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# An Application of Autocraft Workshop

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## ABSTRACT

Autocraft Workshop is a software application developed in C++ language, implementing Object Oriented Programming and file handling to make the process of service of Automotive service centers more easy and efficient. This paper provides a customer centric interface in order to provide the best possible service and satisfaction to the customers. In addition it makes the overall service process much faster and helps to keep track and record the entire service data. It is beneficial for the customer as well as the store to keep track of the progress of the service and thus helps the company to improve their response to customer requests. Time is a very valuable asset for the customers and the company as well, and hence this application focusses on reducing the waiting and processing time involved in the service delivery. It provides the company to store their entire data in the database. The store also enables the customers to purchase the parts in-house and hence reduces the effort of procuring them. This software application eliminates the hardships and ineffectiveness of the manual service management system and provides a computerized solution to several problems existing in the service sector.

Keywords : Autocraft Workshop, Object Oriented Programming, Service management.

#### I. INTRODUCTION

Creates an effective customer-centric application for the functioning of an automobile workshop company using the concept of object orientedprogramming to improve the efficiency of the organization along with customer satisfaction.Provides a feasible computerized solution to manage the large volume of simultaneous processes in the organization.Creates an optimal application to provide ease of service to the customer. And provides the best possible solution to the organization to manage and handle their customers services and deliver optimum efficiently.Organizes the functioning of the service

lines in order to coordinate the inter-related dependent working of various services.Offers various services required diverse for the periodic maintenance of vehicles to the customers.Enhances the quality of goods and services offered by increasing the investment of the company on machinery and products rather than traditional methods of service and labor.Maximizes the financial benefit of the company as well as the customers by providing quality service to a large number of customers effectively.Increases time management and eliminating the need for the customer to wait for their service to be delivered, and providing the status of progress of the service to the customer so that they can plan accordingly.Builds a good reputation for the organization by delivering service at the promised time and ensuring satisfaction of the customer.

## **II. MOTIVATION BEHIND THE WORK**

To simplify and enhance the process efficiency of the automobile service sector in order to provide customer satisfaction as well as increase the quality of service delivered and also to produce a customer oriented solution to the service industry.

#### **III. ALGORITHM**

1. Ask for INPUT from the user, from the following options.

A. View all services

- B. Book a Service
- C. Get a Quotation
- D. My Account
- E. About us
- F. Store
- G. Exit

2. If the INPUT received is from the following options:

A. View all the services provided by the company, based on categories and type of service, with the split up costs.

B. Book a Service –

i. Accept an INPUT from the customer if the vehicle is a two wheeler or 4 wheelers.

ii. Accept INPUT for Brand, Model and Vehicle Number.

iii. Display the list of service packages from the corresponding database containing all the service details.

iv. Accept INPUT for the service the customer wishes to avail.

v. The base class contains the basic service and the derived classes contain different additional services and the respective class is used based on the user input.

vi. Accept the customer contact details.

vii. Accept INPUT if the customer wishes to have a delivery/pickup.

viii. If YES, then accept the address and store it in the database. ELSE continue.

ix. Create a respective object for the vehicle based on the service chosen.

x. Store the customer details in the customer database.

xi. Process the servicing of the vehicle and mark the vehicle in the active services file.

C. Get a Quotation –

i. Accept an INPUT from the customer if the vehicle is a two wheeler or 4 wheelers.

ii. Accept INPUT for Brand, Model.

iii. Display the list of all services from the corresponding database containing all the service details.

iv. Accept INPUT for the service the customer wishes to avail.

v. Find the quotation for the accepted data in the database and display it. [The default services of all the vehicles are stored in the base class and all the additional services are in the derived class.]

D. My Account –

i. Ask for INPUT from the user from the following options.

- a. Service Status
- b. My Profile
- c. My Bill
- d. My Cart
- e. Exit to main menu

ii. Based on the INPUT perform the following:

a. Search for the current customer's details in the active and completed services file and display the corresponding message.

b. Search for the current customer's details in the customer services file and all the records of the customer (if any) are displayed.

c. The current bill amount for the service availed is taken from the respective function of the respective class and also the cart is checked if any amount needs to be added to the bill. If cart is not empty that product amount is added to the service

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bill. Polymorphism is implemented by using function overloading and passing different parameters.

The cart of the current customer is displayed d. based on Input of products made previously.

- Exit to Main Menu e.
- E. Admin Login -

i. Display options and accept INPUT from the following options:

- View all Active services a.
- b. View all Completed services
- Change the status of the service. c.

d. View/Update the stock of accessories and parts

Based on the input perform the respective ii. operation.

F. About us -

i. The Information about the company is displayed

ii. The contact details of the company are displayed

G. Exit -

The program is terminated and an appropriate message is displayed

## IV. PROPOSED ARCHITECTURE





#### Fig 4.3

#### V. RESULTS AND DISCUSSION

	WELCOME TO MOTOCRAFT WORKSHOP I
	INDIA'S NO.1 AUTOMOBILE SERVICE COMPANY.
1.Customer	
2.Shop Admin	
Enter the choice	of login: 1
Customer Options	
1.View all servi	
2.Book a service	
3.Get a Quotatio	n
4.My Account	
5.About Us	
6.Shop	
7.Exit to Login	

#### Fig. 4.1

The above options are displayed to the customers when they get into the customer portal by logging in as customer. The user can choose from any of the above options to perform the respective task, and the respective function is invoked.

Enter the s	ervice number y	ou want to avail: 1	
Enter your	NAME: KU	MAR	
Enter your	VEHICLE NUMBER:	KA07PL1452	
Enter your	PHONE NUMBER:	985641254	
Enter 2 or	4 wheeler (2 or	4): 2	
Enter your	VEHICLE NAME( M	AKE-MODEL ): KTM-DUKE	
Do you want	a delivery or	pickup ? (Enter Y or N):	Ν

## Fig. 4.2

The above figure shows the booking screen for a customer when the booking option is chosen from the previous screen. The details of the customer are accepted and stored in the file system and retrieved later when needed by the various processes of the application.

	Labour Charges Spare Parts TAX-(CGST&SGST) Service Charges	800/- 800/- 238/- 136/-	
	Labour Charges Spare Parts TAX-(CGST&SGST)	800/- 800/- 238/-	
	Labour Charges	800/-	
	Labour Channes	000/	
	Consumables	1800/-	
S No.	Item Description	Amount	
mate of Deep s	ervice is :	detery condition chee	
->Wax nolish	->A	attery Condition cher	
->Eubrication	->E	RS Adjustment	
->Clutch adjus	tment ->S	park Plugs change	
->Vehicle Cond:	ition diagnosis ->S	->Suspension adjustment	
->Dashboard An	d Tyre Polishing ->R	adiator check	
->Interior Vac	uum Cleaning ->E	ngine tuning	
->Exterior Eco	-Wash ->L	->Wheel alignment ->Lights checking	
->Brake Pads C	leaning ->W		
->Engine Scann;	ing ->E	xhaust system check	
		ngine oir change	

The above figure shows the interface when a customer selects a service and requests an estimate. The estimate shows the various components involved in the service and their costs and the total cost of the particular service, along with the various services covered.

Your detail	ls are:		
NAME	VEHICLE NUMBER	PHONE NUMBER	VEHICLE
ROHIT	KA87TG6789	987456214	YAMAHA-R15
1.Service 9 2.My Profil 3.Exit to M	Status le Main menu		
Enter your	choice: 1		
Vaux annut	so is under prograss Pla	aco unit until completi	

#### Fig 4.4

The customer can view the current status of their vehicles and hence do not have to wait at the workshop without knowing if their service has been completed. This saves time for the customer and the organization and makes the application more efficient.

Admin Opti	ons:				
1.Update s	tock of Parts				
2.View Sto	re				
3.View Cus	tomer database				
4.Change t	he service status				
S.View Act	ive Services				
6.View Com	pleted services				
7.Exit to	Login				
8.Exit					
Enter choi					
The detail	s are:				
NAME	VEHICLE NUMBER	PHONE NUMBER		ADDRESS	
	KA09TV6576	097465125	RATAT-DUI SAR200		
	101001110370	007455742	UNING FULSAR200	NO ADDRESS	
RUMAR RAM	KA00TU7659	112 77 515 71 7	D/DD/15 - C 1 F1/		

### Fig 4.5

The above options are displayed when a workshop administrator logs in using the admin option. The details of the customers are displayed and also various other options for the administrator to manage the customer records. The administrator can choose from any of them for the respective operation.

1.Update st 2.View Stor 3.View Cust 4.Change th 5.View Acti 6.View Comp 7.Exit to L 8.Exit Enter choic The details	ock of Parts e omer database e service status ve Services leted services ogin e: 4 are:				
NAM	E VEHICLE NU	IBER PHONE NUMBER		SERVICE	
RAMESH	KA87TG0987	874596541	HONDA-ACTIVA	DeepService	
SRIRAM	KA87YU9876		MAHINDRA-BOLERO	AccidentRepair	
			1001 00000	en e	12/4/2010 10-22-6

Fig 4.6

The administrator can change the status of a vehicle and hence reduces the need for a customer to wait and the customer can plan their vehicle pickup according to the status, and hence reduces the waiting time and helps the organization deliver more efficiently.

#### VI. CONCLUSION

The goal of this project is to create an efficient, economical and effective service management application for an automobile workshop to manage the heavy load of customer demand in a more beneficial manner for both the customer as well as the company. This objective has been achieved by using the concepts of Object Oriented Programming in C++ in order to create the necessary application based on the principles in OOPS such as data abstraction, encapsulation, polymorphism, Inheritance and Classes and Objects. This method is one of the most effective methods as it has provided a both user friendly as well as a capable application software to meet the needs of the company as well as the customers. This software has been made on the lines of enhancing our programing knowledge in C++ and Object Oriented Programming Concepts, and has been a great informative, interesting and an innovative experience in the process of creating this application.

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