

MANNAM MEMORIAL NSS COLLEGE, KOTTIYAM

STUDENT ENROLMENT LIST

Name of department : Physics

Name of course : CPP (2019-2020) Exploring Visual Representation in Visual Graphics.

Sl No	Name of Student	Signature
1	ABHIJITH P	
2	AMULYA R S	Amulya
3	ANANDHU V S	Anandhu
4	ANJALI DEVI S J	Anjali
5	ANOO P R	Anoop
6	ANUPAMA R S	Anupama
7	ARCHA S ANIL	Archa
8	CHITHRA V S	Chithra
9	GI R MEGHA	Gi R Megha
10	GOKUL PRADEEP	Gokul
11	GIOURI T S	T. S. Gouri
12	LEKSHMI B	Lekshmi
13	MEGHA M	Megha
14	PRASIDH P S	Prasidh
15	REVATHY R	Revathy
16	SARAN RAJ R G	Saran Raj
17	SONA VASANTHAN	Sona
18	SYAM G CHANDRAN	Syam
19	VAISHNAV V B	Vaishnav
20	VARSHA RAJAN	Varsha
21	AARSHA UNNITHAN R J	Aarsha
22	AASHIK SAFAR	Aashik
23	ABHISHEK S	Abhishek
24	ADARSH J	Adarsh
25	AKASH A	Akash
26	ALSHIFA U	Alshifa
27	AMAL LALL	Amal
28	AMAL PRASAD	Amal
29	AMAL R	Amal
30	AMRITHA MANIKANDAN	Amritha
31	ANUPAMA G	Anupama
32	ANUSHMA MOHAN	Anushma
33	ATHIRA R NAIR	Athira
34	DEVIKA S KUMAR	Devika

35	FATHIMA FIRUS	Fathima
36	GANGA M J	Ganga
37	MAHESWARI S NAGASREE	Ms
38	NIKHIL M S	Nikhil
39	RINCY UBAID	Rincy
40	ROHINI S	Rohini
41	SREEBHADRA H R	Sreebhadra
42	SREELEKSHMI S P	Sreelekshmi
43	VEENA S KURUP	Veena
44	VISHNU BIJU	Vishnu
45	RITHU CHANDRAN	Rithu
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Advanced Computational Physics - Exploring Visual Representations in C++ graphics.

Curriculum

Introduction to graphics programming
Basics concept of graphic libraries (OpenGL or DirectX), 2D and 3D graphics rendering techniques.
Co-ordinate system, transformations, handling user i/p for interactive graphics; Images & textures
Basic animation principles. Shaders and lighting effects - Sample programs.

Objectives

On successful completion of this course students are expected to.

- get an indepth knowledge about the C++ graphics programming.
- Students can apply the learned concepts in real world scenarios to strengthen coding skills and understanding of graphics programming in C++.
- * Become proficient in developing graphical applications using C++.

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Course Schedule

2/9/19	3.30pm - 4.30pm	Introduction to graphics programming
4/9/19	3.30pm - 4.30pm	Basic concepts of graphic libraries.
21/9/19	10 am - 4 PM	2D and 3D graphics
23/9/19	3.30pm - 4.30pm	Rendering techniques
25/9/19	3.30pm - 4.30pm	Co-ordinate systems
26/9/19	3.30pm - 4.30pm	Transformations
28/9/19	10 am - 1 PM	Lab work.
3/10/19	3.30pm - 4.30pm	User c/p for interactive graphics
4/10/19	3.30pm - 4.30pm	Images and textures.
5/10/19	10 am - 3.30pm	Lab work.
15/10/19	3.30pm - 4.30pm	Basic animation Principles
17/10/19	3.30pm - 4.30pm	Shades & lighting effect
20/10/19	9 am - 3 pm	Labwork
22/10/19	3.30pm - 4.30pm	Labwork.
23/10/19	9 am - 10 am & 3.30pm - 4.30pm	"
30/10/19	3.30pm - 4.30pm	End course Evaluation.

Girija Narayana
(HOD)

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Exploring Visual Representations in C++ graphics

Add On-Course 2019-20, PG Department of Physics

MM NSS College, Kottiyam

Total Marks: 50

Duration: 2 Hours

Section A: 1-Mark Questions

Answer all questions. Each question carries 1 mark.

1. Which library is commonly used for graphics programming in C++ on Windows platforms?
2. What function initializes the graphics mode in the graphics library used in C++?
3. In the context of graphics programming in C++, what does the `setcolor()` function do?
4. What is the purpose of the `cleardevice()` function in C++ graphics programming?
5. Name the function used to draw a line in the graphics library for C++.

Section B: 2-Mark Questions

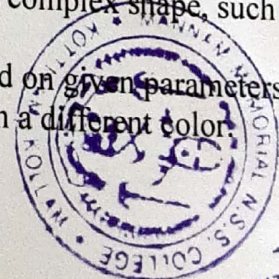
Answer all questions. Each question carries 2 marks.

6. Explain the purpose of the `initgraph()` function in C++ graphics programming. Include an example of its usage.
7. Describe how you would draw a rectangle using the graphics library in C++. Provide a simple code snippet.
8. What is the difference between `floodfill()` and `bar()` functions in C++ graphics? Provide a brief explanation.
9. How do you set the color of text in C++ graphics? Include a code snippet to demonstrate this.
10. What does the `delay()` function do in a graphics program, and why might it be used?

Section C: 15-Mark Questions

Answer all questions. Each question carries 15 marks.

11. **Drawing Basic Shapes:**
 - a. Write a C++ program using the graphics library to draw a circle with a radius of 50 pixels at position (100, 100).
 - b. Extend the program to draw a rectangle with dimensions 80x40 pixels at position (150, 150).
 - c. Include code to fill the circle and rectangle with different colors.
12. **Animating a Moving Object:**
 - a. Write a C++ program to create an animation of a moving ball. The ball should move horizontally across the screen.
 - b. Implement the ball's movement using a loop, and use the `delay()` function to control the speed of the animation.
 - c. Ensure that the ball bounces back when it reaches the edge of the screen.
13. **Interactive Graphics:**
 - a. Create a C++ program where the user can click to draw a rectangle on the screen. Each click should place a rectangle at the clicked location.
 - b. Implement mouse event handling to capture the position of the mouse click.
 - c. Ensure that each rectangle drawn has a different color.
14. **Complex Shape Drawing:**
 - a. Write a C++ program to draw a complex shape, such as a star or a hexagon, using the graphics library.
 - b. Define a function to calculate the vertices of the shape based on given parameters.
 - c. Include code to fill the shape with a color and outline it with a different color.



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MANNAM MEMORIAL NSS COLLEGE, KOTTIYAM
END COURSE EVALUATION

Name of department : PHYSICS

Name of course : CPP- Exploring Visual Representation in CPP Graphics (2019-20)

Duration of exam : 2 hours

Total Marks : 50

Sl No	Name of Student	Marks Obtained
1	ABHIJITH P.	25
2	AMULYA R.S	27
3	ANANIDHU V.S	36
4	ANJALI DEVI .S J	42
5	ANBOP. R	28
6	ANUPAMA . R.S	27
7	ARCHA. S. ANIL	43
8	CHITHRA V.S	41
9	G.R. MEGHA	48
10	GOKUL PRADEEP	39
11	GOURI T.S	47
12	LEKSHMI B	42
13	MEGHA M	33
14	PRASIDH P.S	37
15	REVATHY R	39
16	SARAN RAJ R.G	41
17	SONA VASANTHAN	43
18	SYAM. G. CHANDRAN	25
19	VAISITHNAV. V.B	29
20	VARSHA RAJAN	46
21	AARSHA UNNITHAN. R.J	42
22	AASHIK SAEFAR.	49

23	ABHISHEK . S	32
24	ADERSH . J	38
25	AKASH A	34
26	ALSHIFA . U	41
27	AMAL LAL L	38
28	AMAL PRASAD	34
29	AMAL . R	43
30	AMRITHA MANIKANDAN	25
31	ANUPAMA . G	26
32	ANUSHMA MOHAN	43
33	ATHIRA . R . NAIR	42
34	DEVIKA S . KUMAR	41
35	FATHIMA FIRUS	39
36	GANIGA M . J	45
37	MAHESWARI S . NAGASREE	25
38	NIKHIL M . S	29
39	RINCY UBAID	38
40	ROHINI S	40
41	SREE BHADRA . H . R	41
42	SREE LEKSHMI . S . P	43
43	VEENA . S . KURUP	34
44	VISHNU BIJU	38
45	RITHU CHANDRAN	29.
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Number of students enrolled: 45

Number of students completed: 45



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C++: VISUAL REPRESENTATIONS IN C++ GRAPHICS

Report

The course on c++ graphics was conducted successfully by the Department of Physics, covering a wide range of topics related to graphics programming in C++. Students were introduced to the basis of computer graphics including 2D & 3D. The course focused on practical implementations, using C++ libraries OpenGL or DirectX. Students learned how to create various shapes work with color, apply transformations and handle user clicks to develop interactive visual applications. Assignments and projects were designed to provide hands-on experience and deepen understanding. The course aimed to equip the students with the fundamental skills necessary to pursue further studies or careers in graphic programming using C++. The students were benefitted by the course.

Feed Back Analysis

The students showed a positive response. The hands-on assignments and projects were particularly praised for enhancing understanding and providing valuable experience in implementing graphics algorithms. A few participants highlighted the need for clearer explanations in certain complex areas. The course effectively meets its objectives of introducing students to C++ graphics programming and equipping them with foundational skills in this domain.



Anushe. M-A

Course Co-ordinator.

Principal
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