	their grouphly into four sectors of
	One Bhase is split groughly into four sectors of
	major activities  Planning: Determination of objectives, alternatives &
	constraints.
	Risk Analysis: Analyze alternatives and attempts
la de la	to identify & resolve gisks involved
	Development: Broduct development & testing product
0	Assessment: Customer evaluation
	the state of the s
	ADVA NTAGES
	Development is fast & features are added in systematic
and an i	manner. I do de de la como : philosophies ! w
۰	Changes can be done at a later stage.
	Risk Management
	Gustomer feedback
. 3-1	which is about to the little of the little o
	DISADVANTAGES
•	More documentation du to intermediale phases
	Costly model not switable for small project The model requires risk assessment expertise
	The model requires misk assessment expertise
ما	A COUNTY OF THE PROPERTY OF THE PARTY OF THE
(b)	SOPTWARE CHARACTERISTICS.
	Six mayor components:
	District the state of the state
	1) functionality: Degree of performance of the soldware
7.	against its intended purpose. Consider suitability, accuracy, compliance & security of software
	accuracy compliance & decurity at call and
	J SOLTUDIE

f. The second	in Reliabily: Ability
	desired functionality under given conditions.  Required functions: recoverability fault to terance  and maturity.
	Required Lynctions under given conditions.
	and maturity. recoverabity fault to leance
	with ease. Conderstandability leaved
	with ease. (Understandal)
	rearrability & operability
	in Efficiency: Ability of software to use system  nesource in most effective & efficient manner.
	resource in most of software to use system
.,	Efficient manner.
	can be made in a lathon of the modifications
	can be made in a software system to extend its.
	functionality, improve its performance or correct errors.
	1) Proprince or correct errors.
	(vi) Portability: Ease with which ad book do allow
	can relaunch software from one platform to another
	nithout (or with minimum) changes.
	Liviana tieno indicatantina totan interior
	AREAS OF APPLICATIONS OF SOFTWARE
	1. System Software - Infrastructure Softwares like
	1. System Software - Infrastructure softwares like complilers, operating systems, editors, obsiders etc.
	The state of the s
	2. Real Time Software - These softwares are used to
	r. Real Time Software - These loftwares are used to monitor, control & analyze real world events as they occur. Eg. Software for weather fore casting.
_	they occur. Eq. Software for weather fore casting.
	7.0

	3. Embedded software - This type of software is  flaced in Rem of the product & control various functions of product The product could be an air eraft, automobile, security system, etc.
	placed in Ray of the product & control various
	functions of product the product could be
	an air eraft, automobile, security system, etc.
	4. Business Software - Business software could be
	payroll file monitoring system, employee management
	4. Business Software - Business software could be payroll, file monitoring system, employee management account management. Eg Enterprise resource planning
	E. Pesignal rough, les contings - 12000 hearsen
	combuter anathine dia law anation la
	5. Personal computer software - word processors,  computer graphics, multimedia & animation tools,  database management etc
	anguy ac mangament etc
	C. Astificial Intelligence Software - Export systems
	artificial neural metrooria, signal processing software
7.0	of the second
	1. Engineering & scientific software - CAD/CAM package, SPSS, Martab, Engineering Pro, circuit analysess etc
	· · · · · · · · · · · · · · · · · · ·
ર.	(a) FUNCTIONAL REQUIREMENTS
	· Requirements—that end user specifically demands
	as basic facilities that the system should offer.
	as basic facilities that the system should offer.  All of these functionalities need to be necessarily incorporated in the system as a part of the
	incorporated in the system as a part of the
1 y }.	Contract
	· These are stated in the form of inhut given
-	to the system, the operation performed & the
	output expected.
	Example: Authentication of user when logging,
	act with agring,
- 1	

2500	System shutdown in case of cyper attack.
	in case of cypes attack.
	MOIN FUNCTION AT
	Defines the analy
	· Provite or attribute of a software system.
	Defines the quality attribute of a software eystem.  Provity or extent varies  Deals neith is sues like border i'll
	reliability sues like portability security.
_	Deals neith is sues like portability, security, performance etc. Sexisity, reusability,
	Example: Processing of each request must be
	done in 10 mocessing of each request must be
_	seconds!
_	CTEPC IN O-
	STEPS IN REQUIREMENT ENGINEERING PROCESS
	1 Devotal P
-	1. Develop Requirements
	Gather, analyze of develop requirements from the concept of operations, States holder heads a breaking
	Concept of operations, state holder heeds, objectives.
	Jeannes.
	2 Worte & Document Requirements
	an orrange
	1. Requirements Elicitation
	Many wood to said the
	many used to goin knowledge about project domain
_	4 repuirements lechniques used include interviews
	Mays used to gain knowledge about project domain  4 repuirements. Techniques used include interviews brain stroming, task analysis, prototyping etc.
_	to the second of
_	2. Requirement Specification
	The models used at this states include ER Dietram
	The models used af this stages include ER Diagram, clata from diagrams (DFDs), functional decomposition diagrams (FDDs) data dictionaries etc
	Line of the distinguish of
	diagrams (HDDs) della all'internes etc
	V
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s. Requirement verification & noticoation  verification - cet of tasks that ensure that the software correctly implements a specific function  Validation - Different set of tasks that ensure software that has been built is traceable to automer requirements  4. Requirements management  Analyzing documenting, tracking prioritizing & agreeing on the requirement.  (b) Major challenges that software engineering will face in next 10 years.  (i) Dev-Ops  with the invention of Dev ops there is need to shift olevelopment based decisions into the design phase.  (ii) Privacy & Security  These issues lave to be kept in mind churing - the design phase. Due to internet software are becoming in creasingly with esable.  (iii) Paig Data  with an expenential increase in data, loftware must but used to storing & actilizing yast amounts of data.		
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of data.		must get used to storing & atilizing wast amounts
		of data.

a distribution of the second	Universal web has transformed software systems:
/	maneformed software systems;
	In place of monolithic development most of the applications are developed for web users.  is easy. Changes made at one place will effect globally.  becomes easy to collect all parts to make a working application.
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	The wholes developed for met was
	is and appearing of maintenance of
	18 easy. Changes made at meb based software
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