

МІНІСТЕРСТВО ОСВІТИ ТА НАУКИ УКРАЇНИ
ЧЕРКАСЬКИЙ ДЕРЖАВНИЙ БІЗНЕС-КОЛЕДЖ

Циклова комісія програмування

Робочий план

з курсу «Основи інформатики, програмування та алгоритмічні мови»

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варіант _____

Вид роботи	Дата	Оцінка
<i>Пром. контроль</i>		
<i>Залік</i>		

Викладач **Марченко С. В.**

Черкаси-2020

Крок 1. (Перша програма)

```
pythonProject file.py
file.py × file2.py × file9.py × file10.py × file11.py × file12.py × file13.py × file14.py × file15.py × file16.py ×

1 import datetime
2
3 name1 = 'Alexander Kushnir'
4
5 def printTimeStamp(name1):
6     print('\nАвтор програми: ' + name1)
7     print('Час компіляції: ' + str(datetime.datetime.now()))
8
9 printTimeStamp(name1)
10
11 #KROK1
12
13 multistringName = """\nKushnir
14 Alexander
15 Andreevich\n"""
16
17 print(multistringName)
18
19
20
21
22

Run: file ×
/Users/timcook/PycharmProjects/pythonProject/venv/bin/python /Users/timcook/PycharmProjects/pythonProject/file.py
Автор програми:Alexander Kushnir
Час компіляції: 2021-02-20 20:01:03.802653
Kushnir
Alexander
Andreevich

Run TODO Problems Debug Terminal Python Console Event Log
19:1 LF UTF-8 4 spaces Python 3.9 (pythonProject) 2
```

Крок 2. (З'єднування рядків)

```
pythonProject file2.py
file.py × file2.py × file9.py × file10.py × file11.py × file12.py × file13.py × file14.py × file15.py × file16.py ×

1 import datetime
2
3 name1 = 'Alexander Kushnir'
4
5 def printTimeStamp(name1):
6     print('\nАвтор програми: ' + name1)
7     print('Час компіляції: ' + str(datetime.datetime.now()))
8
9 printTimeStamp(name1)
10
11 #KROK2
12
13 name = "Kushnir " \
14     "Alexander " \
15     "Andreevich"
16
17 message = "Hello my name is "
18 age = " I am 16 years old"
19
20 print(message + name + " " + age + ".")
21

Run: file2 ×
/Users/timcook/PycharmProjects/pythonProject/venv/bin/python /Users/timcook/PycharmProjects/pythonProject/file2.py
Автор програми:Alexander Kushnir
Час компіляції: 2021-02-20 20:07:27.950734
Hello my name is Kushnir Alexander Andreevich. I am 16 years old.

Process finished with exit code 0
Run TODO Problems Debug Terminal Python Console Event Log
21:1 LF UTF-8 4 spaces Python 3.9 (pythonProject) 2
```

Крок 3. (Прості операції зі змінними)

The screenshot shows the PyCharm IDE interface. The top navigation bar has tabs for 'file.py', 'file2.py', 'file3.py' (which is the active tab), 'file10.py', 'file11.py', 'file12.py', 'file13.py', 'file14.py', 'file15.py', and 'file16.py'. The main code editor window contains Python code. The code defines a function `printTimeStamp` that prints the author's name and the current timestamp. It then calls this function with the variable `name1`. Below the code editor is a 'Run' tool window titled 'file3'. It displays the output of the program: 'Автор програми:Alexander Kushnir' and 'Час компіляції: 2021-02-20 20:11:01.168018'. Underneath this, it lists various arithmetic operations: 16, 8, 48, 3.0, 3, 0, and 20736. At the bottom of the Run window, there is a note: 'PEP 8: W292 no newline at end of file'. The status bar at the bottom right shows the time as 21:12 and the Python version as Python 3.9 (pythonProject).

```
import datetime

name1 = 'Alexander Kushnir'

def printTimeStamp(name1):
    print('\nАвтор програми:' + name1)
    print('Час компіляції: ' + str(datetime.datetime.now()))

printTimeStamp(name1)

#KROK3

a = 12
b = 4

print(a+b)
print(a-b)
print(a*b)
print(a/b)
print(a//b)
print(a%b)
print(a**b)
```

Крок 4. (Ввід даних)

The screenshot shows the PyCharm IDE interface, identical to the previous one but with a different run configuration. The top navigation bar has tabs for 'file.py', 'file2.py', 'file3.py' (active), 'file10.py', 'file11.py', 'file12.py', 'file13.py', 'file14.py', 'file15.py', and 'file16.py'. The main code editor window contains the same Python code as before. The 'Run' tool window titled 'file3' shows the same output: 'Автор програми:Alexander Kushnir' and 'Час компіляції: 2021-02-20 20:11:01.168018'. Below the output, the arithmetic operations are listed: 16, 8, 48, 3.0, 3, 0, and 20736. The status bar at the bottom right shows the time as 21:12 and the Python version as Python 3.9 (pythonProject).

```
import datetime

name1 = 'Alexander Kushnir'

def printTimeStamp(name1):
    print('\nАвтор програми:' + name1)
    print('Час компіляції: ' + str(datetime.datetime.now()))

printTimeStamp(name1)

#KROK3

a = 12
b = 4

print(a+b)
print(a-b)
print(a*b)
print(a/b)
print(a//b)
print(a%b)
print(a**b)
```

Крок 5. (Форматування тексту)

pythonProject > file5.py

```
document = """  
    Рахунок-фактура № ----- від -----  
  
ПОСТАЧАЛЬНИК: ПЛАТНИК: ЧП Іванов Іван Іванович  
Управління Інженерного захисту  
території міста та розвитку  
у бережжя ОМР Код ЗДРПОУ  
24760454 Р/р №: 35420014002262  
МФО 828011 в ГУДКУ в Одеській області  
  
Підстава:  
  
| № | Найменування товару | Од.вим. | Кільк. | Ціна | Сума |  
| | Узгодження проектної | | | | |  
-----  
Run: file5 <  
-----  
    Рахунок-фактура № ----- від -----  
  
ПОСТАЧАЛЬНИК: ПЛАТНИК: ЧП Іванов Іван Іванович  
Управління Інженерного захисту  
території міста та розвитку  
у бережжя ОМР Код ЗДРПОУ  
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Підстава:  
  
| № | Найменування товару | Од.вим. | Кільк. | Ціна | Сума |  
| | Узгодження проектної | | | | |  
| | документації нового | | 1.00 | 0.00 | 0.00 |  
| | будівництва за адресою | | | | |  
| | м.Одеса, вул.Іванова,896 | | | | |  
  
Всього без ПДВ | 0.00 |  
ПДВ | 0.00 |  
Всього сума з ПДВ | |  
-----  
Run TODO Problems Debug Terminal Python Console Event Log  
18:31 LF UTF-8 4 spaces Python 3.9 (pythonProject) 
```

Задачі до питання (1,3 бала)

1)

pythonProject > file6.py

```
import datetime  
import time  
  
name1 = 'Alexander Kushnir'  
  
def printTimeStamp(name1):  
    print('\nАвтор програми:' + name1)  
    print('Час компіляції: ' + str(datetime.datetime.now()))  
  
printTimeStamp(name1)  
  
time = time.asctime()  
print(time)  
  
Run: file6 <  
-----  
/Users/timcook/PycharmProjects/pythonProject/venv/bin/python /Users/timcook/PycharmProjects/pythonProject/file6.py  
  
Автор програми:Alexander Kushnir  
Час компіляції: 2021-02-20 20:21:02.326504  
Sat Feb 20 20:21:02 2021  
  
Process finished with exit code 0  
Run TODO Problems Debug Terminal Python Console Event Log  
13:12 LF UTF-8 4 spaces Python 3.9 (pythonProject) 
```

2)

The screenshot shows the PyCharm IDE interface. The top navigation bar has 'file7' selected. The code editor contains a Python script named file7.py. The script prints the author's name and the compilation time. It also calculates and prints a value based on user input and some constants. The run output window shows the execution results: the author's name, compilation date and time, the calculated value (308.3), and the exit code (95.0). The bottom status bar indicates the process finished with exit code 0.

```
pythonProject > file7.py
1 import datetime
2
3 name1 = 'Alexander Kushnir'
4
5 def printTimeStamp(name1):
6     print('\nАвтор програми:' + name1)
7     print('Час компіляції: ' + str(datetime.datetime.now()))
8
9 printTimeStamp(name1)
10
11 C = int(input())
12 K = C + 273.3
13 F = (C * 1.8) + 32
14 print(K)
15 print(F)
16
```

Run: file7 <

```
/Users/timcook/PycharmProjects/pythonProject/venv/bin/python /Users/timcook/PycharmProjects/pythonProject/file7.py
Автор програми:Alexander Kushnir
Час компіляції: 2021-02-20 20:30:47.910111
308.3
95.0

Process finished with exit code 0
```

Event Log

3)

The screenshot shows the PyCharm IDE interface. The top navigation bar has 'file8' selected. The code editor contains a Python script named file8.py. The script prints the author's name and the compilation time. It also converts centimeters to feet and inches. The run output window shows the execution results: the author's name, compilation date and time, the converted values (189.3, 6.08, and 72.95), and the exit code (95.0). The bottom status bar indicates the process finished with exit code 0.

```
pythonProject > file8.py
1 import datetime
2
3 name1 = 'Alexander Kushnir'
4
5 def printTimeStamp(name1):
6     print('\nАвтор програми:' + name1)
7     print('Час компіляції: ' + str(datetime.datetime.now()))
8
9 printTimeStamp(name1)
10
11 centimeter = float(input())
12
13 foot = centimeter / 30.48
14 inch = centimeter / 2.54
15
16 foot = round(foot, 2)
17 inch = round(inch, 2)
18
19 print(foot)
20 print(inch)
21
```

Run: file8 <

```
/Users/timcook/PycharmProjects/pythonProject/venv/bin/python /Users/timcook/PycharmProjects/pythonProject/file8.py
Автор програми:Alexander Kushnir
Час компіляції: 2021-02-20 20:28:26.501673
189.3
6.08
72.95

Process finished with exit code 0
```

Event Log

4)

pythonProject > file9.py

```
file.py x file2.py x file3.py x file4.py x file5.py x file6.py x file7.py x file8.py x file9.py x file10.py x
```

Project

```
5     def printTimeStamp(name1):
6         print("\nАвтор програми: " + name1)
7         print("Час компіляції: " + str(datetime.datetime.now()))
8
9     printTimeStamp(name1)
10
11    name = str(input("\nName: "))
12    pricePd = float(input("Price per dish: "))
13    quantity = float(input("Quantity: "))
14
15    price = pricePd * quantity
16
17    tips = price * 0.14
18    tax = price * 0.18
19    total = tax + tips + price
20
21    tips = round(tips, 2)
22    tax = round(tax, 2)
23    total = round(total, 2)
24
25    print("\nName----" + name)
26    print("Tips----" + str(tips))
27    print("Tax----" + str(tax))
28    print("Total---" + str(total))
```

Run: file9 x

```
Автор програми:Alexander Kushnir
Час компіляції: 2021-02-20 20:34:14.769803

Name: Chicken
Price per dish: 12
Quantity: 3

Name----Chicken
Tips----5.04
Tax----6.48
Total---47.52
```

Structure Favorites Event Log

Run TODO Problems Debug Terminal Python Console

16:1 LF UTF-8 4 spaces Python 3.9 (pythonProject) Event Log

5)

pythonProject > file10.py

```
file.py x file2.py x file3.py x file4.py x file5.py x file6.py x file7.py x file8.py x file9.py x file10.py x
```

Project

```
1 import datetime
2
3 name1 = 'Alexander Kushnir'
4
5 def printTimeStamp(name1):
6     print("\nАвтор програми: " + name1)
7     print("Час компіляції: " + str(datetime.datetime.now()))
8
9 printTimeStamp(name1)
10
11 qThings = int(input("Things:"))
12 qThingies = int(input("Thingies:"))
13
14 mThings = qThings * 75
15 mThingies = qThingies * 112
16
17 total = mThings + mThingies
18
19 print(str(total)+"grams")
```

Run: file10 x

```
Автор програми:Alexander Kushnir
Час компіляції: 2021-02-20 20:36:26.145413
Things:4
Thingies:3
636grams

Process finished with exit code 0
```

Structure Favorites Event Log

Find Run TODO Problems Debug Terminal Python Console

PEP 8: W292 no newline at end of file 10:1 LF UTF-8 4 spaces Python 3.9 (pythonProject) Event Log

6)

The screenshot shows the PyCharm IDE interface. The top navigation bar has tabs for 'file11.py' and other files like 'file2.py' through 'file10.py'. The left sidebar has sections for 'Project', 'Favorites', 'Structure', and 'Database'. The main code editor contains the following Python script:

```
pythonProject file11.py
file2.py file3.py file4.py file5.py file6.py file7.py file8.py file9.py file10.py file11.py

1 import datetime
2
3 name1 = 'Alexander Kushnir'
4
5 def printTimeStamp(name1):
6     print('\nАвтор програми:' + name1)
7     print('Час компіляції: ' + str(datetime.datetime.now()))
8
9 printTimeStamp(name1)
10
11 days = int(input("Days: "))
12 hours = int(input("Hours: "))
13 minutes = int(input("Minutes: "))
14 seconds = int(input("Seconds: "))
15
16 total = days * 24 * 3600 + hours * 3600 + minutes * 60 + seconds
17
18 print(total)
```

The 'Run' tab is selected, showing the output of the script. The output window displays:

```
Run: file11 x
/Users/timcook/PycharmProjects/pythonProject/venv/bin/python /Users/timcook/PycharmProjects/pythonProject/file11.py

Автор програми:Alexander Kushnir
Час компіляції: 2021-02-20 20:38:20.056306
Days: 1
Hours: 6
Minutes: 45
Seconds: 4
110704

Process finished with exit code 0
```

The bottom status bar shows the time as 12:13, encoding as LF, and the Python version as 3.9 (pythonProject).

7)

The screenshot shows the PyCharm IDE interface. The top navigation bar has tabs for 'file12.py' and other files like 'file3.py' through 'file11.py'. The left sidebar has sections for 'Project', 'Favorites', 'Structure', and 'Database'. The main code editor contains the following Python script:

```
pythonProject file12.py
file3.py file4.py file5.py file6.py file7.py file8.py file9.py file10.py file11.py file12.py

1 import datetime
2
3 name1 = 'Alexander Kushnir'
4
5 def printTimeStamp(name1):
6     print('\nАвтор програми:' + name1)
7     print('Час компіляції: ' + str(datetime.datetime.now()))
8
9 printTimeStamp(name1)
10
11 deposit = float(input("Deposit: "))
12 percent = int(input("Percent: "))
13 years = int(input("Years: "))
14
15 total = deposit * pow((1 + percent/100), years)
16 total = round(total, 2)
17
18 print(total)
```

The 'Run' tab is selected, showing the output of the script. The output window displays:

```
Run: file12 x
/Users/timcook/PycharmProjects/pythonProject/venv/bin/python /Users/timcook/PycharmProjects/pythonProject/file12.py

Автор програми:Alexander Kushnir
Час компіляції: 2021-02-20 20:39:50.705454
Deposit: 1250
Percent: 8
Years: 5
1836.66

Process finished with exit code 0
```

The bottom status bar shows the time as 18:13, encoding as LF, and the Python version as 3.9 (pythonProject).

8)

```
pythonProject > file13.py
Project file4.py x file5.py x file6.py x file7.py x file8.py x file9.py x file10.py x file11.py x file12.py x file13.py x
1 import datetime
2
3 name1 = 'Alexander Kushnir'
4
5 def printTimeStamp(name1):
6     print('\nАвтор програми:' + name1)
7     print('Час компіляції: ' + str(datetime.datetime.now()))
8
9 printTimeStamp(name1)
10
11 quantity = int(input("Quantity:"))
12
13 price = quantity * 8.50
14 discount = quantity * 8.50 * 0.6
15 total = price - discount
16
17 price = "%.2f" % price
18 discount = "%.2f" % discount
19 total = "%.2f" % total
20
21 formatted_price = "{:>166}".format(price)
22 formatted_discount = "{:>166}".format(discount)
23 formatted_total = "{:>166}".format(total)
24
```

Run: file12 x file13 x

```
/Users/timcook/PycharmProjects/pythonProject/venv/bin/python /Users/timcook/PycharmProjects/pythonProject/file13.py
```

Автор програми:Alexander Kushnir
Час компіляції: 2021-02-20 20:43:47.661545
Quantity: 5

68.00
40.80
27.20

Process finished with exit code 0

Find Run TODO Problems Debug Terminal Python Console Event Log

9)

```
pythonProject > file14.py
Project file5.py x file6.py x file7.py x file8.py x file9.py x file10.py x file11.py x file12.py x file13.py x file14.py x
1 import datetime
2
3 name1 = 'Alexander Kushnir'
4
5 def printTimeStamp(name1):
6     print('\nАвтор програми:' + name1)
7     print('Час компіляції: ' + str(datetime.datetime.now()))
8
9 printTimeStamp(name1)
10
11 P = float(input("Pressure in Pascal: "))
12 V = float(input("Volume in litres: "))
13 t = float(input("Temperature in Celsius: "))
14 R = 8.314
15
16 V = V / 1000
17 t = t + 273.3
18
19 n = round((P * V) / (R * t), 2)
20
21 print(n)
```

Run: file12 x file14 x

```
/Users/timcook/PycharmProjects/pythonProject/venv/bin/python /Users/timcook/PycharmProjects/pythonProject/file14.py
```

Автор програми:Alexander Kushnir
Час компіляції: 2021-02-20 20:45:12.966652
Pressure in Pascal: 20000000
Volume in litres: 12
Temperature in Celsius: 20
98.42

Process finished with exit code 0

Find Run TODO Problems Debug Terminal Python Console Event Log

Крок 1. (Циклічний ввід даних)

The screenshot shows the PyCharm IDE interface with the following details:

- Project:** pythonProject
- File:** file15.py
- Code Content:**

```
import datetime

name1 = 'Alexander Kushnir'

def printTimeStamp(name1):
    print('\nАвтор програми:' + name1)
    print('Час компіляції: ' + str(datetime.datetime.now()))

printTimeStamp(name1)

i = 0
while True:
    i += 1
    line = input("Data input number " + str(i) + "\n")
    if line == "end":
        break
```
- Run Tab:** Shows the output of file15.py:

```
Автор програми:Alexander Kushnir
Час компіляції: 2021-02-20 20:48:36.563890
Data input number 1
12
Data input number 2
31
Data input number 3
e
Data input number 4
w
Data input number 5
end
```
- Bottom Status Bar:** Event Log: 17:1 Python 3.9 (pythonProject)