PROBLEM STATEMENTS OF ANALAYSIS OF VARIANCE (AVOVA)

1.A team of AI engineers wants to compare the performance of four different programming languages (Python, Java, C++, R) on AI model training time to determine if there is a significant difference in training time across languages.

Programming Language	AI Model Training Time (minutes)	Model Accuracy (%)	Model Complexity (parameters)
Python	120	90	1000
Java	150	82	800
C++	100	92	1200
R	180	88	900

2. A researcher wants to investigate the effect of age group (young, old) and medication type (Diuretics, Beta Blockers, Angiotensin Converting Enzyme) on blood pressure in patients. The researcher collects systolic and diastolic blood pressure readings from a sample of patients and wants to determine if there is a significant difference in blood pressure across the different age groups and medication types.

Patient ID	Age Group	Medication type	Systolic Pressure	Diastolic Pressure
1	Young	Diuretics	120	80
2	Old	Beta Blockers	140	90
3	Young	Angiotensin Converting Enzyme	110	75

3.A researcher wants to compare the average scores of students from three different teaching methods to determine if there is a significant difference in student performance.

Students	Teaching Methods		
	Traditional Lecture Method	Project Based Learning	Flipped Classroom Method
Selvi	80	75	90
kanya	92	88	95
Sivi	85	77	92

4. Vijay TV wants to compare the ratings of five different TV shows (Neeya Naana, Airtel Super Singer, Adhu Idhu Edhu) to determine if there is a significant difference in ratings across shows.

TV shows	TV Genre	Number of Viewer	Number of Like
Neeya Naana	Reality	10000	8000
Mir Miss Chinnathirai	Reality	800	1500
CWC	Comedy	12000	1000
Adhu Idhu Edhu	Comedy	1000	2000

5.PlayStation wants to determine if there is a significant difference in user engagement metrics (playtime, completion rate) across different game genres (Action, Adventure, Sports, Role-Playing).

Game Genre	Playtime (hours)	Completion Rate (%)
Action	20	80
Adventure	25	70
Sports	15	90
Role-Playing	30	60