500 – внутрішні ЗП;
- Group 467600 – зовнішні ЗП;
- Group 467800 – display of information;
- Group 468300 – control, switching, aggregation;
- Group 468900 – imitators;
- Group 463910 – simulators;
- Group 465920 – stations, hubs;
- Group 466120 – electromechanical devices, systems.

в) Code of document:

- E1 – electrical structural scheme;
- E2 – electrical functional scheme;
- E3 – electrical principal scheme;

ПЕЗ – list of elements electrical principal scheme;
Д – structural algorithm scheme (may be Д1, Д2, ...);
ОП – Description of the project;
ТП – Statement of technical project;
ПЗ – Explanatory note;
ТЗ – Technical Note. (Technical requirement).

Додаток 15. Відгук керівника бакалаврського дипломного проєкту

ВІДГУК

**керівника дипломного проєкту
на здобуття ступеня бакалавра за освітньо-професійною програмою
“Комп’ютерні системи та мережі”
спеціальності 123 “Комп’ютерна інженерія”**

**(на здобуття ступеня бакалавра за освітньо-професійною програмою
“Інженерія програмного забезпечення комп’ютерних систем”
спеціальності 121 “Інженерія програмного забезпечення”)**

виконаного на тему: “_____”

студентом (-кою) _____
(прізвище, ім’я, по батькові)

(складається у довільній формі із зазначенням: головної цілі дипломного проєкту, в інтересах або на замовлення якої організації він виконаний (в рамках науково-дослідної роботи кафедри, підприємства, НДІ тощо); відповідності виконаного проєкту завданню; ступеня самостійності при виконанні проєкту; рівня підготовленості дипломника до прийняття сучасних рішень; умінь аналізувати необхідні літературні джерела, приймати правильні (інженерні, наукові) рішення, застосовувати сучасні системні та інформаційні технології, проводити фізичне або математичне моделювання, обробляти та аналізувати результати експерименту; найбільш важливих теоретичних і практичних результатів, апробації їх (участь у конференціях, семінарах, оформлення патентів, публікація в наукових журналах тощо); загальної оцінки виконаного проєкту, відповідності якості підготовки дипломника вимогам ОКХ і можливості присвоєння йому відповідної кваліфікації; інші питання, які характеризують професійні якості дипломника)

Проєкт заслуговує оцінки “...”, а студент(ка) присвоєння ступеня бакалавра за освітньо-професійною програмою “Комп’ютерні системи та мережі” спеціальності 123 “Комп’ютерна інженерія”

(Проєкт заслуговує оцінки “...”, а студент(ка) присвоєння ступеня бакалавра за освітньо-професійною програмою “Інженерія програмного забезпечення комп’ютерних систем” спеціальності 121 “Інженерія програмного забезпечення”)

Керівник дипломного проєкту

_____ (посада, вчені звання, ступінь)

_____ (підпис)

_____ (ініціали, прізвище)

Додаток 16. Рецензія

РЕЦЕНЗІЯ

на дипломний проєкт
на здобуття ступеня бакалавра за освітньо-професійною програмою
“Комп’ютерні системи та мережі”
спеціальності 123 “Комп’ютерна інженерія”

(на здобуття ступеня бакалавра за освітньо-професійною програмою
“Інженерія програмного забезпечення комп’ютерних систем”
спеціальності 121 “Інженерія програмного забезпечення”)

виконаного на тему: “ _____ ”

студентом (-кою) _____
(прізвище, ім’я, по батькові)

(складається у довільній формі із зазначенням: відповідності проєкту затвердженій темі та завданню на дипломне проєктування; актуальності теми; реальності проєкту (його виконання на замовлення підприємств, організацій, за науковою тематикою кафедри, НДІ тощо); глибину техніко-економічного обґрунтування прийняття рішень; ступеня використання сучасних досягнень науки, техніки, виробництва, інформаційних та інженерних технологій; оригінальності прийнятих рішень та отриманих результатів; правильності проведених розрахунків і конструкторсько-технологічних рішень; наявності і повноти експериментального (фізичного або математичного) підтвердження прийнятих рішень; якості виконання пояснювальної записки, відповідності креслень вимогам ДСТУ, ЄСКД; можливості впровадження результатів проєкту; недоліків проєкту; оцінки проєкту за 4-бальною системою і можливості присвоєння дипломнику відповідної кваліфікації (формулювання згідно з навчальним планом спеціальності).

Проєкт заслуговує оцінки “...”, а студент(ка) присвоєння ступеня бакалавра за освітньо-професійною програмою “Комп’ютерні системи та мережі” спеціальності 123 “Комп’ютерна інженерія”

(Проєкт заслуговує оцінки “...”, а студент(ка) присвоєння ступеня бакалавра за освітньо-професійною програмою “Інженерія програмного забезпечення комп’ютерних систем” спеціальності 121 “Інженерія програмного забезпечення”)

Рецензент

_____ (посада, вчені звання, ступінь)

_____ (підпис)

_____ (ініціали, прізвище)

Печатка установи, організації рецензента (тільки для зовнішнього, тобто не з факультету ІОТ, рецензента)