

SYLLABUS/
CURRICULUM



PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE

(Approved by AICTE & Affiliated to Anna University, Chennai)

Madurai - Sivagangai Highway, Arasanoor, Thirumansolai Post, Sivagangai Dt. - 630 561, Tamilnadu
Mobile : 9842102628, 7373002628 Email: info@psyec.edu.in Website : www.psyec.edu.in

City Office : 10, Pandian Saraswathi St, Sivagami Nagar, Narayanapuram, Madurai - 625 014. Telefax- 0452 2682338, Mobile : 98423-02628

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Academic Year 2019-2020

VACCSE1920CDPA - C++ DESIGN PATTERNS IN ACTION: PRACTICAL APPLICATION AND IMPLEMENTATION

OBJECTIVE OF THE COURSE

- The main purpose of this course is to design pattern provides a general reusable solution for the common problems that occur in software design. The pattern typically shows relationships and interactions between classes or objects.
- The objective is to gain a deep understanding of various design patterns available in C++.

CHAPTER 1

Introduction ToC++ Design Patterns, Curiously Recurring Template Pattern- Mixin Inheritance- Old-Fashioned Static Polymorphism- Static Polymorphism With Concepts- Properties- The SOLID Design Principles- Single Responsibility Principle-Open- Closed Principle Interface Segregation Principle Loskov Substitution Principle- Dependency Inversion Principle.

CHAPTER 2

Builder Components – Scenario – Simple Builder Fluent Builder Communicating Intent - Groovy-Style Builder Composite Builder BuilderParameter Builder Inheritance.

CHAPTER 3:

Introduction To Factories – Scenario -Factory Method Factory -Factory Methods And Polymorphism- Nested Factory -Abstract Factory-Functional Factory- Object Tracking ..

CHAPTER 4

Prototype Components -Object Construction -Ordinary Duplication- Duplication Via Copy Construction Virtual Constructor-Serialization -Prototype Factory.

CHAPTER 5

Singleton As Globe As Object -Classic Implementation Thread Safety -The Trouble With Singleton-Per-Thread Singleton Ambient Context -Singleton And Inversion Of ControlMonostate.

CHAPTER 6

Part-I Adapter- Adapter Temporaries -Bidirectional Converter. **Part-II Bridge-**The PimplIdiom-Bridge. **Proxy-Smart Pointer-Property Proxy Virtual Proxy -Communication Proxy-Value Proxy.**

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OUTCOMES

- Upon completion of the course the students will able to understand design patterns in action.
- Students can able to get the basic knowledge on design patterns in working function.
- Students can able to trouble shoot and able to find the solution the minor problems.

COURSE COORDINATOR

HOD/CSE

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Academic Year 2019-2020

VACCSE1920CDPA - C++ DESIGN PATTERNS IN ACTION: PRACTICAL APPLICATION AND IMPLEMENTATION

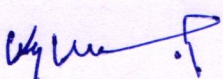
COURSE SCHEDULE

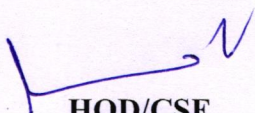
Date	Time	TOPICS
04.11.19	9.00 am to 12.30 pm	Introduction To C++ Design Patterns, Curiously Recurring Template Pattern- Mixin Inheritance- Old-Fashioned Static Polymorphism- Static Polymorphism With Concepts- Properties- The SOLID Design Principles- Single Responsibility Principle-Open- Closed Principle Interface Segregation Principle Loskov Substitution Principle- Dependency Inversion Principle.
	1.00 pm to 5.00 pm	
05.11.19	9.00 am to 12.30 pm	Builder Components – Scenario – Simple Builder Fluent Builder Communicating Intent -Groovy-Style Builder Composite Builder Builder Parameter Builder Inheritance.
	1.00 pm to 5.00 pm	
06.11.19	9.00 am to 12.30 pm	Introduction To Factories – Scenario -Factory Method Factory -Factory Methods And Polymorphism- Nested Factory -Abstract Factory-Functional Factory- Object Tracking
	1.00 pm to 5.00 pm	
07.11.19	9.00 am to 12.30 pm	Prototype Components -Object Construction -Ordinary Duplication- Duplication Via Copy Construction Virtual Constructor-Serialization -Prototype Factory
	1.00 pm to 5.00 pm	
08.11.19	9.00 am to 12.30 pm	Singleton As Globe As Object -Classic Implementation Thread Safety -The Trouble With Singleton-Per-Thread Singleton Ambient Context -Singleton And Inversion Of Control Monostate.
	1.00 pm to 5.00 pm	
09.11.19	9.00 am to 12.30 pm	Part-I Adapter- Adapter Temporaries -Bidirectional Converter. Part-II Bridge - The Pimpl Idiom-Bridge. Proxy-Smart Pointer-Property Proxy Virtual Proxy - Communication Proxy-Value Proxy.
	1.00 pm to 5.00 pm	

Total Hours :35

Tea Break : 10:40 am to 10:55am & 02:45 pm to 15:00 pm

Lunch Break : 12:30pm to 01:00pm


COURSE COORDINATOR


HOD/CSE


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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Academic Year 2019– 2020

One page Report

Name of the course : C++ Design Patterns in Action: Practical Application and Implementation
Development Course Code :VACCSE1920CDPA
Course Coordinator :MR. K. RAJASEKARAN
Date/Duration : 04.11.19-09.11.19— 35 hours

I here affirm that the Final year students of strength 30 have been taught the value-added course title “C++ DESIGN PATTERNS IN ACTION: PRACTICAL APPLICATION AND IMPLEMENTATION” as per the syllabus and completed within the stipulated time duration.

I confirm that the value-added course titled “C++ DESIGN PATTERNS IN ACTION: PRACTICAL APPLICATION AND IMPLEMENTATION” has been conducted in the beginning of the semester and course delivery along with the attendance of the students was recorded.

I confirmed that all the students were actively participated in the course and the eligible students were certified for the course.

Mr. K. Rajasekaran
AP/CSE

Course Co-Ordinator

Dr.A.Askarunisa .,
PROF/CSE

Head of the Department

Dr.R.Raja
Principal

PSYEC

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ASSESSMENT PROCEDURE



PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Academic Year 2019-2020

VACCSE1920CDPA - C++ DESIGN PATTERNS IN ACTION: PRACTICAL APPLICATION AND IMPLEMENTATION

Assessment Questions with Answer

1. What are design patterns in C++ primarily used for?
 - a) To optimize code execution
 - b) To provide a standard approach to software design challenges**
 - c) To minimize the use of object-oriented principles
 - d) To simplify debugging processes
2. Which design pattern is used to ensure a class has only one instance and provides a global point of access to it?
 - a) Factory Pattern
 - b) Singleton Pattern**
 - c) Observer Pattern
 - d) Prototype Pattern
3. Which design pattern is used to separate the construction of a complex object from its representation?
 - a) Builder Pattern**
 - b) Factory Method Pattern
 - c) Abstract Factory Pattern
 - d) Prototype Pattern
4. What is the main purpose of the Observer pattern in C++?
 - a) To control access to an object
 - b) To represent a family of algorithms and encapsulate them in classes
 - c) To define a one-to-many dependency between objects**
 - d) To provide an interface for creating families of related or dependent objects
5. Which design pattern promotes loose coupling between objects by allowing a family of algorithms to be selected at runtime?
 - a) Strategy Pattern**
 - b) Command Pattern
 - c) State Pattern
 - d) Visitor Pattern

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6. In which design pattern is an abstract class used to define a template for the algorithm, while subclasses implement specific steps?

- a) Adapter Pattern
- b) Template Method Pattern**
- c) Decorator Pattern
- d) Composite Pattern

7. Which design pattern is used to encapsulate a request as an object, thereby allowing parameterization of clients with queues, requests, and operations?

- a) Observer Pattern
- b) Command Pattern**
- c) Strategy Pattern
- d) Proxy Pattern

8. What is the purpose of the Factory Method pattern in C++?

- a) To create an interface for creating families of related or dependent objects
- b) To define a one-to-many dependency between objects
- c) To provide an interface for creating objects without specifying their concrete classes**
- d) To separate the construction of a complex object from its representation

9. Which design pattern is used to provide a surrogate or placeholder for another object to control access to it?

- a) Proxy Pattern**
- b) Adapter Pattern
- c) Decorator Pattern
- d) Facade Pattern

10. What is the primary purpose of the Adapter pattern in C++?

- a) To provide a surrogate or placeholder for another object to control access to it
- b) To convert the interface of a class into another interface clients expect**
- c) To separate the construction of a complex object from its representation
- d) To allow for the dynamic addition of responsibilities to objects

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING Academic Year 2019-2020

VACCSE1920CDPA - C++ DESIGN PATTERNS IN ACTION: PRACTICAL

APPLICATION AND IMPLEMENTATION

Assessment Test Paper

REGISTER NUMBER: 912016104002

NAME OF THE STUDENT: Bala Meenakshi . R

10
10

1. What are design patterns in C++ primarily used for?
 - a) To optimize code execution
 - ~~b) To provide a standard approach to software design challenges~~
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 - c) State Pattern



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d) Visitor Pattern

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PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE, ARASANOOR-630561
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

STUDENT PERFORMANCE SHEET

Academic Year : 2019-2020

Course Code : VACCSE1920CDPA

Course Name : C++ Design Patterns in Action: Practical Application and Implementation

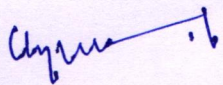
Duration of hours : 35

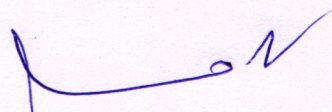
Period of Course : 04.11.19-09.11.19

Sl.No	Register Number	Student Name	Mark
1	912016104001	ARUL SELVI K	99
2	912016104002	BALA MEENAKSHI R	100
3	912016104004	DHANALAKSHMI S	98
4	912016104005	JEYARANI P	94
5	912016104006	KAMU DEVI K	93
6	912016104007	KARTHIKEYAN T	92
7	912016104008	MARISELVI T	100
8	912016104009	MOHAMMED IBRAHIM G	99
9	912016104010	MOHANA N	80
10	912016104011	MONISHA M	89
11	912016104012	MUTHUMARI V	88
12	912016104014	PANDIMEENA V	83
13	912016104016	PRAVEEN K	80
14	912016104017	PREETHAKUMARI N	90
15	912016104018	RAGAVI J	94
16	912016104019	RAJESHWARI A	91
17	912016104020	RAMYA R	81
18	912016104021	RASHEED AHAMED D	84
19	912016104022	RUKMANI S	85
20	912016104023	SANTHOSH KUMAR P	86

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22	912016104025	SHANMUGA PRIYA K	99
23	912016104026	SHERIN BANU H	100
24	912016104027	SULTHAN ALAVUDEEN J	79
25	912016104028	VANJINATHAN P	90
26	912016104029	VISHNUPRIYA V	91
27	912016104030	VISHWANATH PRATAP YADAV V	92
28	912016104031	YOGALAKSHMI M	98
29	912016104401	VIJAYA DHARSANA A	100
30	912016104301	NASHRIN FATHIMA A	99


COURSE COORDINATOR


HOD/CSE


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Enrollment
Student Name
List

PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE, ARASANOOR-630561
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

STUDENT REGISTRATION SHEET

Academic Year : 2019-2020

Course Code : VACCSE1920CDPA

Course Name : C++ Design Patterns in Action: Practical Application and Implementation

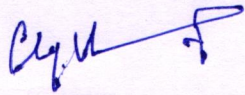
Duration of hours : 35

Period of Course : 04.11.19-09.11.19

ENROLLED STUDENTS LIST			Signature
Sl.NO	Register Number	Student Name	
1	912016104001	ARUL SELVI K	Arul
2	912016104002	BALA MEENAKSHI R	Bala Meenakshi R
3	912016104004	DHANALAKSHMI S	Dhanalakshmi S
4	912016104005	JEYARANI P	Jeyarani.
5	912016104006	KAMU DEVI K	Kamu Devi K
6	912016104007	KARTHIKEYAN T	Karthi.T
7	912016104008	MARISELVI T	mariselvi T
8	912016104009	MOHAMMED IBRAHIM G	Mohammed Ibrahim G
9	912016104010	MOHANA N	Mohana N
10	912016104011	MONISHA M	Monisha
11	912016104012	MUTHUMARI V	Muthumari V
12	912016104014	PANDIMEENA V	Pandimeena V
13	912016104016	PRAVEEN K	Praveen K.
14	912016104017	PREETHAKUMARI N	Preetha

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15	912016104018	RAGAVI J	Ragavi J
16	912016104019	RAJESHWARI A	Rajeshwari A
17	912016104020	RAMYA R	Ranya
18	912016104021	RASHEED AHAMED D	Rasheed
19	912016104022	RUKMANI S	Rus
20	912016104023	SANTHOSH KUMAR P	Santhosh
21	912016104024	SHANMUGA PRIYA B	Shanmuga B
22	912016104025	SHANMUGA PRIYA K	Shanmuga K
23	912016104026	SHERIN BANU H	Sherin Banu H
24	912016104027	SULTHAN ALAVUDEEN J	Sulf
25	912016104028	VANJINATHAN P	Vanjath
26	912016104029	VISHNUPRIYA V	Priya
27	912016104030	VISHWANATH PRATAP YADAV V	Viswanath Pr
28	912016104031	YOGALAKSHMI M	Yogalakshmi M
29	912016104401	VIJAYA DHARSANA A	Vijaya
30	912016104301	NASHRIN FATHIMA A	Nashrin



COURSE COORDINATOR



HOD/CSE



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STUDENTS ATTENDANCE

PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE, ARASANOOR-630561
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

STUDENT ATTENDANCE SHEET

Academic Year : 2019-2020

Course Code : VACCSE1920CDPA

Course Name : C++ Design Patterns in Action: Practical Application and Implementation

Duration of hours : 35

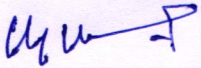
Period of Course : 04.11.19-09.11.19

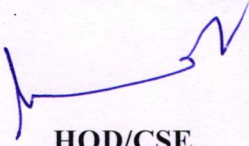
Attendance Sheet			Date: 04/11/2019					
Sl. No	Register Number	Student Name	09.00 am - 10.00 am	10.00 am - 11.00 am	11.15 am - 12.15 pm	01.00 pm - 02.00 pm	02.00 pm - 03.00 pm	03.15 pm - 04.15 pm
1	912016104001	ARUL SELVI K	R.A.S	R.A.S	R.A.S	R.A.S	R.A.S	R.A.S
2	912016104002	BALA MEENAKSHI R	R.B	R.B	R.B	R.B	R.B	R.B
3	912016104004	DHANALAKSHMI S	Dh S	Dh S	Dh S	Dh S	Dh S	Dh S
4	912016104005	JEYARANI P	Jeyan	Jeyan	Jeyan	Jeyan	Jeyan	Jeyan
5	912016104006	KAMU DEVI K	Kf	Kf	Kf	Kf	Kf	Kf
6	912016104007	KARTHIKEYAN T	Ka	Ka	Ka	Ka	Ka	Ka
7	912016104008	MARISELVI T	may	may	may	may	may	may
8	912016104009	MOHAMMED IBRAHIM G	M	M	M	M	M	M
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10	912016104011	MONISHA M	monisha	Monisha	Monisha	monisha	monisha	Monisha
11	912016104012	MUTHUMARI V	muthumari	muthumari	muthumari	muthumari	muthumari	muthumari
12	912016104014	PANDIMEENA V	Pandi	Pandi	Pandi	Pandi	Pandi	Pandi
13	912016104016	PRAVEEN K	Pf	Pf	Pf	Pf	Pf	Pf

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15	912016104018	RAGAVI J	Rag	Rag	Rag	Rag	Rag	Rag
16	912016104019	RAJESHWARI A	Rajesh	Rajesh	Rajesh	Rajesh	Rajesh	Rajesh
17	912016104020	RAMYA R	Ramya	Ramya	Ramya	Ramya	Ramya	Ramya
18	912016104021	RASHEED AHAMED D	Rashed	Rashed	Rashed	Rashed	Rashed	Rashed
19	912016104022	RUKMANI S	Rf	Rf	Rf	Rf	Rf	Rf
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21	912016104024	SHANMUGA PRIYA B	SP.B	SP.B	SP.B	SP.B	SP.B	SP.B
22	912016104025	SHANMUGA PRIYA K	SP.K	SP.K	SP.K	SP.K	SP.K	SP.K
23	912016104026	SHERIN BANU H	SB.H	SB.H	SB.H	SB.H	SB.H	SB.H
24	912016104027	SULTHAN ALAVUDEEN J	S	S	S	S	S	S
25	912016104028	VANJINATHAN P	V	V	V	V	V	V
26	912016104029	VISHNUPRIYA V	Vishu	Vishu	Vishu	Vishu	Vishu	Vishu
27	912016104030	VISHWANATH PRATAP YADAV V	Vishwa	Vishwa	Vishwa	Vishwa	Vishwa	Vishwa
28	912016104031	YOGALAKSHMI M	Yoga Lakshmi	Yoga Lakshmi	Yoga Lakshmi	Yoga Lakshmi	Yoga Lakshmi	Yoga Lakshmi
29	912016104401	VIJAYA DHARSANA A	VDharsana	VDharsana	VDharsana	VDharsana	VDharsana	VDharsana
30	912016104301	NASHRIN FATHIMA A	Fathima	Fathima	Fathima	Fathima	Fathima	Fathima

Tea Break : FN- 11:00 am to 11:15am
AN-03:00 pm to 03:15 pm
Lunch Break : 12:15 pm to 01:00pm


COURSE COORDINATOR


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PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE, ARASANOOR-630561
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

STUDENT ATTENDANCE SHEET

Academic Year : 2019-2020

Course Code : VACCSE1920CDPA

Course Name : C++ Design Patterns in Action: Practical Application and Implementation

Duration of hours : 35

Period of Course : 04.11.19-09.11.19

Attendance Sheet			Date: 05/11/2019					
Sl. No	Register Number	Student Name	09.00 am - 10.00 am	10.00 am - 11.00 am	11.15 am - 12.15 pm	01.00 pm - 02.00 pm	02.00 pm - 03.00 pm	03.15 pm - 04.15 pm
1	912016104001	ARUL SELVI K	R.S.S	R.S.S	R.S.S	R.S.S	R.S.S	R.S.S
2	912016104002	BALA MEENAKSHI R	R.BN	R.BN	R.BN	R.BN	R.BN	R.BN
3	912016104004	DHANALAKSHMI S	Dh.S	Dh.S	Dh.S	Dh.S	Dh.S	Dh.S
4	912016104005	JEYARANI P	Jeyarani	Jeyarani	Jeyarani	Jeyarani	Jeyarani	Jeyarani
5	912016104006	KAMU DEVI K	Kd	Kd	Kd	Kd	Kd	Kd
6	912016104007	KARTHIKEYAN T	T.K	T.K	T.K	T.K	T.K	T.K
7	912016104008	MARISELVI T	mariselvi.T	mariselvi.T	mariselvi.T	mariselvi.T	mariselvi.T	mariselvi.T
8	912016104009	MOHAMMED IBRAHIM G	M	M	M	M	M	M
9	912016104010	MOHANA N	Mohf	Mohf	Mohf	Mohf	Mohf	Mohf
10	912016104011	MONISHA M	Monisha	Monisha	Monisha	Monisha	Monisha	Monisha
11	912016104012	MUTHUMARI V	Muth	Muth	Muth	Muth	Muth	Muth
12	912016104014	PANDIMEENA V	P	P	P	P	P	P
13	912016104016	PRAVEEN K	Prvf	Prvf	Prvf	Prvf	Prvf	Prvf

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14	912016104017	PREETHAKUMARI N	Preetha	Preetha	Preetha	Preetha	Preetha	Preetha
15	912016104018	RAGAVIJ	Ragavi	Ragavi	Ragavi	Ragavi	Ragavi	Ragavi
16	912016104019	RAJESHWARI A	Rajeshwari	Rajeshwari	Rajeshwari	Rajeshwari	Rajeshwari	Rajeshwari
17	912016104020	RAMYA R	Ramya	Ramya	Ramya	Ramya	Ramya	Ramya
18	912016104021	RASHEED AHAMED D	Rasheed	Rasheed	Rasheed	Rasheed	Rasheed	Rasheed
19	912016104022	RUKMANI S	Rukmani	Rukmani	Rukmani	Rukmani	Rukmani	Rukmani
20	912016104023	SANTHOSH KUMAR P	Santhosh	Santhosh	Santhosh	Santhosh	Santhosh	Santhosh
21	912016104024	SHANMUGA PRIYA B	Shanmuga	Shanmuga	Shanmuga	Shanmuga	Shanmuga	Shanmuga
22	912016104025	SHANMUGA PRIYA K	Shanmuga	Shanmuga	Shanmuga	Shanmuga	Shanmuga	Shanmuga
23	912016104026	SHERIN BANU H	Sherin	Sherin	Sherin	Sherin	Sherin	Sherin
24	912016104027	SULTHAN ALAVUDEEN J	Sulthan	Sulthan	Sulthan	Sulthan	Sulthan	Sulthan
25	912016104028	VANJINATHAN P	Vanjinathan	Vanjinathan	Vanjinathan	Vanjinathan	Vanjinathan	Vanjinathan
26	912016104029	VISHNUPRIYA V	Vishnu	Vishnu	Vishnu	Vishnu	Vishnu	Vishnu
27	912016104030	VISHWANATH PRATAP YADAV V	Vishwanath	Vishwanath	Vishwanath	Vishwanath	Vishwanath	Vishwanath
28	912016104031	YOGALAKSHMI M	Yogalakshmi	Yogalakshmi	Yogalakshmi	Yogalakshmi	Yogalakshmi	Yogalakshmi
29	912016104401	VIJAYA DHARSANA A	Vijaya	Vijaya	Vijaya	Vijaya	Vijaya	Vijaya
30	912016104301	NASHRIN FATHIMA A	Nashrin	Nashrin	Nashrin	Nashrin	Nashrin	Nashrin

Tea Break : FN- 11:00 am to 11:15am
AN-03:00 pm to 03:15 pm
Lunch Break : 12:15 pm to 01:00pm

COURSE COORDINATOR

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PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE, ARASANOOR-630561
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

STUDENT ATTENDANCE SHEET

Academic Year : 2019-2020

Course Code : VACCSE1920CDPA

Course Name : C++ Design Patterns in Action: Practical Application and Implementation

Duration of hours : 35

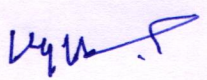
Period of Course : 04.11.19-09.11.19


Attendance Sheet			Date: 06/11/2019					
Sl. No	Register Number	Student Name	09.00 am - 10.00 am	10.00 am - 11.00 am	11.15 am - 12.15 pm	01.00 pm - 02.00 pm	02.00 pm - 03.00 pm	03.15 pm - 04.15 pm
1	912016104001	ARUL SELVI K	R.RA	K.A.S	K.A.S	K.A.S	K.A.S	K.A.S
2	912016104002	BALA MEENAKSHI R	R.BA	R.BA	R.BA	R.BA	R.BA	R.DH
3	912016104004	DHANALAKSHMI S	Ah S	Ah S	Ah S	Ah S	Ah S	Ah S
4	912016104005	JEYARANI P	Jeyaran	Jeyaran	Jeyaran	Jeyaran	Jeyaran	Jeyaran
5	912016104006	KAMU DEVI K	Ky	Ky	Ky	Ky	Ky	Ky
6	912016104007	KARTHIKEYAN T	T.Ky	T.Ky	T.Ky	T.Ky	T.Ky	T.Ky
7	912016104008	MARISELVI T	mariselvi	may	may	may	may	may
8	912016104009	MOHAMMED IBRAHIM G	M	M	M	M	M	M
9	912016104010	MOHANA N	monisha	monisha	monisha	monisha	monisha	monisha
10	912016104011	MONISHA M	Monish	Monish	Monish	Monish	Monish	Monish
11	912016104012	MUTHUMARI V	muthu	muthu	muthu	muthu	muthu	muthu
12	912016104014	PANDIMEENA V	P	P	P	P	P	P
13	912016104016	PRAVEEN K	Prof.	Prof.	Prof.	Prof.	Prof.	Prof.

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14	912016104017	PREETHAKUMARI N	Pruth	Pruth	Pruth	Pruth	Pruth	Pruth
15	912016104018	RAGAVI J	Ragv	Ragv	Ragv	Ragv	Ragv	Ragv
16	912016104019	RAJESHWARI A	Raj	Raj	Raj	Raj	Raj	Raj
17	912016104020	RAMYA R	Ram	Ram	Ram	Ram	Ram	Ram
18	912016104021	RASHEED AHAMED D	Rashed	Rashed	Rashed	Rashed	Rashed	Rashed
19	912016104022	RUKMANI S	Ru	Ru	Ru	Ru	Ru	Ru
20	912016104023	SANTHOSH KUMAR P	Santhosh	Santhosh	Santhosh	Santhosh	Santhosh	Santhosh
21	912016104024	SHANMUGA PRIYA B	SPf	SPf	SPf	SPf	SPf	SPf
22	912016104025	SHANMUGA PRIYA K	Sf	Sf	Sf	Sf	Sf	Sf
23	912016104026	SHERIN BANU H	SB.H	SB.H	SB.H	SB.H	SB.H	SB.H
24	912016104027	SULTHAN ALAVUDEEN J	Sul	Sul	Sul	Sul	Sul	Sul
25	912016104028	VANJINATHAN P	Van	Van	Van	Van	Van	Van
26	912016104029	VISHNUPRIYA V	Vish	Vish	Vish	Vish	Vish	Vish
27	912016104030	VISHWANATH PRATAP YADAV V	Vishwa	Vishwa	Vishwa	Vishwa	Vishwa	Vishwa
28	912016104031	YOGALAKSHMI M	yoga lakshmi	yoga lakshmi	yoga lakshmi	yoga lakshmi	yoga lakshmi	yoga lakshmi
29	912016104401	VIJAYA DHARSANA A	Vidharsana	Vidharsana	Vidharsana	Vidharsana	Vidharsana	Vidharsana
30	912016104301	NASHRIN FATHIMA A	fathima	fathima	fathima	fathima	fathima	fathima

Tea Break : FN- 11:00 am to 11:15am
AN-03:00 pm to 03:15 pm
Lunch Break : 12:15 pm to 01:00pm


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PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE, ARASANOOR-630561

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

STUDENT ATTENDANCE SHEET

Academic Year : 2019-2020

Course Code : VACCSE1920CDPA

Course Name : C++ Design Patterns in Action: Practical Application and Implementation

Duration of hours : 35

Period of Course : 04.11.19-09.11.19

Attendance Sheet			Date: 07/11/2019					
Sl. No	Register Number	Student Name	09.00 am - 10.00 am	10.00 am - 11.00 am	11.15 am - 12.15 pm	01.00 pm - 02.00 pm	02.00 pm - 03.00 pm	03.15 pm - 04.15 pm
1	912016104001	ARUL SELVI K	K.A.S	K.A.S	K.A.S	K.A.S	K.A.S	K.A.S
2	912016104002	BALA MEENAKSHI R	R.B.N	R.B.N	R.B.N	R.B.N	R.B.N	R.B.N
3	912016104004	DHANALAKSHMI S	Dh.S	Dh.S	Dh.S	Dh.S	Dh.S	Dh.S
4	912016104005	JEYARANI P	Jeyarani	Jeyarani	Jeyarani	Jeyarani	Jeyarani	Jeyarani
5	912016104006	KAMU DEVI K	Kf	Kf	Kf	Kf	Kf	Kf
6	912016104007	KARTHIKEYAN T	T.K	T.K	T.K	T.K	T.K	T.K
7	912016104008	MARISELVI T	may	may	may	may	may	may
8	912016104009	MOHAMMED IBRAHIM G	(M)	(M)	(M)	(M)	(M)	(M)
9	912016104010	MOHANA N	manish	manish	manish	manish	manish	manish
10	912016104011	MONISHA M	Manf	Manf	Manf	Manf	Manf	Manf
11	912016104012	MUTHUMARI V	mutt	mutt	mutt	mutt	mutt	mutt
12	912016104014	PANDIMEENA V	(P)	(P)	(P)	(P)	(P)	(P)
13	912016104016	PRAVEEN K	Pf	Pf	Pf	Pf	Pf	Pf

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14	912016104017	PREETHAKUMARI N	<i>Preetha</i>	<i>Preetha</i>	<i>Preetha</i>	<i>Preetha</i>	<i>Preetha</i>	<i>Preetha</i>
15	912016104018	RAGAVI J	<i>Ragavi</i>	<i>Ragavi</i>	<i>Ragavi</i>	<i>Ragavi</i>	<i>Ragavi</i>	<i>Ragavi</i>
16	912016104019	RAJESHWARI A	<i>Rajeshwari</i>	<i>Rajeshwari</i>	<i>Rajeshwari</i>	<i>Rajeshwari</i>	<i>Rajeshwari</i>	<i>Rajeshwari</i>
17	912016104020	RAMYA R	<i>Ramya</i>	<i>Ramya</i>	<i>Ramya</i>	<i>Ramya</i>	<i>Ramya</i>	<i>Ramya</i>
18	912016104021	RASHEED AHAMED D	<i>Rasheed</i>	<i>Rasheed</i>	<i>Rasheed</i>	<i>Rasheed</i>	<i>Rasheed</i>	<i>Rasheed</i>
19	912016104022	RUKMANI S	<i>Rukmani</i>	<i>Rukmani</i>	<i>Rukmani</i>	<i>Rukmani</i>	<i>Rukmani</i>	<i>Rukmani</i>
20	912016104023	SANTHOSH KUMAR P	<i>Santhosh</i>	<i>Santhosh</i>	<i>Santhosh</i>	<i>Santhosh</i>	<i>Santhosh</i>	<i>Santhosh</i>
21	912016104024	SHANMUGA PRIYA B	<i>Shanmuga</i>	<i>Shanmuga</i>	<i>Shanmuga</i>	<i>Shanmuga</i>	<i>Shanmuga</i>	<i>Shanmuga</i>
22	912016104025	SHANMUGA PRIYA K	<i>Shanmuga</i>	<i>Shanmuga</i>	<i>Shanmuga</i>	<i>Shanmuga</i>	<i>Shanmuga</i>	<i>Shanmuga</i>
23	912016104026	SHERIN BANU H	<i>Sherin</i>	<i>Sherin</i>	<i>Sherin</i>	<i>Sherin</i>	<i>Sherin</i>	<i>Sherin</i>
24	912016104027	SULTHAN ALAVUDEEN J	<i>Sultan</i>	<i>Sultan</i>	<i>Sultan</i>	<i>Sultan</i>	<i>Sultan</i>	<i>Sultan</i>
25	912016104028	VANJINATHAN P	<i>Vanjinathan</i>	<i>Vanjinathan</i>	<i>Vanjinathan</i>	<i>Vanjinathan</i>	<i>Vanjinathan</i>	<i>Vanjinathan</i>
26	912016104029	VISHNUPRIYA V	<i>Vishnu</i>	<i>Vishnu</i>	<i>Vishnu</i>	<i>Vishnu</i>	<i>Vishnu</i>	<i>Vishnu</i>
27	912016104030	VISHWANATH PRATAP YADAV V	<i>Vishwanath</i>	<i>Vishwanath</i>	<i>Vishwanath</i>	<i>Vishwanath</i>	<i>Vishwanath</i>	<i>Vishwanath</i>
28	912016104031	YOGALAKSHMI M	<i>Yogalakshmi</i>	<i>Yogalakshmi</i>	<i>Yogalakshmi</i>	<i>Yogalakshmi</i>	<i>Yogalakshmi</i>	<i>Yogalakshmi</i>
29	912016104401	VIJAYA DHARSANA A	<i>Vijaya</i>	<i>Vijaya</i>	<i>Vijaya</i>	<i>Vijaya</i>	<i>Vijaya</i>	<i>Vijaya</i>
30	912016104301	NASHRIN FATHIMA A	<i>Nashrin</i>	<i>Nashrin</i>	<i>Nashrin</i>	<i>Nashrin</i>	<i>Nashrin</i>	<i>Nashrin</i>

Tea Break : FN- 11:00 am to 11:15am
AN-03:00 pm to 03:15 pm
Lunch Break : 12:15 pm to 01:00pm

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PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE, ARASANOOR-630561
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

STUDENT ATTENDANCE SHEET

Academic Year : 2019-2020

Course Code : VACCSE1920CDPA

Course Name : C++ Design Patterns in Action: Practical Application and Implementation

Duration of hours : 35

Period of Course : 04.11.19-09.11.19

Attendance Sheet			Date: 08/11/2019					
Sl. No	Register Number	Student Name	09.00 am - 10.00 am	10.00 am - 11.00 am	11.15 am - 12.15 pm	01.00 pm - 02.00 pm	02.00 pm - 03.00 pm	03.15 pm - 04.15 pm
1	912016104001	ARUL SELVI K	R.S.K	R.S.K	R.S.K	R.S.K	R.S.K	R.S.K
2	912016104002	BALA MEENAKSHI R	R.M	R.M	R.M	R.M	R.M	R.M
3	912016104004	DHANALAKSHMI S	Dhs	Dhs	Dhs	Dhs	Dhs	Dhs
4	912016104005	JEYARANI P	Jeyarani	Jeyarani	Jeyarani	Jeyarani	Jeyarani	Jeyarani
5	912016104006	KAMU DEVI K	Kd	Kd	Kd	Kd	Kd	Kd
6	912016104007	KARTHIKEYAN T	T.K	T.K	T.K	T.K	T.K	T.K
7	912016104008	MARISELVI T	my	my	my	my	my	my
8	912016104009	MOHAMMED IBRAHIM G	@	@	@	@	@	@
9	912016104010	MOHANA N	Moh	Moh	Moh	Moh	Moh	Moh
10	912016104011	MONISHA M	Monisha	Monisha	Monisha	Monisha	Monisha	Monisha
11	912016104012	MUTHUMARI V	Muth	Muth	Muth	Muth	Muth	Muth
12	912016104014	PANDIMEENA V	P	P	P	P	P	P
13	912016104016	PRAVEEN K	Prof.	Prof.	Prof.	Prof.	Prof.	Prof.

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14	912016104017	PREETHAKUMARI N	<i>Pk</i>	<i>Pk</i>	<i>Pk</i>	<i>Pk</i>	<i>Pk</i>	<i>Pk</i>
15	912016104018	RAGAVI J	<i>Rvg</i>	<i>Rvg</i>	<i>Rvg</i>	<i>Rvg</i>	<i>Rvg</i>	<i>Rvg</i>
16	912016104019	RAJESHWARI A	<i>Raj</i>	<i>Raj</i>	<i>Raj</i>	<i>Raj</i>	<i>Raj</i>	<i>Raj</i>
17	912016104020	RAMYA R	<i>Ryg</i>	<i>Ryg</i>	<i>Ryg</i>	<i>Ryg</i>	<i>Ryg</i>	<i>Ryg</i>
18	912016104021	RASHEED AHAMED D	<i>Rashad</i>	<i>Rashad</i>	<i>Rashad</i>	<i>Rashad</i>	<i>Rashad</i>	<i>Rashad</i>
19	912016104022	RUKMANI S	<i>Rj</i>	<i>Rj</i>	<i>Rj</i>	<i>Rj</i>	<i>Rj</i>	<i>Rj</i>
20	912016104023	SANTHOSH KUMAR P	<i>Santhosh</i>	<i>Santhosh</i>	<i>Santhosh</i>	<i>Santhosh</i>	<i>Santhosh</i>	<i>Santhosh</i>
21	912016104024	SHANMUGA PRIYA B	<i>SPf</i>	<i>SPf</i>	<i>SPf</i>	<i>SPf</i>	<i>SPf</i>	<i>SPf</i>
22	912016104025	SHANMUGA PRIYA K	<i>Sf</i>	<i>Sf</i>	<i>Sf</i>	<i>Sf</i>	<i>Sf</i>	<i>Sf</i>
23	912016104026	SHERIN BANU H	<i>SB.W</i>	<i>SB.W</i>	<i>SB.W</i>	<i>SB.W</i>	<i>SB.W</i>	<i>SB.W</i>
24	912016104027	SULTHAN ALAVUDEEN J	<i>St</i>	<i>St</i>	<i>St</i>	<i>St</i>	<i>St</i>	<i>St</i>
25	912016104028	VANJINATHAN P	<i>Vj</i>	<i>Vj</i>	<i>Vj</i>	<i>Vj</i>	<i>Vj</i>	<i>Vj</i>
26	912016104029	VISHNUPRIYA V	<i>Vsh</i>	<i>Vsh</i>	<i>Vsh</i>	<i>Vsh</i>	<i>Vsh</i>	<i>Vsh</i>
27	912016104030	VISHWANATH PRATAP YADAV V	<i>Vishwa</i>	<i>Vishwa</i>	<i>Vishwa</i>	<i>Vishwa</i>	<i>Vishwa</i>	<i>Vishwa</i>
28	912016104031	YOGALAKSHMI M	<i>Yoga Lakshmi</i>	<i>Yoga Lakshmi</i>	<i>Yoga Lakshmi</i>	<i>Yoga Lakshmi</i>	<i>Yoga Lakshmi</i>	<i>Yoga Lakshmi</i>
29	912016104401	VIJAYA DHARSANA A	<i>Vidharsana</i>	<i>Vidharsana</i>	<i>Vidharsana</i>	<i>Vidharsana</i>	<i>Vidharsana</i>	<i>Vidharsana</i>
30	912016104301	NASHRIN FATHIMA A	<i>Fathim</i>	<i>Fathim</i>	<i>Fathim</i>	<i>Fathim</i>	<i>Fathim</i>	<i>Fathim</i>

Tea Break : FN- 11:00 am to 11:15am
AN-03:00 pm to 03:15 pm
Lunch Break : 12:15 pm to 01:00pm

Ayush T
COURSE COORDINATOR

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PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE, ARASANOOR-630561

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

STUDENT ATTENDANCE SHEET

Academic Year : 2019-2020

Course Code : VACCSE1920CDPA

Course Name : C++ Design Patterns in Action: Practical Application and Implementation

Duration of hours : 35

Period of Course : 04.11.19-09.11.19

Attendance Sheet			Date: 09/11/2019					
Sl. No	Register Number	Student Name	09.00 am - 10.00 am	10.00 am - 11.00 am	11.15 am - 12.15 pm	01.00 pm - 02.00 pm	02.00 pm - 03.00 pm	03.15 pm - 04.15 pm
1	912016104001	ARUL SELVI K	K. Arul	K. Arul	K. Arul	K. Arul	K. Arul	K. Arul
2	912016104002	BALA MEENAKSHI R	R. Meena	R. Meena	R. Meena	R. Meena	R. Meena	R. Meena
3	912016104004	DHANALAKSHMI S	Ah S	Ah S	Ah S	Ah S	Ah S	Ah S
4	912016104005	JEYARANI P	Jeyarani	Jeyarani	Jeyarani	Jeyarani	Jeyarani	Jeyarani
5	912016104006	KAMU DEVI K	Kamu Devi	Kamu Devi	Kamu Devi	Kamu Devi	Kamu Devi	Kamu Devi
6	912016104007	KARTHIKEYAN T	T. Karthi	T. Karthi	T. Karthi	T. Karthi	T. Karthi	T. Karthi
7	912016104008	MARISELVI T	my	my	my	my	my	my
8	912016104009	MOHAMMED IBRAHIM G	@	@	@	@	@	@
9	912016104010	MOHANA N	Mohana	Mohana	Mohana	Mohana	Mohana	Mohana
10	912016104011	MONISHA M	Monisha	Monisha	Monisha	Monisha	Monisha	Monisha
11	912016104012	MUTHUMARI V	Muthu	Muthu	Muthu	Muthu	Muthu	Muthu
12	912016104014	PANDIMEENA V	Pandimeena	Pandimeena	Pandimeena	Pandimeena	Pandimeena	Pandimeena
13	912016104016	PRAVEEN K	Praveen	Praveen	Praveen	Praveen	Praveen	Praveen

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14	912016104017	PREETHAKUMARI N	P	P	P	P	P	P
15	912016104018	RAGAVI J	R	R	R	R	R	R
16	912016104019	RAJESHWARI A	R	R	R	R	R	R
17	912016104020	RAMYA R	R	R	R	R	R	R
18	912016104021	RASHEED AHAMED D	R	R	R	R	R	R
19	912016104022	RUKMANI S	R	R	R	R	R	R
20	912016104023	SANTHOSH KUMAR P	S	S	S	S	S	S
21	912016104024	SHANMUGA PRIYA B	SP	SP	SP	SP	SP	SP
22	912016104025	SHANMUGA PRIYA K	SP	SP	SP	SP	SP	SP
23	912016104026	SHERIN BANU H	SB	SB	SB	SB	SB	SB
24	912016104027	SULTHAN ALAVUDEEN J	S	S	S	S	S	S
25	912016104028	VANJINATHAN P	V	V	V	V	V	V
26	912016104029	VISHNUPRIYA V	V	V	V	V	V	V
27	912016104030	VISHWANATH PRATAP YADAV V	V	V	V	V	V	V
28	912016104031	YOGALAKSHMI M	Y	Y	Y	Y	Y	Y
29	912016104401	VIJAYA DHARSANA A	V	V	V	V	V	V
30	912016104301	NASHRIN FATHIMA A	F	F	F	F	F	F

Tea Break : FN- 11:00 am to 11:15am
AN-03:00 pm to 03:15 pm
Lunch Break : 12:15 pm to 01:00pm

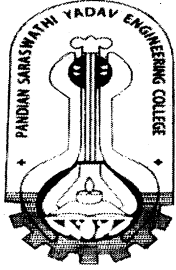
COURSE COORDINATOR

HOD/CSE

PRINCIPAL

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CERTIFICATES



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Value added course on
C++ DESIGN PATTERNS IN ACTION:
PRACTICAL APPLICATION AND IMPLEMENTATION
Organized by
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING


CERTIFICATE

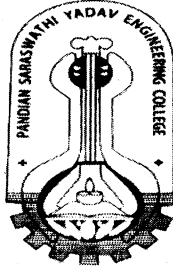
This is to Certify that Mr/Ms...*S.HANMULA..PRIYA..K.*.....From IY./VII SEM.....
has actively participated in the value-added course on **C++ Design Patterns In Action:**
Practical Application And Implementation organized by the Department of Computer
Science and Engineering From 04.11.2019 – 09.11.2019 (35 Hours) at Pandian Saraswathi
Yadav Engineering College, Sivagangai.


Dr.A.Askarunisa.,
HOD/CSE

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Dr.R.Raja
Principal



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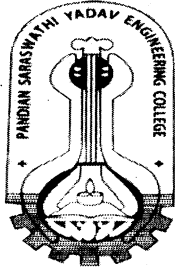
has actively participated in the value-added course on **C++ Design Patterns In Action: Practical Application And Implementation** organized by the Department of Computer Science and Engineering From 04.11.2019 – 09.11.2019 (35 Hours) at Pandian Saraswathi Yadav Engineering College, Sivagangai.


Dr. A. Askarunisa.,
HOD/CSE

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Dr. R. Raja
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This is to Certify that Mr/Ms.....VISHNUPRIYA.V.....From IV/VII SEM.....
has actively participated in the value-added course on **C++ Design Patterns In Action:
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Dr.A.Askarunisa.,
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Dr.R.Raja
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