
KLiC
MKCL
Courses
Gateway to Knowledge Lit Careers

Contents

1. JOB READINESS TRACK 3

1.1 KLiC IT 3
1.2 KLiC English 5

2. DESIGNING TRACK 9

2.1 KLiC Content Illustration 9
2.2 KLiC DTP (Adobe) 11
2.3 KLiC DTP (CorelDraw) 16
2.4 KLiC Web Designing 19
2.5 KLiC Video Editing 22
2.6 KLiC Graphic Designing 23
2.7 KLiC Photo Editing 27

3. ACCOUNTING TRACK 28

3.1 KLiC Tally (with GST) 28
3.2 KLiC Advanced Tally 30
3.3 KLiC Advanced Excel 32

4. PROGRAMMING TRACK 34

4.1 KLiC SCRATCH Programming 34
4.2 KLiC C Programming 36
4.3 KLiC C++ Programming 39

5. HARDWARE AND NETWORKING TRACK 40

5.1 KLiC Hardware Support 40
5.2 KLiC Network Support 41
5.3 KLiC Security Support 42
5.4 KLiC Desktop Support 43

6. DIGITAL ARTS TRACK 44

6.1 KLiC AutoCAD 44
6.2 KLiC 3D Modeling 46
6.3 KLiC 3D Texturing 48
6.4 KLiC 3D Rigging 50
6.5 KLiC 3D Animation 54

Syllabus of KLiC Courses

1. Job Readiness Track

1.1 KLiC IT

KLiC IT

Skills: Basic IT Awareness, Smart Typing Skills, Scripting Skills , Ergonomics & Go Green, 21st Century Office Skills, 21st Century Daily Life Skills, 21st Century Study Skills, 21st Century Citizenship Skills, Netiquettes & Cyber Security Skills

Outcome: Knowledge of applying various IT concepts, Typing practice in English-Hindi-Marathi, Knowledge of various novice-friendly programming languages, Using computers in a healthy and eco-friendly manner, Greeting Card, Visiting Card, Profile (Resume), Registration Form, Project Report, Invitation Letter, Letterhead, Newsletter, Agenda, Timesheet, Appointment Calendar, Greeting Card, Gift Voucher, Training Presentation, Business Presentation, Photo Album, Personal Portfolio, Magazine Cover, Uses of apps and websites specific to daily life using mobile, Knowledge of Digital Skills necessary for every citizen, Learning etiquettes for decent behaviour in the cyber world and best practices for maintaining safety and security

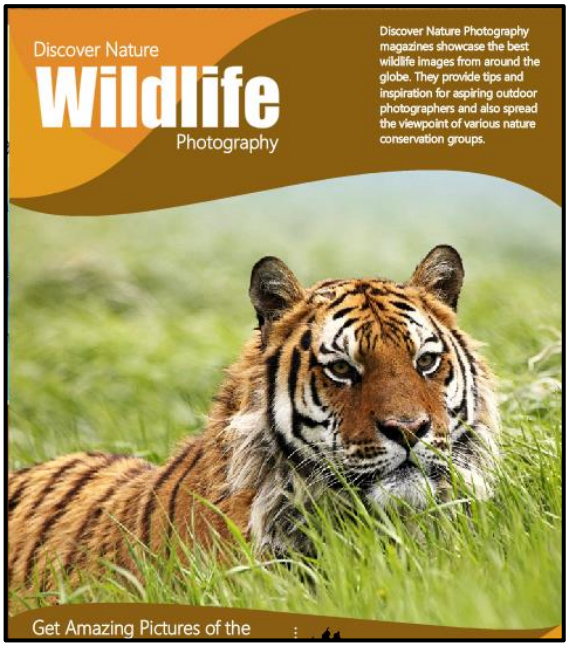


Figure 1: Magazine Cover



Figure 2: Greeting Card

1.2 KLiC English
(KLiC English)

KLiC English

Skills:

Syllabus covers Basic proficiency in:

1. Listening
2. Speaking
3. Conversing
4. Reading
5. Writing
6. Grammar for correct sentence formation

Language Skills:

Context Topics:

1. Home
2. Surroundings and Routine
3. Food
4. Greetings- Routine
5. Requests
6. Health/Healthy Habits
7. Dressing/clothing
8. Farms/Farmers
9. Garden, Occupations
10. Animals –Birds
11. Travelling/Transportations
12. Directions and addresses
13. Family/Relatives/Neighbors
14. Personal information
15. Games and sports
16. Friends,
17. Describing people/places
18. Hobbies,
19. Science/Technology
20. Safety
21. Dreams
22. Future plans/Savings
23. Numbers/Prices
24. Computers
25. Workplace ethics Education/Schoo
26. Work and jobs
27. Competitions
28. Public services: Bank
29. Post office etc.
30. City /Village life
31. Holidays/Picnics
32. Shops/Market places
33. Seasonal
34. Family traditions/Festivals
35. Nationalities/Countries
36. Natural disasters
37. Meetings/Presentations
38. Environment
39. Telling time
40. Weather/Seasons
41. Television/Films
42. Social media
43. Remembering past
44. Current Affairs
45. Soldiers/Army
46. Office/workplace
47. Religions & Faith
48. Government
49. Accommodation
50. Parenting
51. Giving gifts
52. Civic sense - Cleanliness etc.
53. Memories
54. Guests
55. Adventure
56. Books-literature
57. Look to the future
58. Emergencies
59. The Internet
60. Generations & Generation gap

KLiC English



Grammar: Pronouns, Auxiliary and Action verbs, Punctuation, Conjugations, Participles, Prepositions, Questions, Articles, Verbs and Nouns, Present, Past and Future Tenses, Modal Verbs, Adjectives and Adverbs, Direct and Indirect Speech, Interrogative Sentences, Active and Passive Voice,

Soft Skills:

Psychology of success, Being Sensitive, Self-Awareness and Self-Acceptance, Self-Management, Time Management, Smart Goal Setting, Decision Making, Being Flexible, Interpersonal Relationships, Collaboration and Cooperation, Positive Health, Ethics and Values, Problem Solving, Emotional Intelligence Quotient, Art Appreciation

Communication Skills: Effective Communication, Listening, Non-Verbal Communication, Interpersonal Communication, Presentations, Interviews, Technology Mediated Communication, Communication within a Group, Email Communication, Written Communication, Social Skills, Public Speaking\, Customer Relationship Management, Visual Communication, Mass Communication

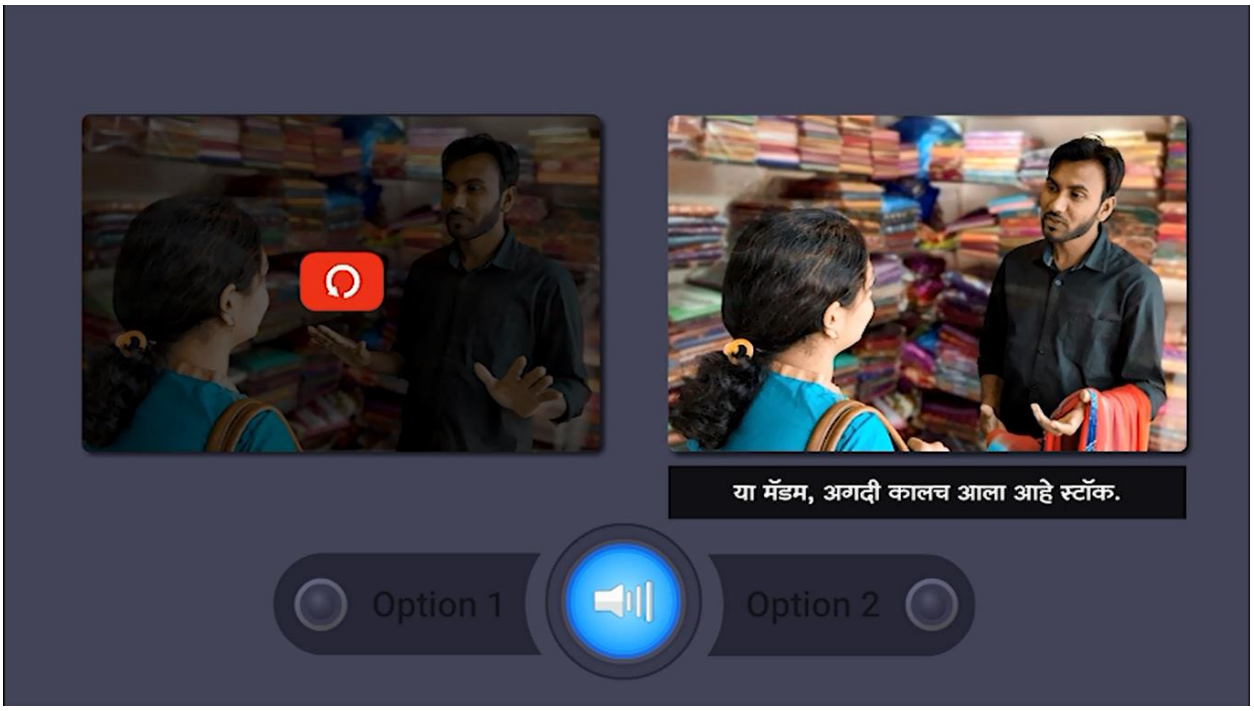


Figure 3: Communication Skills

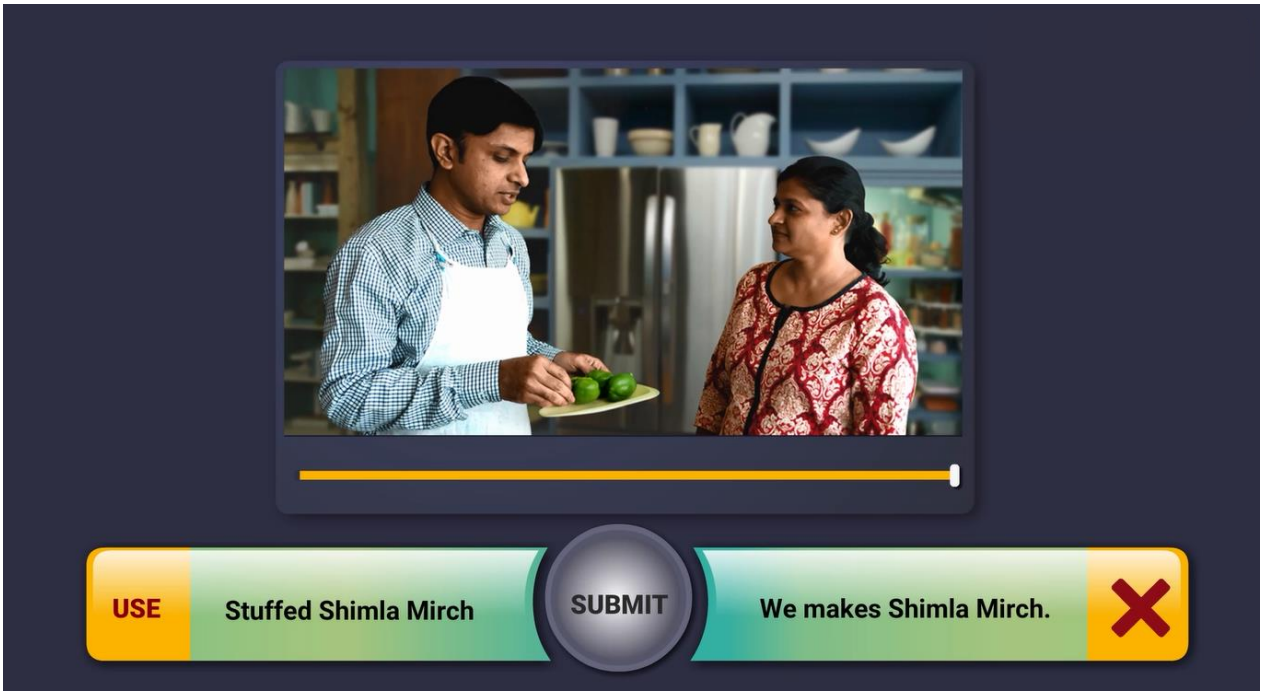


Figure 4: Grammar

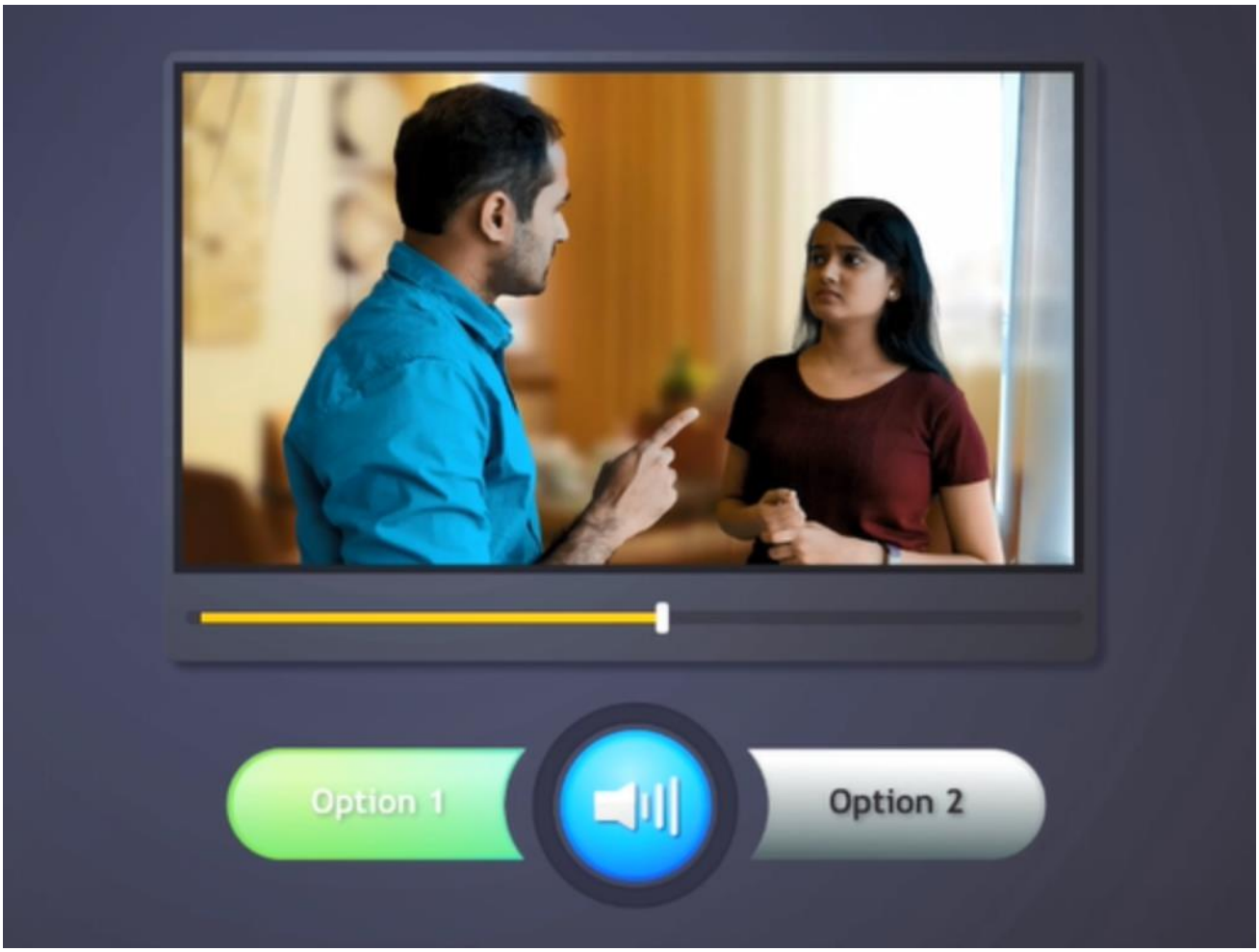


Figure 5: Soft Skills

2. Designing Track

2.1 KLiC Content Illustration

(KLiC Certificate in Content Illustration)

Adobe Illustrator

Skills: The Working Place, Customizing, Tools, Layer And Layer Options, Pen, Pencils and Paths, Using the Brush and Paint, Specialized Tools, Getting Creative with Types, Using the Symbols, Designing Graphics, Effects and Filters, Playing With Palettes Select, View and Object, Automating, Exporting, Web and Devices

Outputs: Business Card, Labels, Letterhead, Coupon, Identity Card, Jewel Case Design, Book Mark, Sticker, Envelope, Magazine Advertisement



Figure 6: Magazine Advertisement



Figure 7: Letterhead

2.2 KLiC DTP (Adobe)

(KLiC Certificate in Desktop Publishing (Adobe))

Adobe Photoshop

Skills: The Working Place, Customizing , Image and Color Modifications, Tools, Using the Brush and Paint, Working with Selections, Scaling, Knowing the Layers , Getting Creative with Types, Masks, Filter Gallery , Playing with Palettes

Outputs: Book Cover, Book Inner Layout, Magazine Cover, Magazine Inner Layout, Brochure, Flyer, Poster, Visiting Card, Wedding Card, Coupon

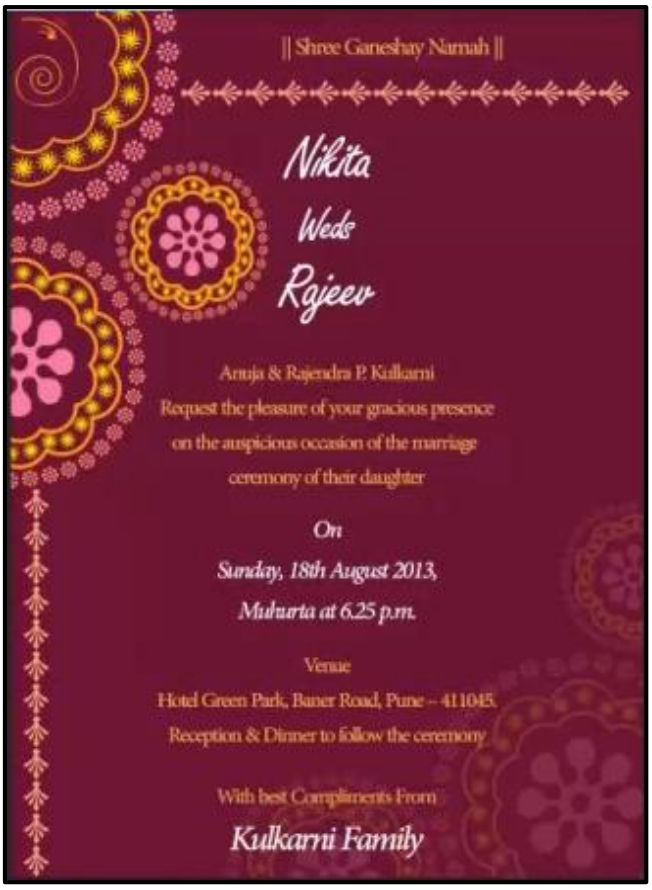


Figure 8: Wedding Card

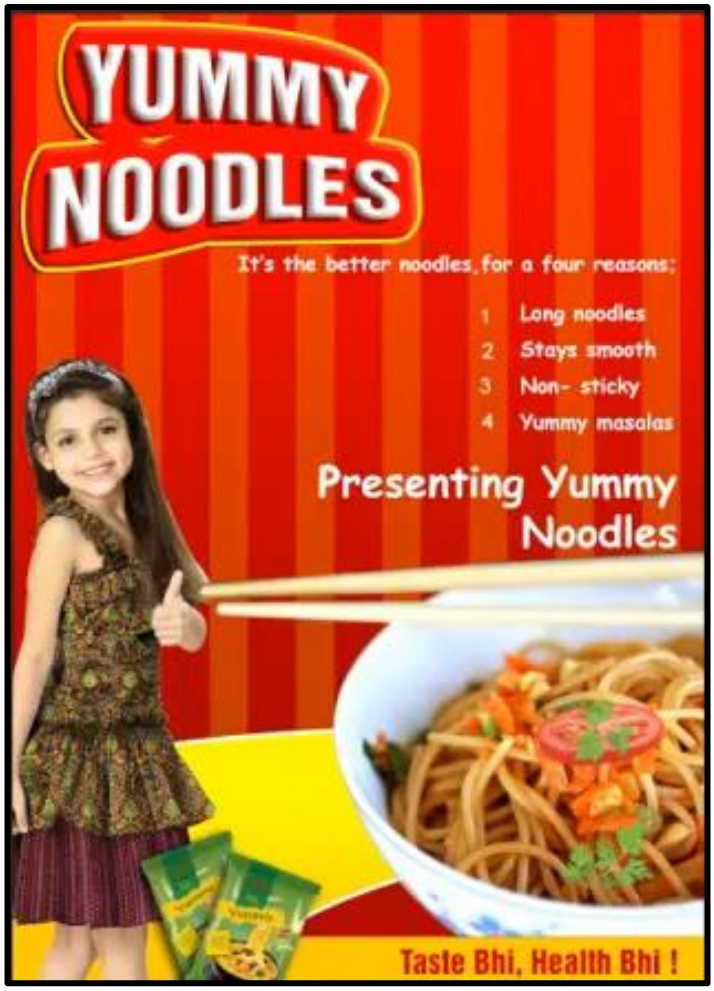


Figure 9: Poster Design

Adobe Illustrator

Skills: Working Place, Customizing, Tools, Layer and layer options, Pen, Pencils and Paths, Using the Brush and Paint, Specialized Tools, Getting Creative with Types, Using the Symbols, Designing Graphics, Effects and Filters, Playing with Palettes

Outputs: Gift Voucher, Recipe Book, News Paper Article, News Paper Advertisement, Preschool and primary Work book



Figure 10: Business Card



Figure 11: Coupon

Adobe InDesign

Skills: Creating and Viewing a Document, Managing Pages and Books, Managing Text , Formatting , Working with Objects, Working with Points and Paths, Case Study- Book Cover, Applying and Managing Colors, Working with Tables, Working with Styles, Printing and Outputting a Document, Setting Preferences

Outputs: Story books, Wall Calendar, Newsletter, Maps, Menu Card, Magazine Cover Page



Figure 12: Menu Card



Figure 13: Magazine Cover Page

2.3 KLiC DTP (CorelDraw)

(KLiC Certificate in Desktop Publishing (CorelDraw))

Adobe Photoshop

Skills: The Working Place, Customizing, Image and Color Modifications, Case Study - Black & White to Color, Using the Brush and Paint, Working with Selections, Scaling, Knowing the Layers, Filter Gallery, Color Adjustments

Outputs: Photo Manipulation, Photo Collage, Poster Design, Wedding Card

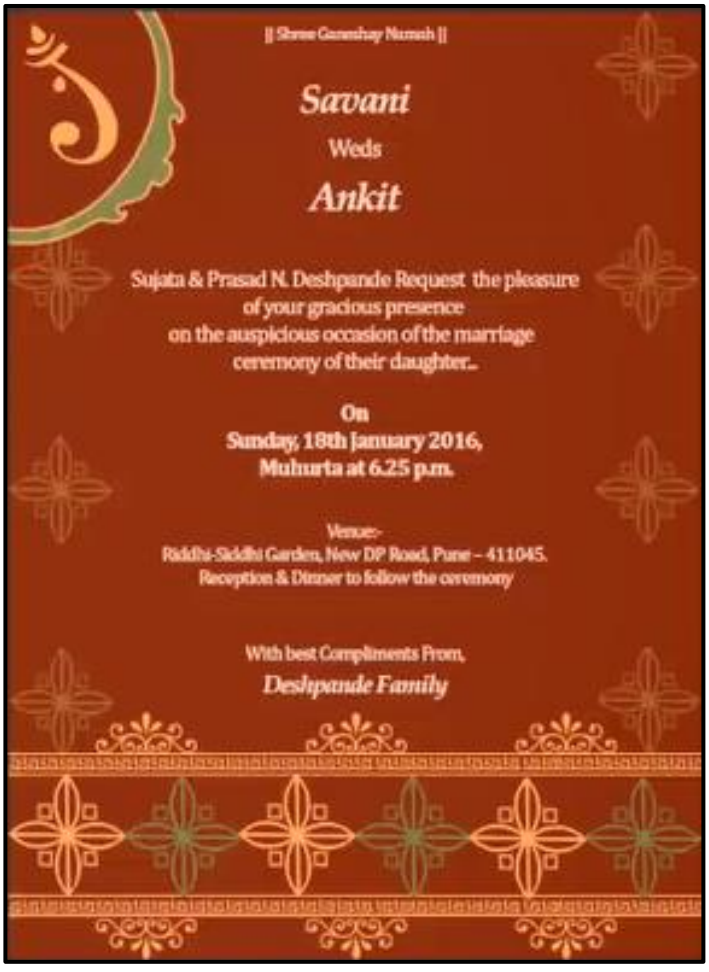


Figure 14: Wedding Card



Figure 15: Poster

CorelDraw

Skills: Understanding the Color Palette, Working with the Objects, Understanding other controls (Layers and Tables)

Outputs: Visiting Card, Sticker, Letterhead with Logo, Wedding Card, Flex Banner, Flyer with Coupon, Brochure

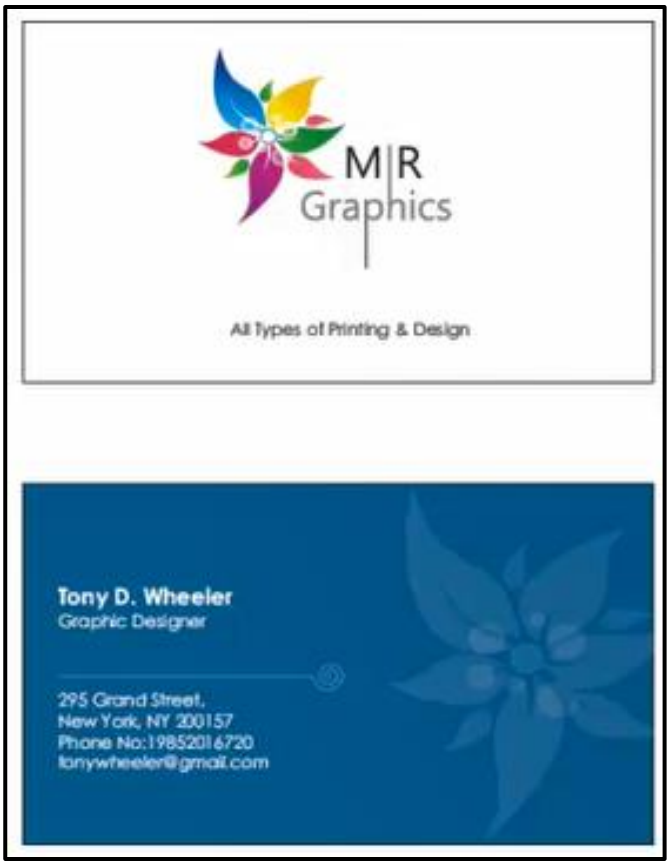


Figure 16: Visiting Card



Figure 17: Flex Banner

2.4 KLiC Web Designing

(KLiC Certificate in Web Designing)

Adobe Photoshop

Skills: Working Place, Customizing, Image and Color Modifications, Case Study - Black & White to Color, Using the Brush and Paint, Working with Selections, Scaling, Knowing the Layers, Filter Gallery, Color Adjustments

Outputs: Web Layout Design, Web Banner, Advertisement, UI Design



Figure 18: Web Layout Design

Adobe Dreamweaver

Skills: Fundamentals of Website Layout, Basics of Internet, Colors in a website, Planning for a website, The working place, **HTML5**, Meeting the Client, Starting with the website, Inserting Text and Graphics, Working with Tables, Linking Web Pages, Using **CSS3**, Using Frames, Using sound, flash and video, Using Behaviors, Creating forms, Search Engine Optimization, Testing the Website, Uploading the Website, Designing Templates

Outputs: Photo Gallery, Anchored Website, Newsletter, CSS, Video Gallery, Mobile Web Page, Enquiry Form, Website Designing, Web newsletter, Calendar



Figure 19: Photo Gallery

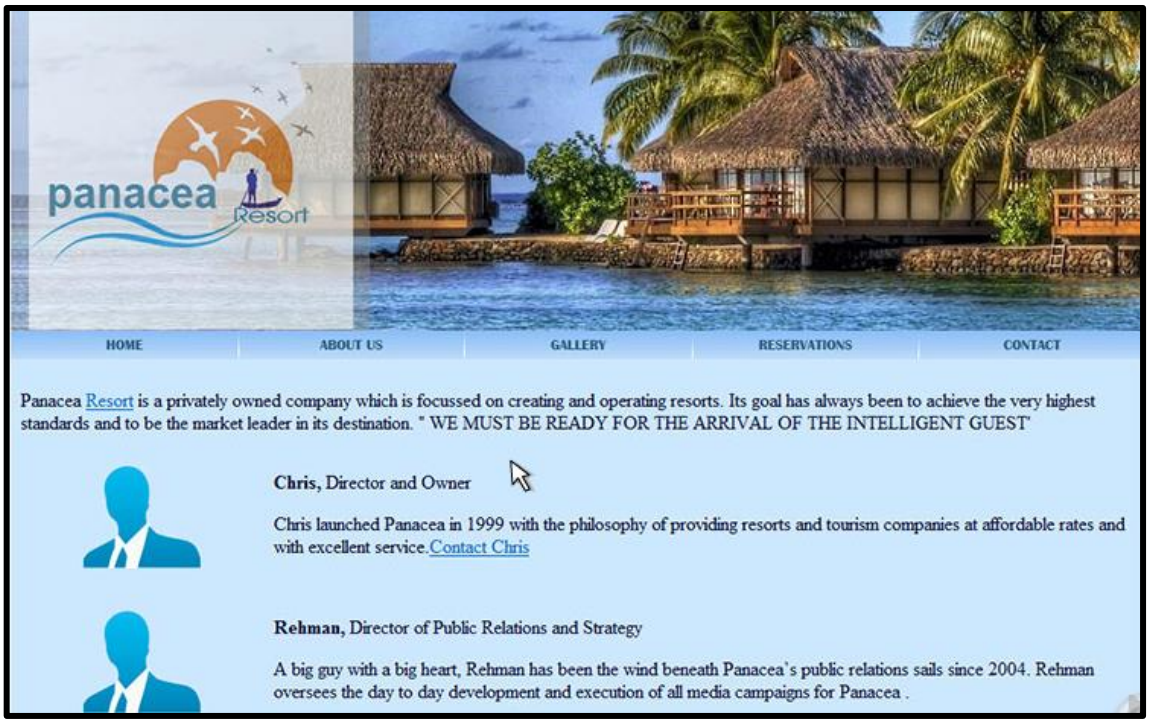


Figure 20: Website Designing

2.5 KLiC Video Editing

(KLiC Certificate in Video Editing)

Adobe Premiere

Skills: Importing and Capturing Footage, Timeline, Sequence and Clip Management, Basic Video Editing, Editing Audio, Mixing and Creating Effects with the Audio Mixer, Creating Transitions, Creating Titles and Graphics, Working with advanced editing techniques, Using Video Effects, Using Color mattes and Backdrops, Enhancing Video, Wrapping Up and Exporting

Outputs: Video Merging, Advertisement creation, video effects, creating a Short Film



Figure 21: Creating Short Film

2.6 KLiC Graphic Designing

(KLiC Certificate in Graphic Designing)

Adobe Illustrator

Skills : Working Place, Customizing, Tools, Layer And Layer Options, Pen, Pencils and Paths, Using the Brush and Paint, Specialized Tools, Getting Creative with Types, Using the Symbols, Designing Graphics, Effects and Filters, Playing With Palettes Select, View and Object, Automating, Exporting, Web and Devices

Outputs: Business Card, Labels, Letterhead, Coupon, Identity Card, Jewel Case Design, Book Mark, Sticker, Envelope, Magazine Advertisement, Flyer



Figure 22: Labels

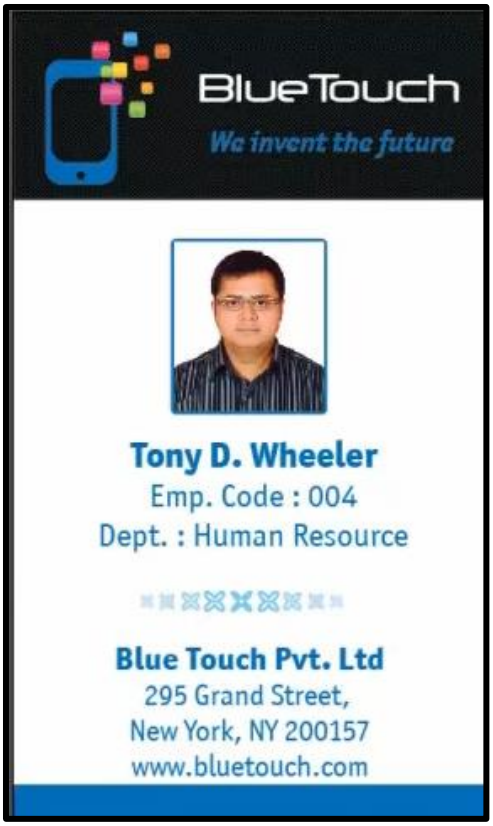


Figure 23: Identity Card

Adobe Photoshop

Skills: Working Place, Customizing, Image and Color Modifications, Case Study - Black & White to Color, Using the Brush and Paint, Working with Selections, Scaling, Knowing the Layers, Filter Gallery, Color Adjustments

Outputs: Web Layout Design, Web Banner, Advertisement, UI Design



Figure 24: Web Banner

Adobe InDesign

Skills: Creating and Viewing a Document, Managing Pages and Books, Managing Text , Formatting , Working with Objects, Working with Points and Paths, Case Study- Book Cover, Applying and Managing Colors, Working with Tables, Working with Styles, Printing and Outputting a Document, Setting Preferences

Outputs: Cover Page, Recipe Book, Book Cover

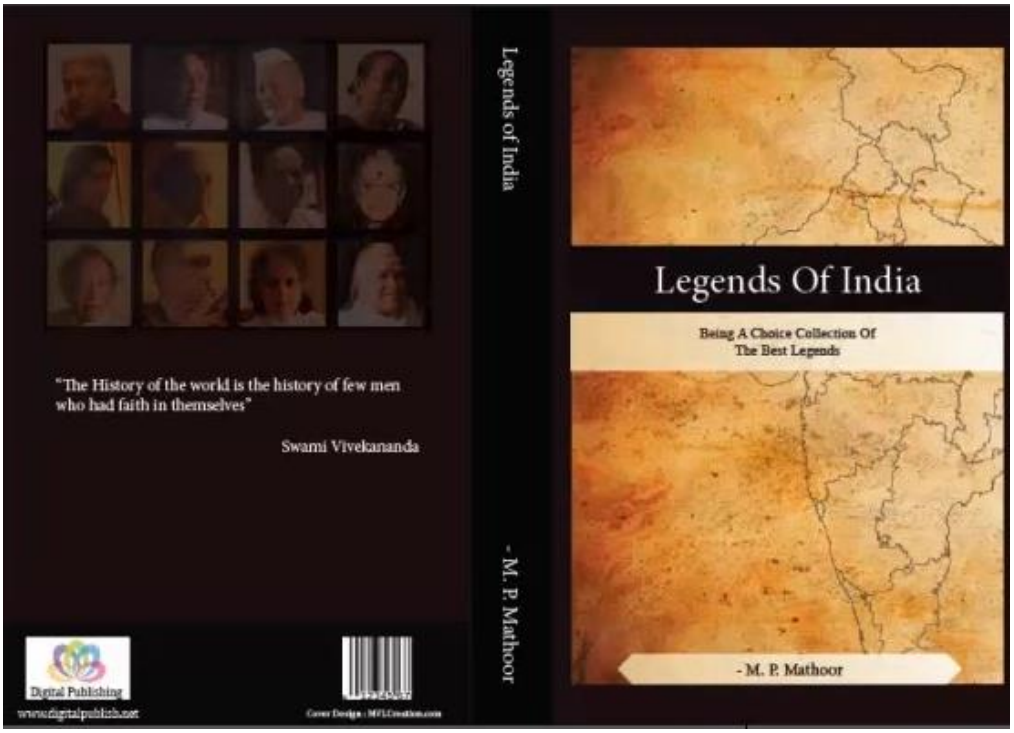


Figure 25: Book Cover



Figure 26: Recipe Book

2.7 KLiC Photo Editing

(KLiC Certificate in Photo Editing)

Adobe Photoshop

Skills: Working Place, Customizing, Image and Color Modifications, Case Study - Black & White to Color, Using the Brush and Paint, Working with Selections, Scaling, Knowing the Layers, Filter Gallery, Color Adjustments

Outputs: Red Eye correction, Photo Collage, Mapping to Object-MUG, T-Shirt Design, Photo Correction, Photo Manipulation, Cleaning Photo



Figure 27: Photo Collage

3. Accounting Track

3.1 KLiC Tally (with GST)

(KLiC Certificate in Financial Accounting with Tally ERP)

Tally (with GST)

Skills: Introduction to Financial Accounting, Tally History and Journey, Introduction to GST, Tally with GST, Financial Accounting Basics, Maintaining Company Data, Incorporation of various laws under GST, Creating Masters, Voucher Entry, and Constitutional Amendments in GST, Inventory, and Economic Survey in regards to GST, Payroll, TDS, Other Scenarios, Reports, Tally Software Services (TSS), and Data Management

Outputs: Company Creation, Accounts Configuration, Accounts Classification, Accounts Master Creations, Trial Balance, Voucher Entry, Discount Entry, Voucher Types and Classes, Accounts Vouchers, Bill Voucher, Final Accounts, Cost Centre, Creating Purchase Masters, Purchase Voucher Creation, Creating Sales Masters, Sales Voucher Creation, TDS Masters Pure Inventory Voucher, Units of Measure, Stock Categories, VAT Masters

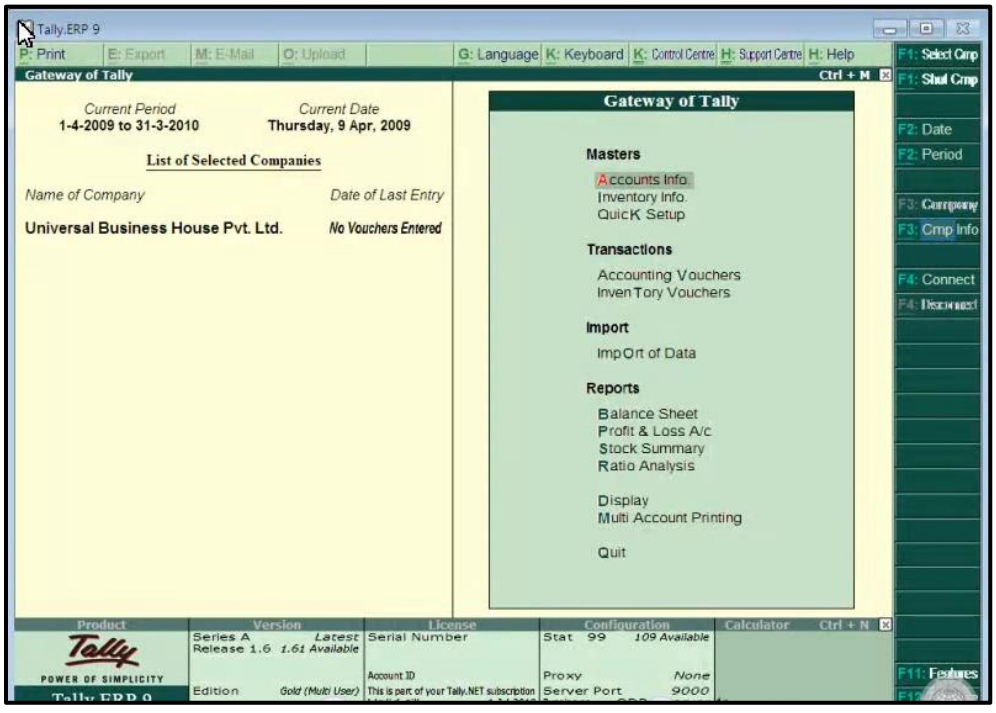


Figure 28: Company Creation

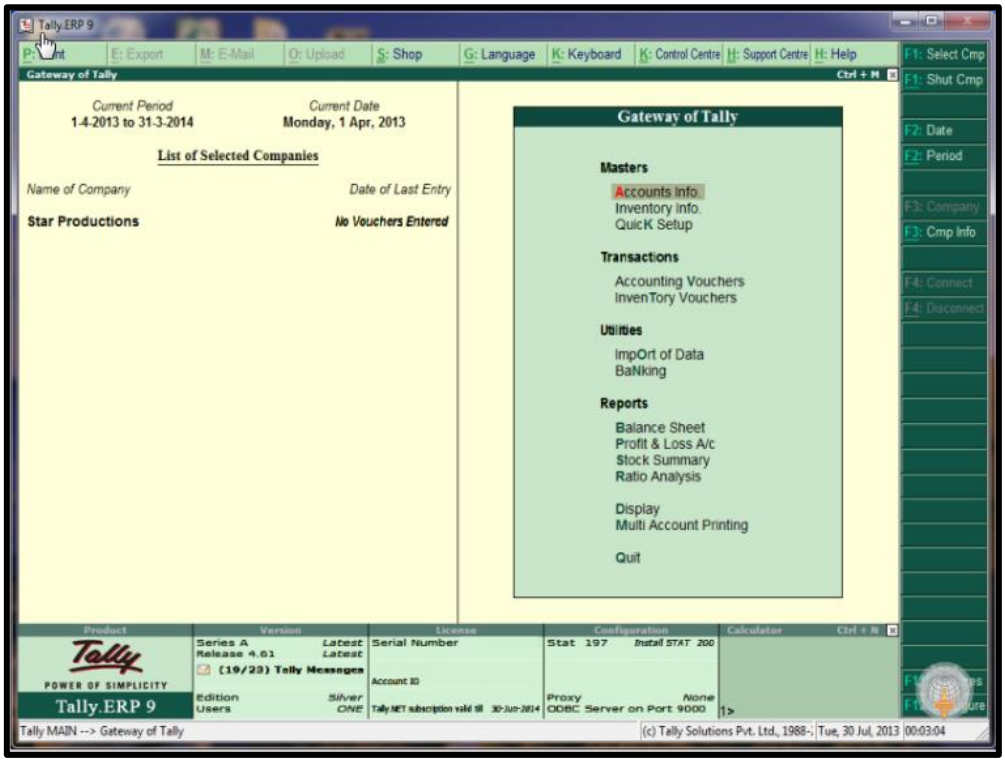


Figure 29: Advance Inventory Masters

3.2 KLiC Advanced Tally

(KLiC Certificate in Advanced Accounting with Tally ERP)

Advance Accounting with Tally

Tally.ERP 9

Skills: Creating Group, Entry of Registration Fees, Provision and Depreciation Entries, Pass the Transaction, Create Units of Measure, Activation of Interest Calculation, Multiple level pricing, Interest Calculation, Simple Interest, Set up and Configuration

Outputs: Balance Sheet, Credit sales Entry, Create Sales Excise Voucher, Ledger Creation, Create Stock Go-down, Checking Order, Create Stock Item, Voucher Creation, Cost Centre Creation

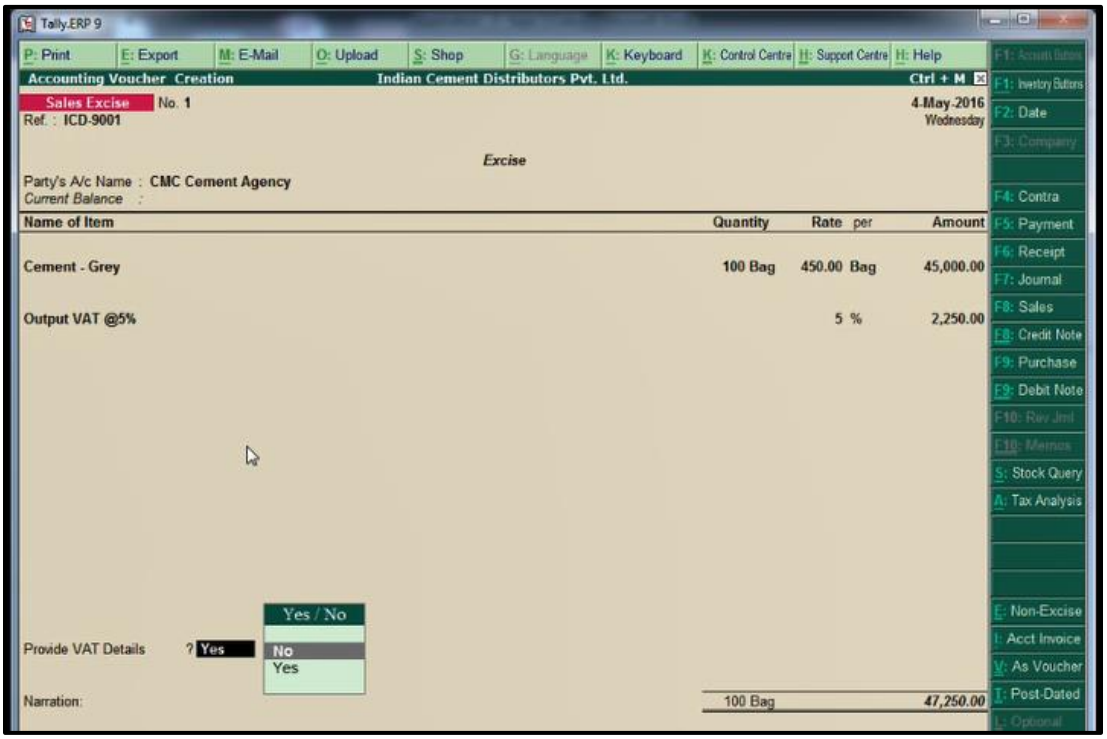


Figure 30: Sales Excise Voucher

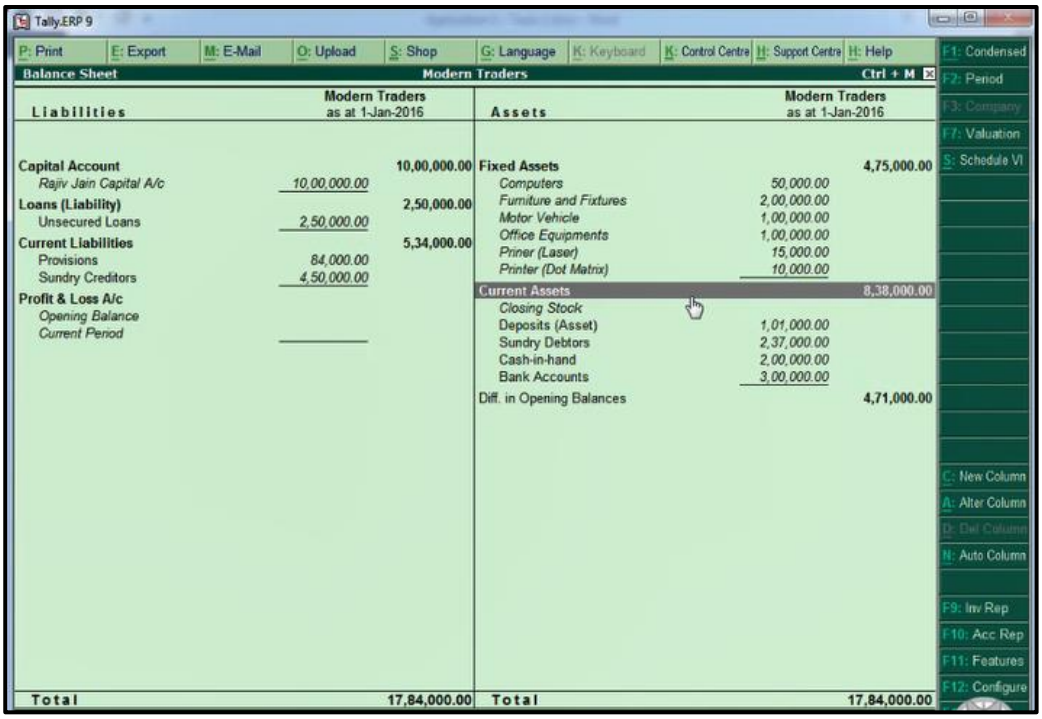


Figure 31: Balance Sheet

3.3 KLiC Advanced Excel

(KLiC Certificate in Advanced Excel)

Advanced Excel

Skills: Apply Custom Data Formats, Use Advanced Fill Options, Apply Advanced Conditional Formatting and Filtering, Use Form Controls, Apply Custom Styles and Templates, Prepare Workbooks for Internationalization, Mathematical Functions, Look up data by using functions, Apply advanced date and time functions, Functions for Manipulating Text, Merge Scenarios, Create Scenarios, Use Area, Scatter & Stock Charts, Create Custom Chart Templates, Manage Workbook Versions, Copy Macros between Workbooks, Protect Workbooks for Sharing

Outputs: Event Expenses, Exam Record, Planner, to do List, Database, Monthly Budget, Agenda, Receipt, Inventory

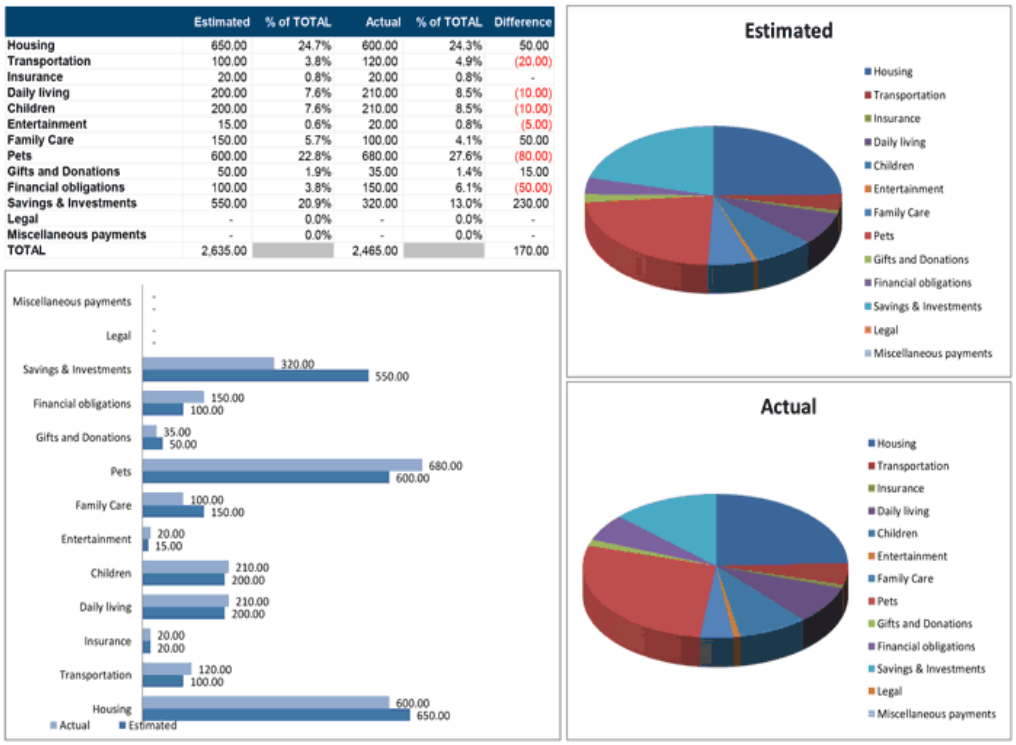
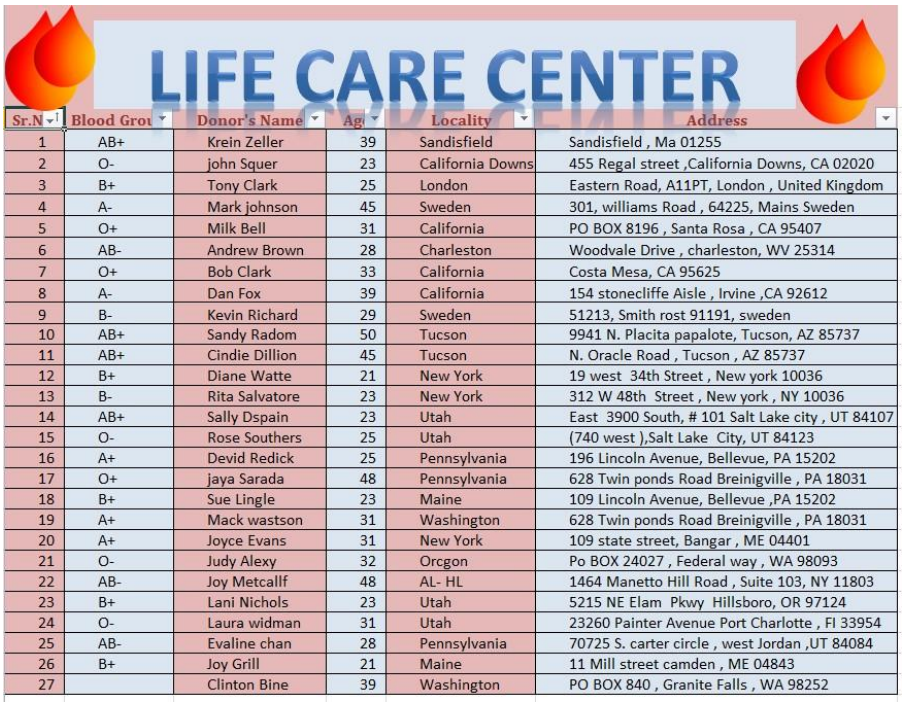


Figure 32: Event Expense sheet



LIFE CARE CENTER

Sr.N	Blood Grou	Donor's Name	Age	Locality	Address
1	AB+	Krein Zeller	39	Sandisfield	Sandisfield , Ma 01255
2	O-	john Squer	23	California Downs	455 Regal street ,California Downs, CA 02020
3	B+	Tony Clark	25	London	Eastern Road, A11PT, London , United Kingdom
4	A-	Mark johnson	45	Sweden	301, williams Road , 64225, Mains Sweden
5	O+	Milk Bell	31	California	PO BOX 8196 , Santa Rosa , CA 95407
6	AB-	Andrew Brown	28	Charleston	Woodvale Drive , charleston, WV 25314
7	O+	Bob Clark	33	California	Costa Mesa, CA 95625
8	A-	Dan Fox	39	California	154 stonecliffe Aisle , Irvine ,CA 92612
9	B-	Kevin Richard	29	Sweden	51213, Smith rost 91191, sweden
10	AB+	Sandy Radom	50	Tucson	9941 N. Placita papalote, Tucson, AZ 85737
11	AB+	Cindie Dillion	45	Tucson	N. Oracle Road , Tucson , AZ 85737
12	B+	Diane Watte	21	New York	19 west 34th Street , New york 10036
13	B-	Rita Salvatore	23	New York	312 W 48th Street , New york , NY 10036
14	AB+	Sally Dspain	23	Utah	East 3900 South, # 101 Salt Lake city , UT 84107
15	O-	Rose Southers	25	Utah	(740 west),Salt Lake City, UT 84123
16	A+	Devid Redick	25	Pennsylvania	196 Lincoln Avenue, Bellevue, PA 15202
17	O+	jaya Sarada	48	Pennsylvania	628 Twin ponds Road Breinigville , PA 18031
18	B+	Sue Lingle	23	Maine	109 Lincoln Avenue, Bellevue ,PA 15202
19	A+	Mack wastson	31	Washington	628 Twin ponds Road Breinigville , PA 18031
20	A+	Joyce Evans	31	New York	109 state street, Bangar , ME 04401
21	O-	Judy Alexy	32	Orcgon	Po BOX 24027 , Federal way , WA 98093
22	AB-	Joy Metcallf	48	AL- HL	1464 Manetto Hill Road , Suite 103, NY 11803
23	B+	Lani Nichols	23	Utah	5215 NE Elam Pkwy Hillsboro, OR 97124
24	O-	Laura widman	31	Utah	23260 Painter Avenue Port Charlotte , FI 33954
25	AB-	Evaline chan	28	Pennsylvania	70725 S. carter circle , west Jordan ,UT 84084
26	B+	Joy Grill	21	Maine	11 Mill street camden , ME 04843
27		Clinton Bine	39	Washington	PO BOX 840 , Granite Falls , WA 98252

Figure 33: Database

4. Programming Track

4.1 KLiC SCRATCH Programming

(KLiC Certificate in SCRATCH Programming)

SCRATCH

Skills: Computational skills and programming concepts (like sequences, iteration, conditionals, variables, and data structures), problem-solving, project-design skills like reasoning logically, debugging problems, developing ideas from primary concepts to final completed project, and concentration & focus.

Outputs: Creating Animations, Interactive Stories, Games, Shooting Game, Aquarium, Dancing Queen, Greeting Card, Whirling Crab

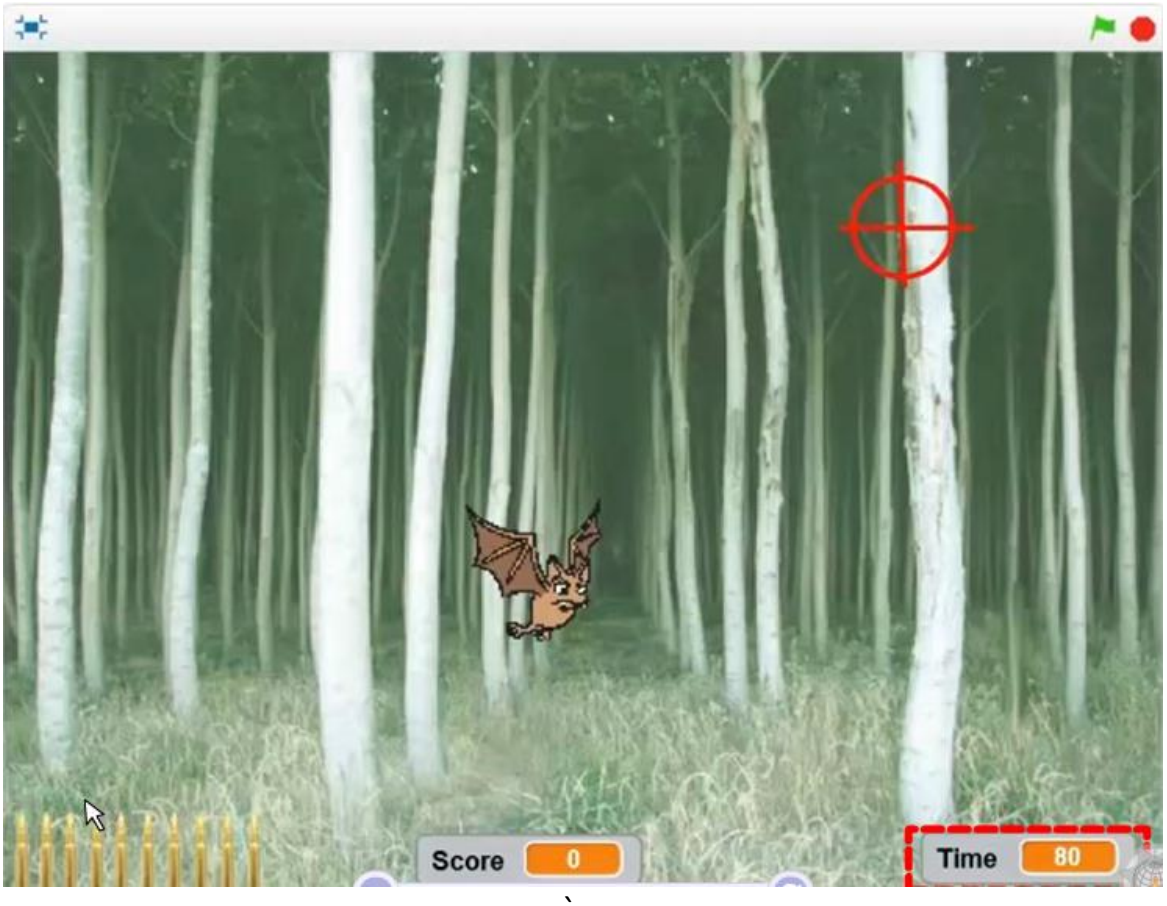


Figure 34: Shooting Game



Figure 35: Aquarium

4.2 KLiC C Programming

(KLiC Certificate in C Programming)

Turbo C



Skills:

- The C Character Set
- Constants
- Variables and Keywords
- Types of C Constants
- Types of C Variable
- C Keywords
- Receiving Input
- Integer and Float Conversions
- Hierarchy of Operations
- Associativity of Operators
- The if Statement
- Multiple Statements within if
- The if-else Statement
- Nested if-else's
- A Word of Caution
- Loops
- Nesting of Loops
- The Odd Loop
- Switch Versus if-else Ladder
- Calling Convention
- Pointer Notation
- Function Declaration and Prototypes
- Integers
- Long and short
- Integers
- Signed and unsigned
- Floats and Doubles
- Register Storage Class
- Macro Expansion
- A Simple Program Using Array
- Animation at Work Accessing Other St
- Communication with Keyboard
- Dynamic Linking
- Windows Hooks
- Caps Locked
- Permanently
- Blocking Signals
- Event Driven Programming
- Bounds Checking
- Pointers and Arrays
- Initializing a 2-Dimensional Array
- Pointer to an Array
- Passing 2-D array to a Function
- Pointers and 2-Dimensional Arrays
- Pointers and Strings
- Data Organization
- Reading from a File
- Counting Characters
- Tabs
- Spaces
- Writing to a File
- Record I/O Revisited
- Database Management
- Detecting Errors in Reading/Writing
- I/O Redirection
- Enumerated Data Type
- Typecasting
- Integers
- Memory Management
- Device Access
- Interaction with Window
- Drawing Shapes
- Types of Pens
- Types of Brushes
- Code and Resources
- Freehand Drawing
- The Paintbrush Style
- Capturing the Mouse
- Device Context
- A Closer Look
- Zombies and Orphans
- Zombies and Orphans
- Communication using Signals
- Handling Multiple Signals
- Registering a Common Handler

Turbo C



Outputs: ASCII Value, Swapping numbers, Even or Odd numbers, Leap Year, Roots of a Quadratic equation, Factors of a Number, Reversing an integer, Palindrome number, Factorial, Calculator with basic operations, Prime Numbers, Concatenating Two Strings, Pyramid using numbers

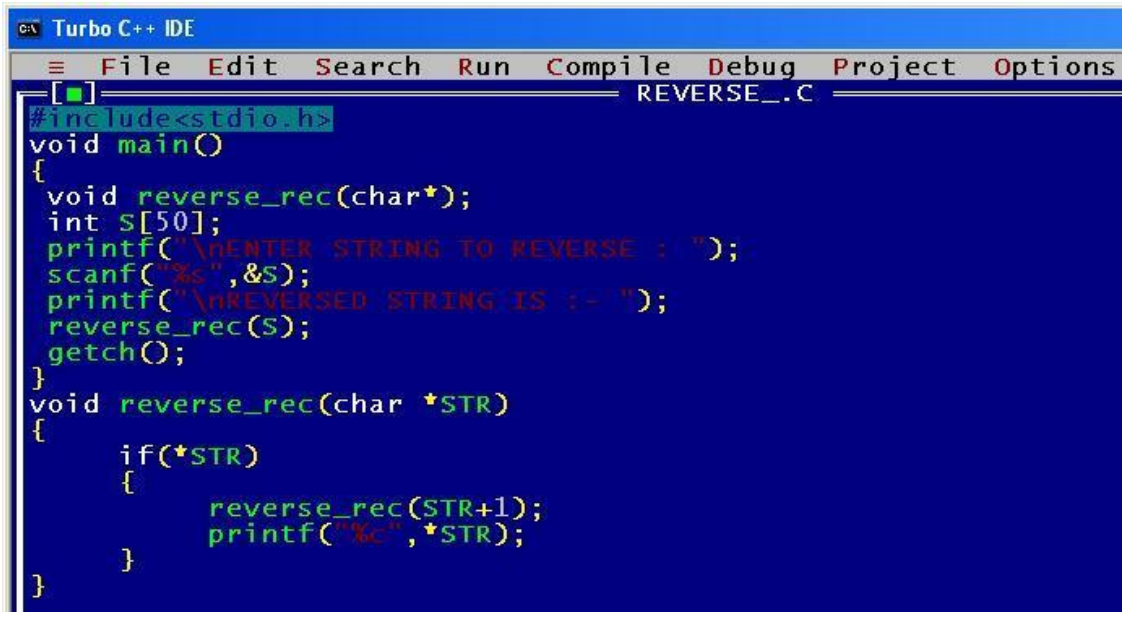


Figure 36: Reversing an integer

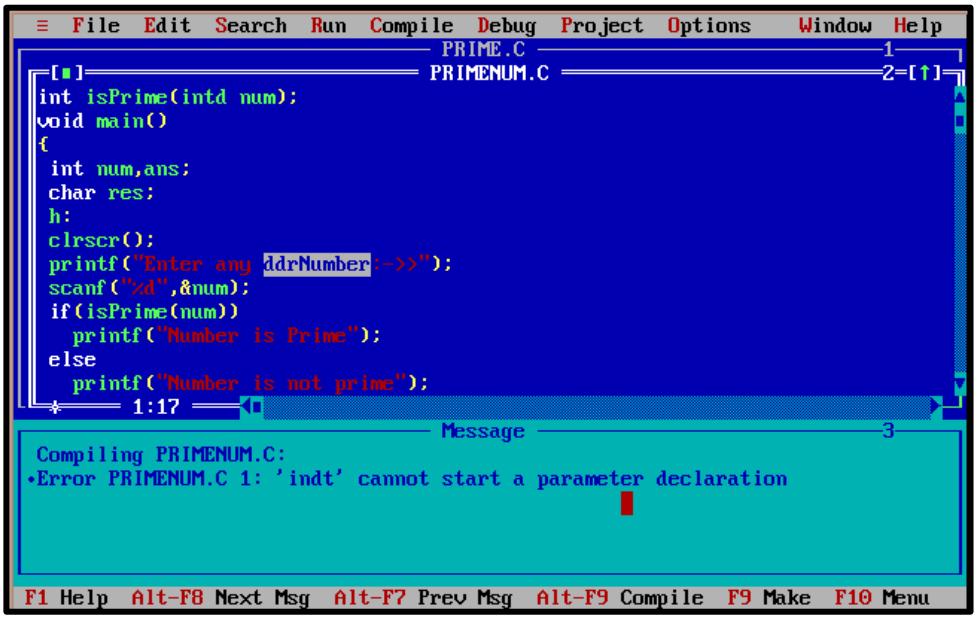


Figure 37: Prime Numbers

4.3 KLiC C++ Programming

(KLiC Certificate in C++ Programming)

Turbo C

Skills: Pre-requisite Knowledge and Skills, Inspire with C Programming, Checklist for Installation, The Programming Languages, The main Function, Understanding Header Files, Typology, Operator Precedence, Character I/O Functions, Standard I/O Functions, String I/O Functions, Understanding Arrays, Reading Array Elements, Copying and Finding Length of a String, Understanding and Comparing Strings, String Reverse and Concatenation, String Conversion and Searching a String, Using return Keyword, Function with Return Type and Arguments, Command Line Arguments, External Variables, The static and register Variables, Arrays in Pointers, Function Pointers, Call by Value and Call by Reference, Macro Expansion

Outputs: C++ Programming, Decision and Control Flow Statements



Figure 38: C++ Programming

5. Hardware and Networking Track

5.1 KLiC Hardware Support

(KLiC Certificate in IT Hardware Support)

Hardware Support

Skills: Identifying PC Components, Identifying System Unit Components, Identifying Storage Devices, Assembling a PC, Installing and Configuring a Printer, Troubleshooting and Maintaining Printers, Troubleshooting PC Hardware, Managing safety Hazards, Communication and Professionalism

Tools: PC Hardware, Hardware Monitoring Tools, Multi meters

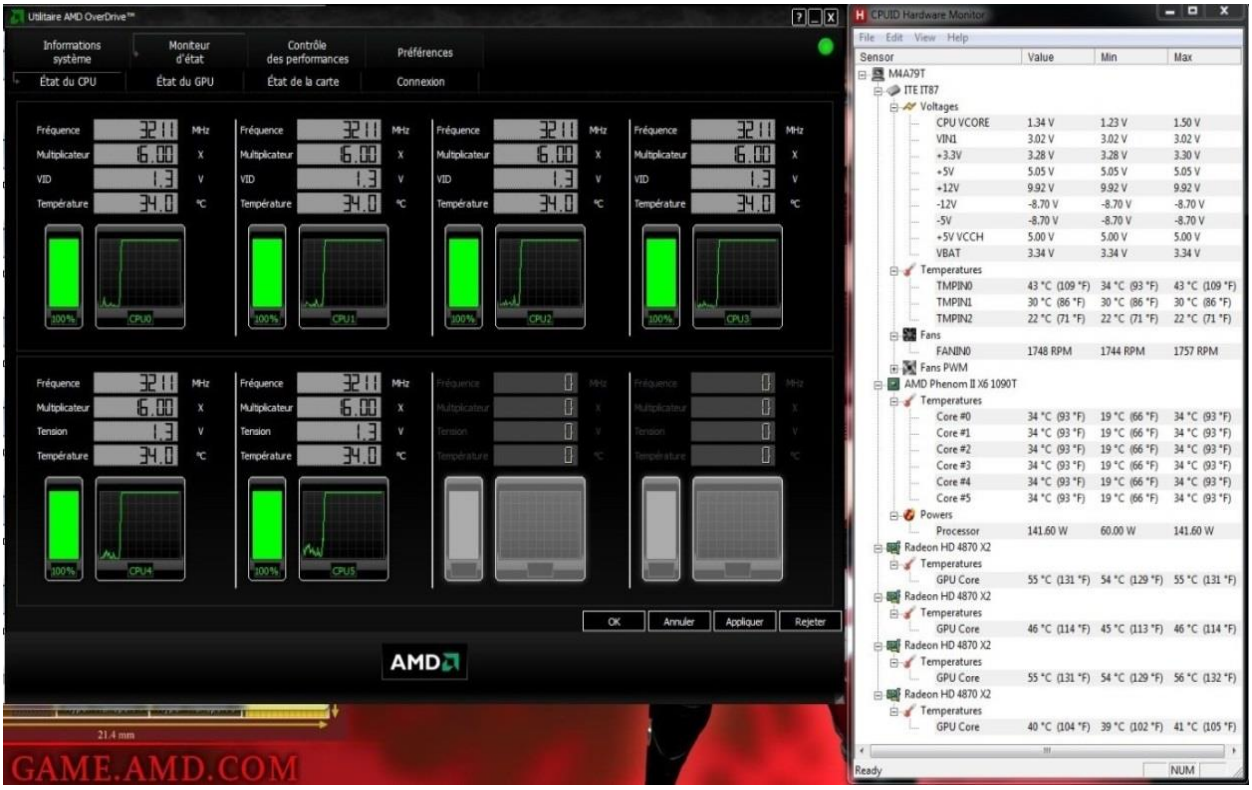


Figure 39: Hardware Monitoring Tools

5.2 KLiC Network Support

(KLiC Certificate in IT Network Support)

Hardware Support

Skills: Basics of Networking, Network Cabling, Basics of IP addressing, Configuring DHCP for Small Network, Troubleshooting of Networks, Configuring Wi-Fi Network

Tools: IT helpdesk, Network monitoring tools, LAN testers, Command line tools, Open source subnet calculators, Network packet analyzers



Figure 40: LAN testers

5.3 KLiC Security Support

(KLiC Certificate in IT Security Support)

IT Security Support

Skills: Using Antivirus Software, Antispam Technologies, Configuring Windows Firewall, Firewalls ,Proxy server and routers, MAC Address Filtering, Network Address Translation, Secure Remote Access, Authentication and Encryption, Man in the Middle Attack, Denial of Service Attack, Using network packet capturing tool

Tools: Open source antivirus, Antispyware, Windows firewall, Wi-Fi security settings, Antispam settings



Figure 41: Windows firewall

5.4 KLiC Desktop Support

(KLiC Certificate in Desktop Support)

Desktop Support



Skills: Installing Windows 7 OS, Installing Ubuntu on a PC, Installing Windows server 2008 R2, Creating Virtual OS Environment, Creating Windows 7 Virtual Operating System, Managing Devices and Drivers in an OS, Configuring backups in Windows 7, Capturing Disk Image -Backup, Capturing Disk Image -Restore, Configuring Regional Language Settings

Tools: Operating system installation utilities, Virtual Operating systems, Hard disk analyzing tools, Remote desktop software's, Disk partitioning tools, Windows users and file management, Regional language typing tools



Figure 42: Virtual Operating systems

6. Digital Arts Track

6.1 KLiC AutoCAD

(KLiC Certificate in AutoCAD)

AutoCAD

Skills: File Formats used in AutoCAD, Working with Line object, Erasing Objects, Using the Grid, Snap, Setup Drawing Units & Limits, Using Absolute Cartesian Method, Using Relative Cartesian Method, Using Polar Coordinate Method, Using Dynamic Input to Draw Objects, Drawing an ARC, Drawing SPLINE n POLYLINE, Drawing an RECTANGLE & POLYLINES, Using POINT, Using HATCH and GRADIENTS, Running OSnap & OSnap Tracking, Using GRIPS & Object Properties, Create a Window and Copy it to Various Locations, Creating Text Style, Editing Dimensions, Create Draft Passage, Staircase & Lift

Outputs: Aluminum Glass, Computer Institute Plan, Swimming Pool, Pipe section, Chairs, Table, Floor Plan

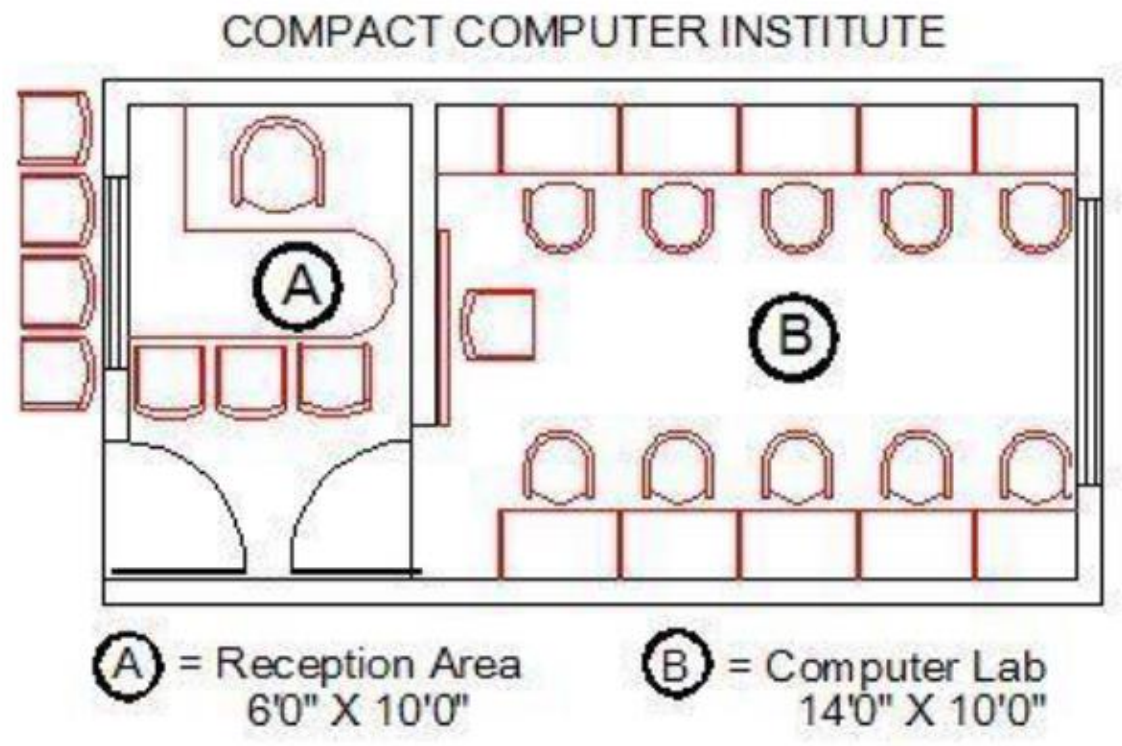


Figure 43: Computer Institute Plan



Figure 44: Floor Plan

6.2 KLiC 3D Modeling

(KLiC Certificate in 3D Modeling)

Blender

Skills: 3D movies, Comprehend CGI, 3d animation process, CG modeler, install Blender, Various parts of blender

Outputs: Create a toy, create a Coral, create a Chair, create a Chocolate cube, create a Pipe, create a Pillar, create a Ceiling fan, and create a Bullock cart wheel

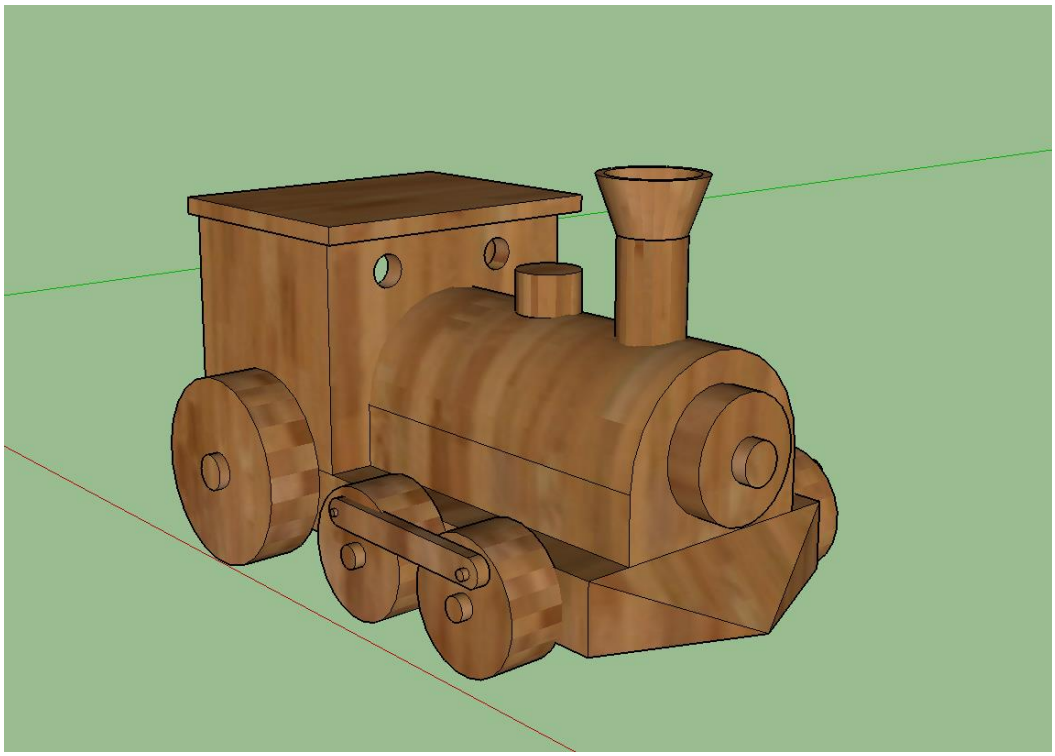


Figure 45: Create a Toy

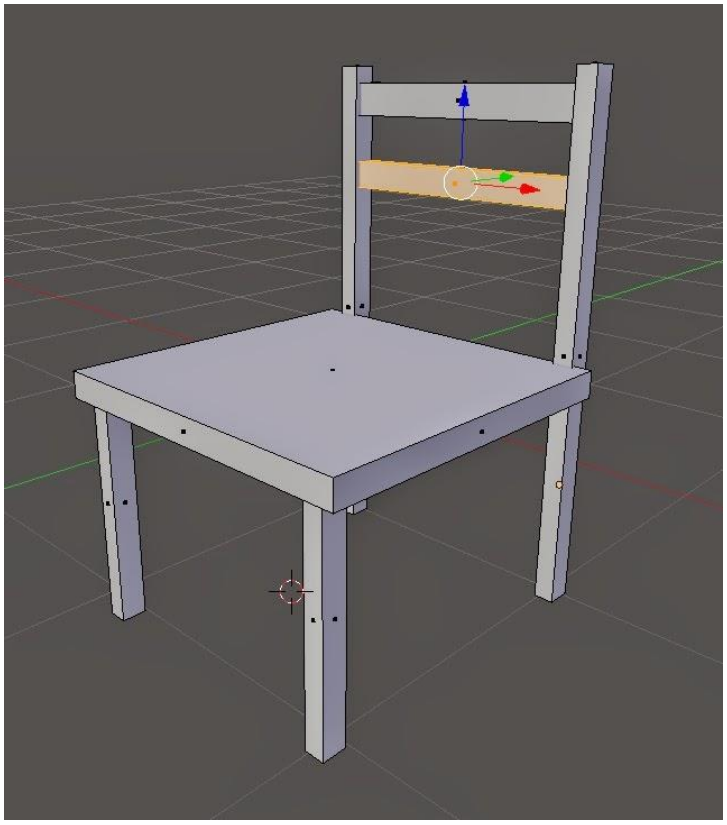


Figure 46: Create a Chair

6.3 KLiC 3D Texturing

(KLiC Certificate in 3D Texturing)

Blender

Skills: 3D movies, Comprehend CGI, CG Texturing artist, Open ended activity, Texture to 3D Primitive, Different types of Maps, Start using xNormal, Monster, Anisotropic Utensils, Projection Painting

Outputs: Earth/Globe, Sword, Stone, Wooden Chair, Glass and Milk texture, Bronze, Subsurface Scattering, Match Box



Figure 47: Wooden Chair



Figure 48: Match Box

6.4 KLiC 3D Rigging

(KLiC Certificate in 3D Rigging)

Blender



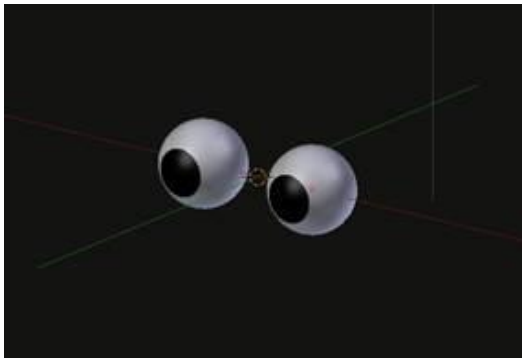
Skills:

- Add mesh object
- Parenting
- Duplicate hierarchy
- Scale parent within parenting
- Remove the previous parent relationship
- Hide relationship lines
- Use outliner panel & its properties
- Add empty
- Give proper nomenclature
- Use of transformation panel
- Use of snap option
- Pivot setting
- How to set zero out value
- Add empty's custom shapes & properties
- How to set 3D cursor
- Hide and unhide the object
- Maintain hierarchy
- Add & use constraint
- Insert key frame
- Use of clamp region
- Change the axis
- Add single driver
- Open & work within graph editor
- Use of driver's property shelf
- Remove error of scripted action
- Use of scripted action
- Rotate an object continuously by constant speed
- Extrude& Subdivide
- Join the bones
- Switch the direction of a bone
- How to set individual origin
- Use of bone's mode i.e. (Object)
- Edit & pose
- Use of data object panel
- Check values of shape key
- Join object as shape
- Add background image
- Use of color code for weight paint
- Parent object and bone with 'automatic weights'
- Paint vertex group
- Work with weight paint mode
- Increase and decrease weights
- Strength
- Radius
- Use of different weight paint brushes
- Use of different weight tools
- Add & use bone constraint
- How do X-Ray to the object
- Generate 'Rigify' custom shape
- Distribute objects to different layers
- Lock camera view
- Use of handle type
- Render & do setting for it
- Use of Euler rotation & why
- Use of Gimbal lock
- Copy and paste driver
- X-mirror
- Use of chain length while rigging

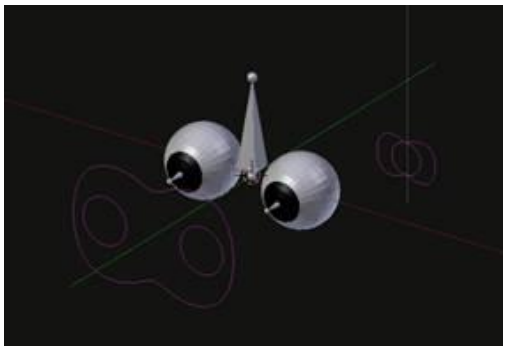
Blender



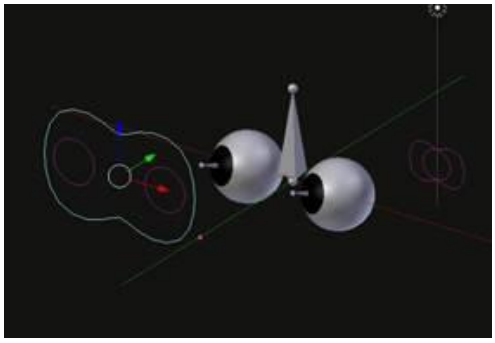
Outputs: Basic parenting using primitives, Solar System, elbow & arm structure, Android Character, Rotating Gears, copy scale constraint by using primitives, limit location constraint by using primitives, limit rotation constraint by using primitives, limit scale constraint by using primitives, limit distance constraint by using primitives, Track to modifier by using primitives, Drivers by using primitives, Use driver to locate, Use driver to rotate, graph editor, understanding of bones, Shape key by using primitives, Skinning weight paint, Nut & bolt, Bouncing ball, Jet plane, Coin, Potter's wheel, Conveyer Belt, Eye rig, Facial Expression, Enhance facial rig, Bow and Arrow



Eye before rig

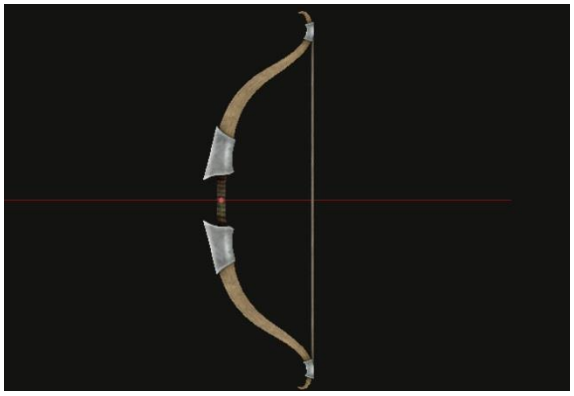


Eye after rig

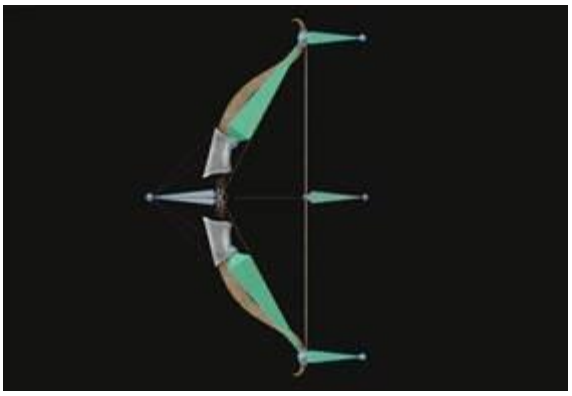


Eye after rig

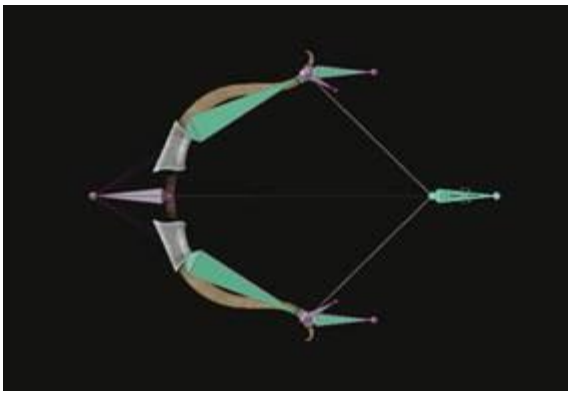
Figure 49: Eye Rig



Bow before rig



Bow after rig



Bow after rig

Figure 50: Bow and Arrow

6.5 KLiC 3D Animation

(KLiC Certificate in 3D Animation)

Blender



Skills: Insert Frame, Insert Key frame on Timeline, Transform Panel, Location Rotation Scale, Automatic Key frame Insertion, Lock Camera to view, Graph Editor, Dope Sheet, Node Editor, Add Marker, Rename Marker, extrapolation Mode, Make Cyclic, Leaner Extrapolation, Active Key frame, Bezier, Interpolation, Set Key frame, Transform Origin to 3D Cursor, Handle Type, Vector Handle Type, Empty Plain Axes, Arrows, Bezier Curve, Curve Path, Add Object Constraint, Follow Path, Copy Location, Array Modifier, Object Data, Material, Material types, Transparency, Alpha, Pose Mode, Edit Mode, Use Transform Manipulators, Camera Panel, Depth and Field, Display, Limit and Mist, Focus, World Panel, Light Panel, Shading Smooth, Render Panel, Set Resolution, Sampling Presets, Setting, File Format, Output, Place Holder, Animation

Outputs: Can, Apple, Car Camera Parenting, Car Translating, Temple, Nut and Bolt, Coin, Jet Plane, Potter's Wheel, Array Animation, Cube Rotating Animation, Light Animation, Animation Principle :- Anticipation, Arcs, Ease In and Out, Exaggeration, Follow Through & Overlapping Action, Secondary Action, Squash and Stretch, Staging, Timing



Figure 51: Light Animation

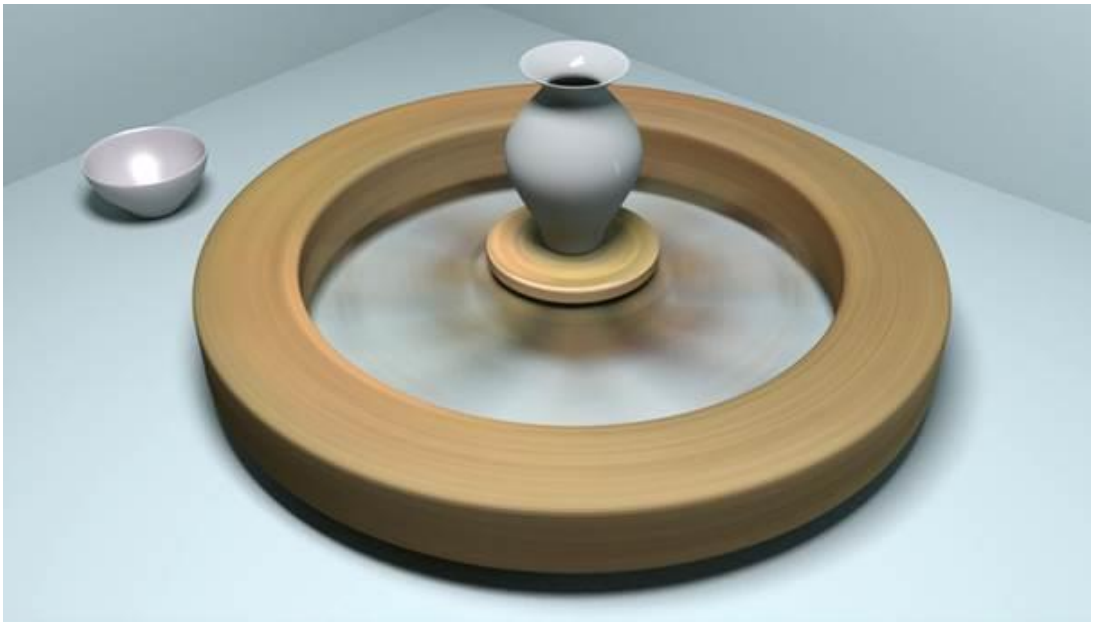


Figure 52: Potter's Wheel