

School of Engineering

PROJECT PLANNING 2

Refining the plan

Mark Sandford

Last week - planning

Planning is an unnatural process

It is much more fun to do something

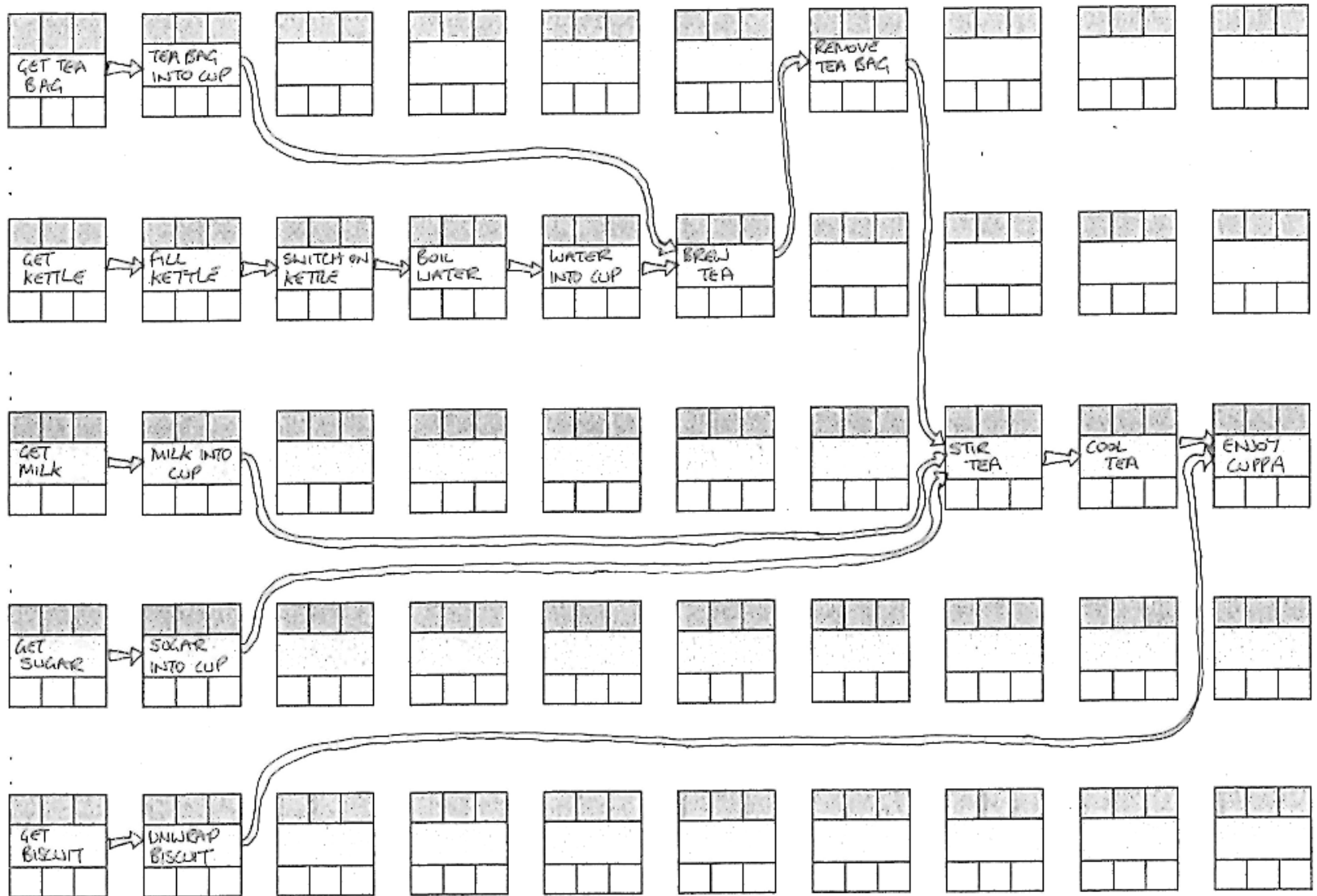
The nicest thing about not planning is that failure comes as a complete surprise rather than being preceded by a period of worry and depression.

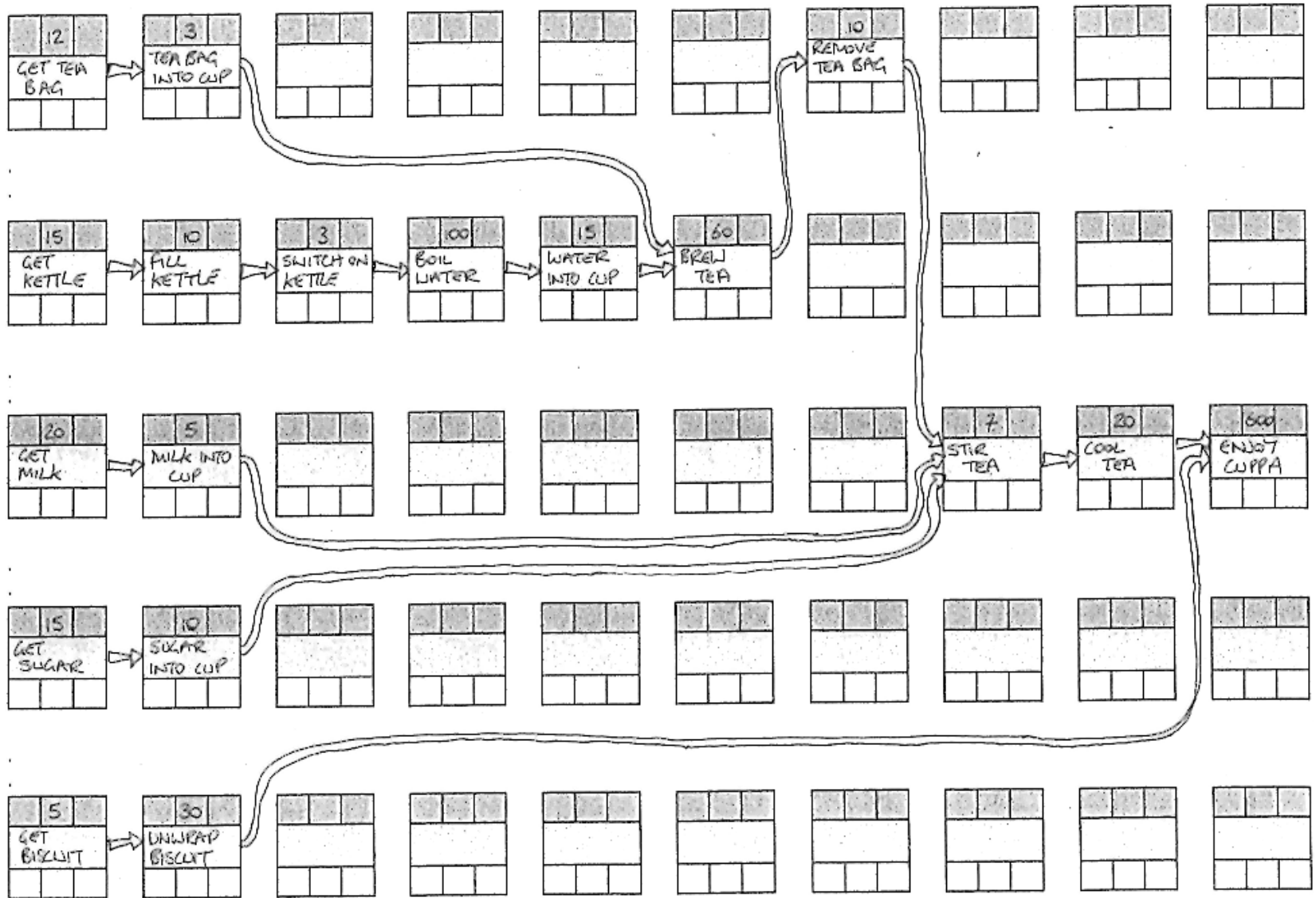
(John Harvey Jones)

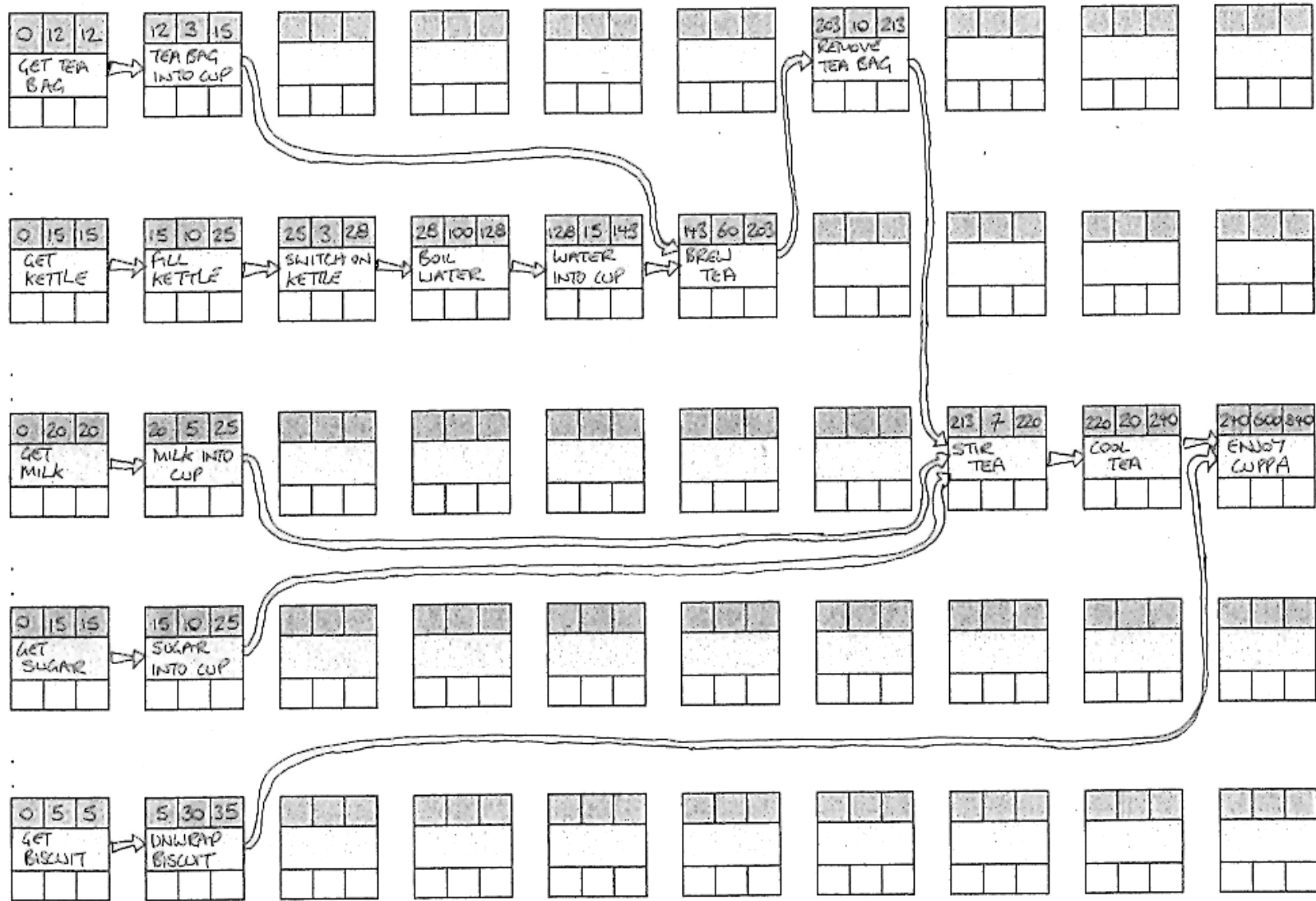
GET TEA BAG	TEA BAG INTO CUP					REMOVE TEA BAG			
GET KETTLE	FILL KETTLE	SWITCH ON KETTLE	BOIL WATER	WATER INTO CUP	BREW TEA				
GET MILK	MILK INTO CUP						STIR TEA	COOL TEA	ENJOY CUPPA
GET SUGAR	SUGAR INTO CUP								
GET BISCUIT	UNWRAP BISCUIT								

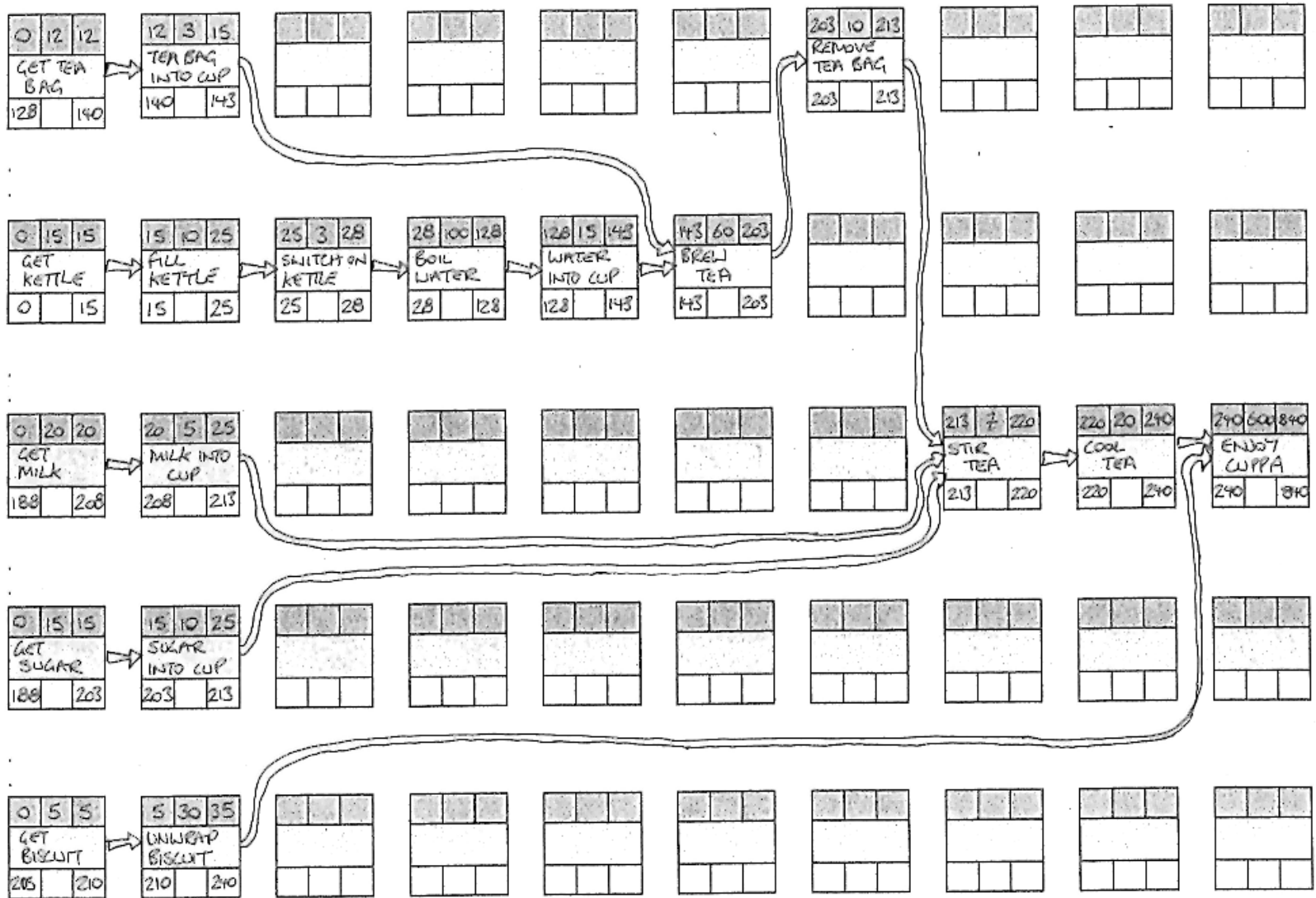
Precedence planning template

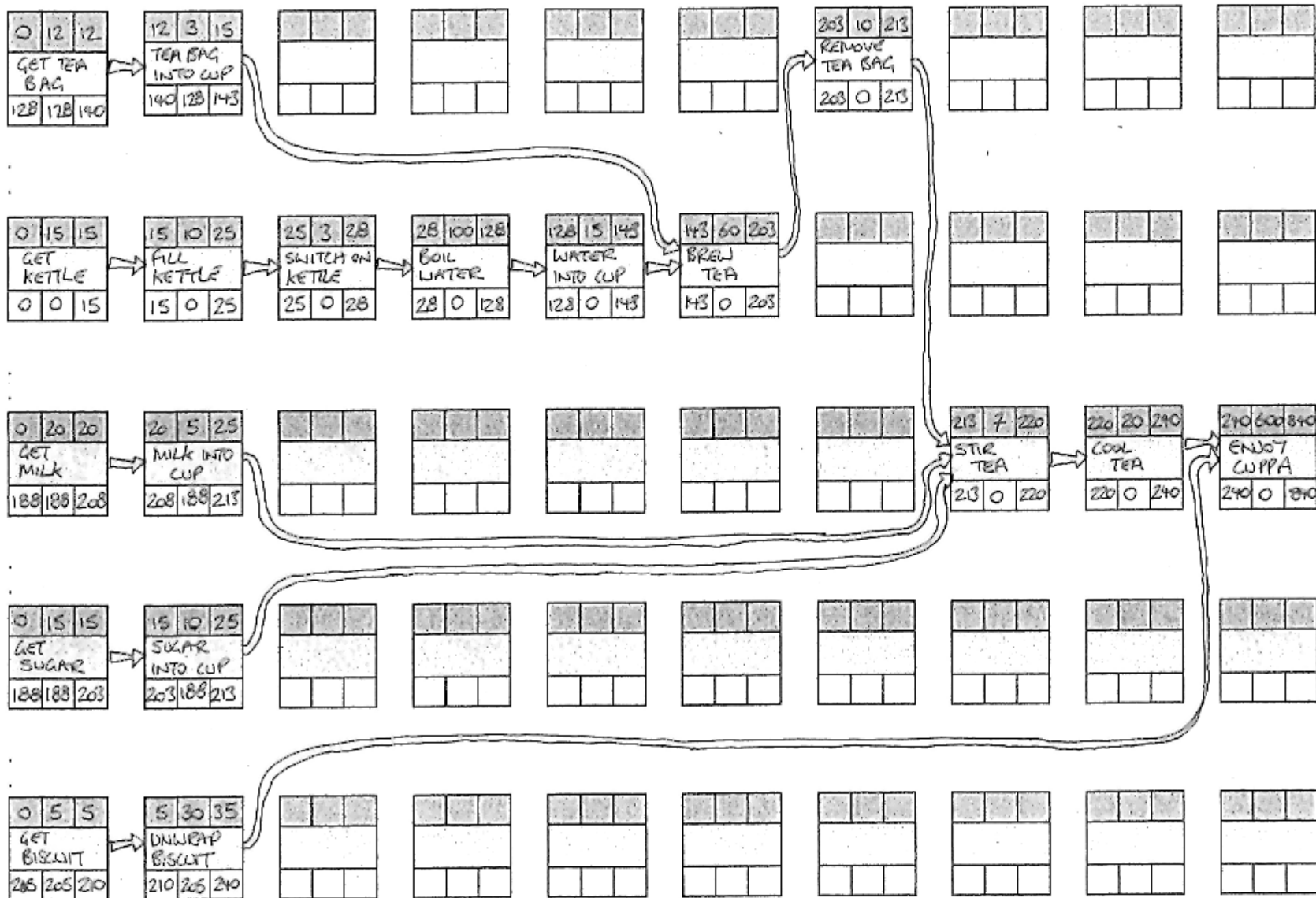
M Sandford





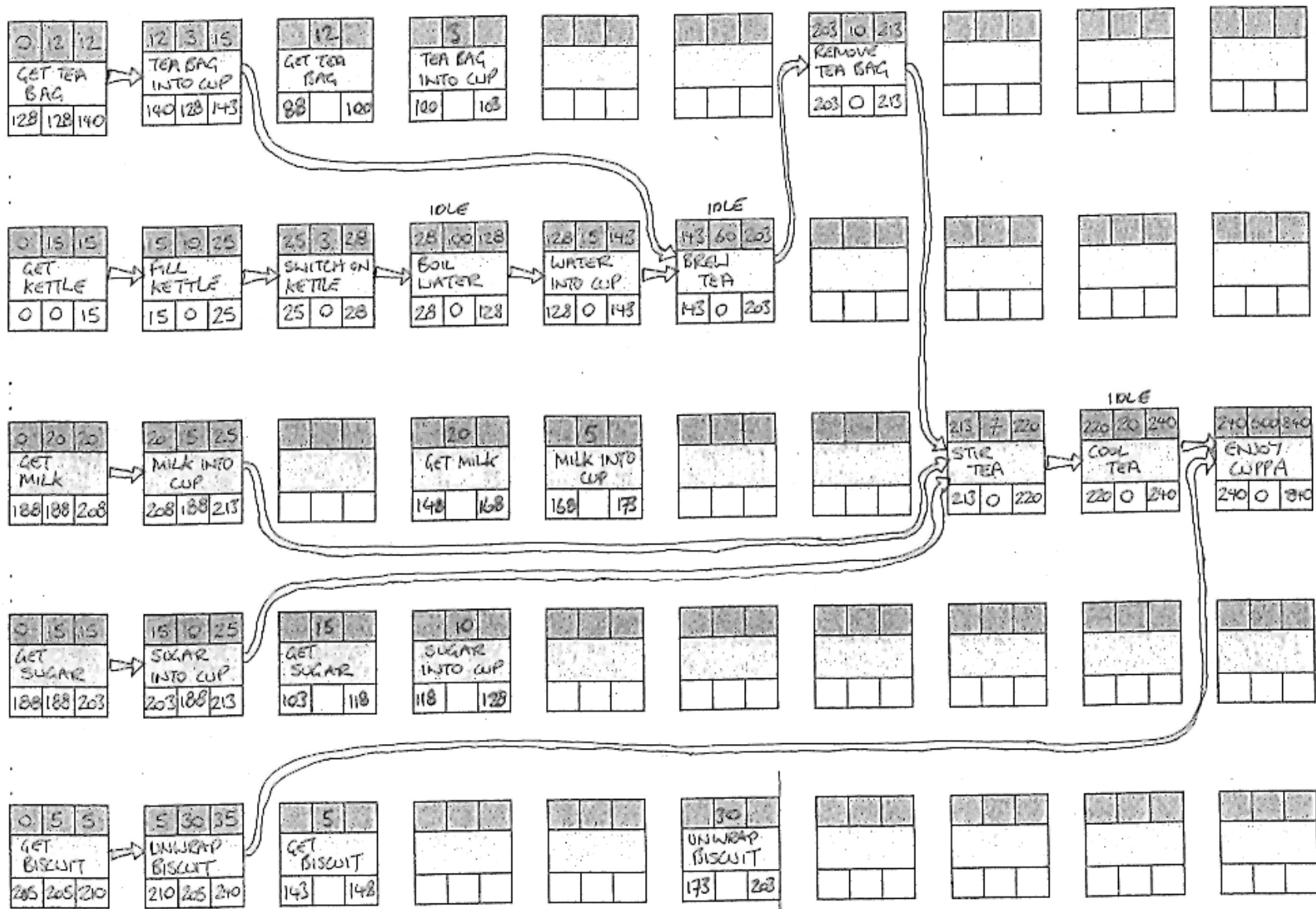


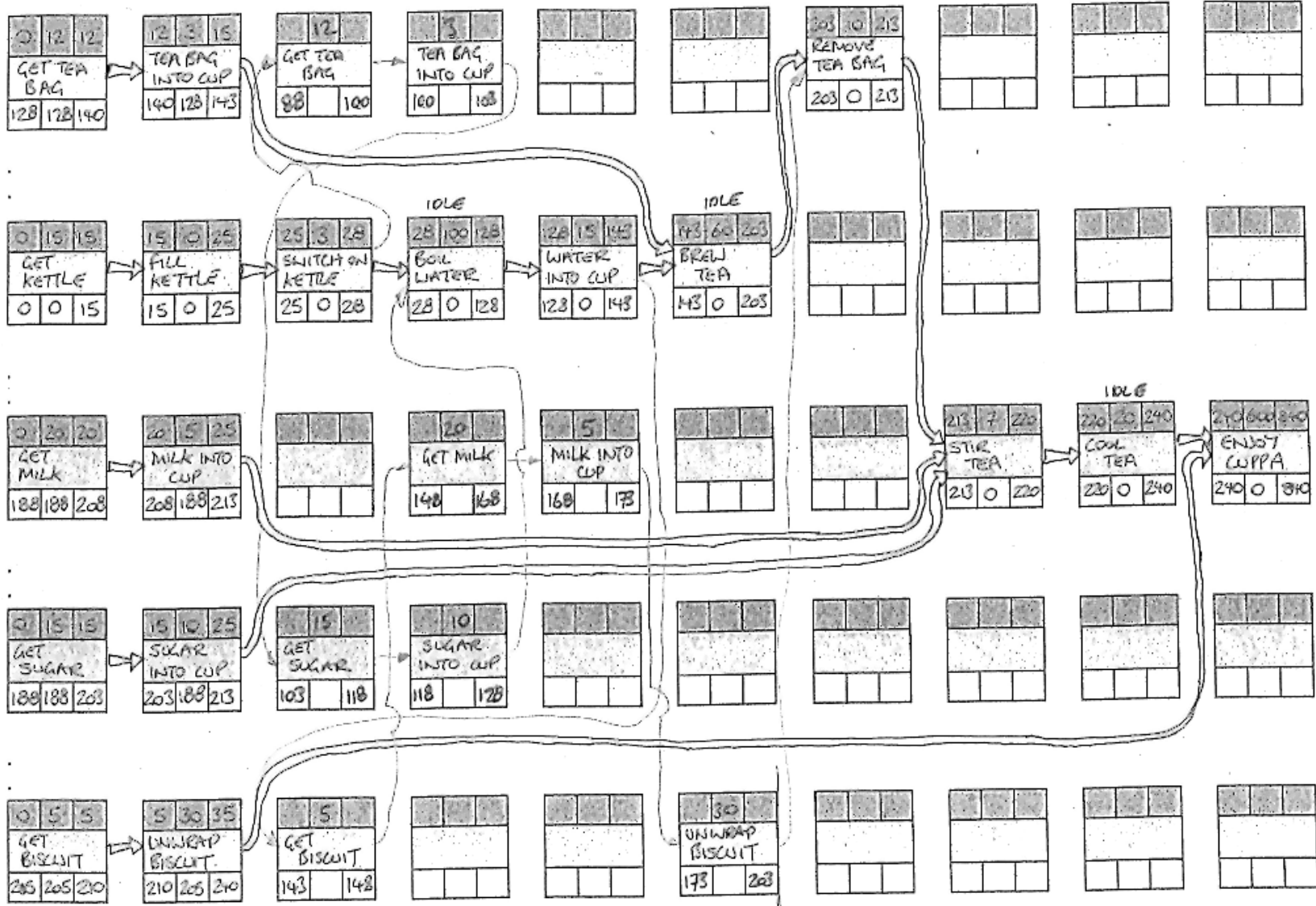


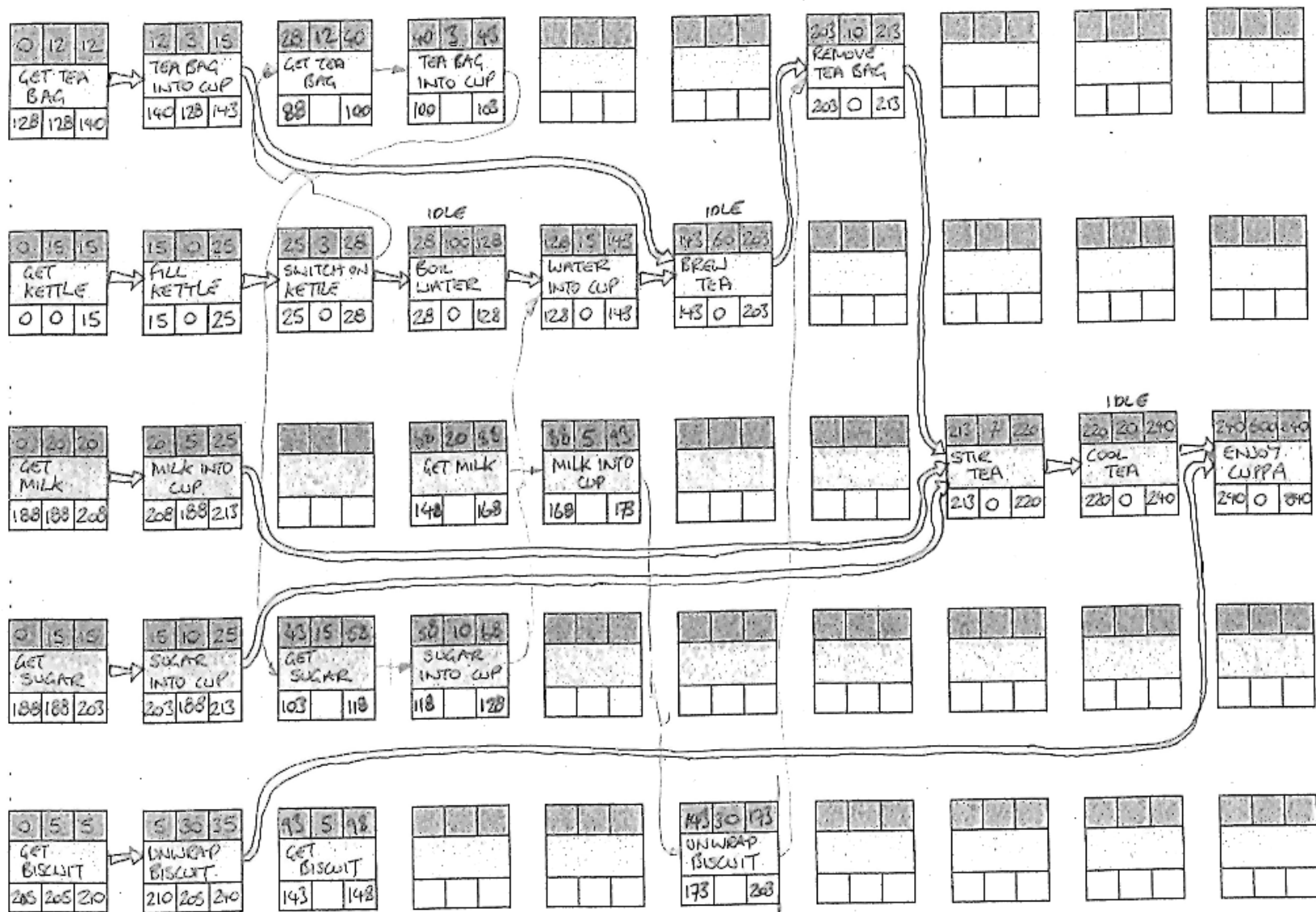


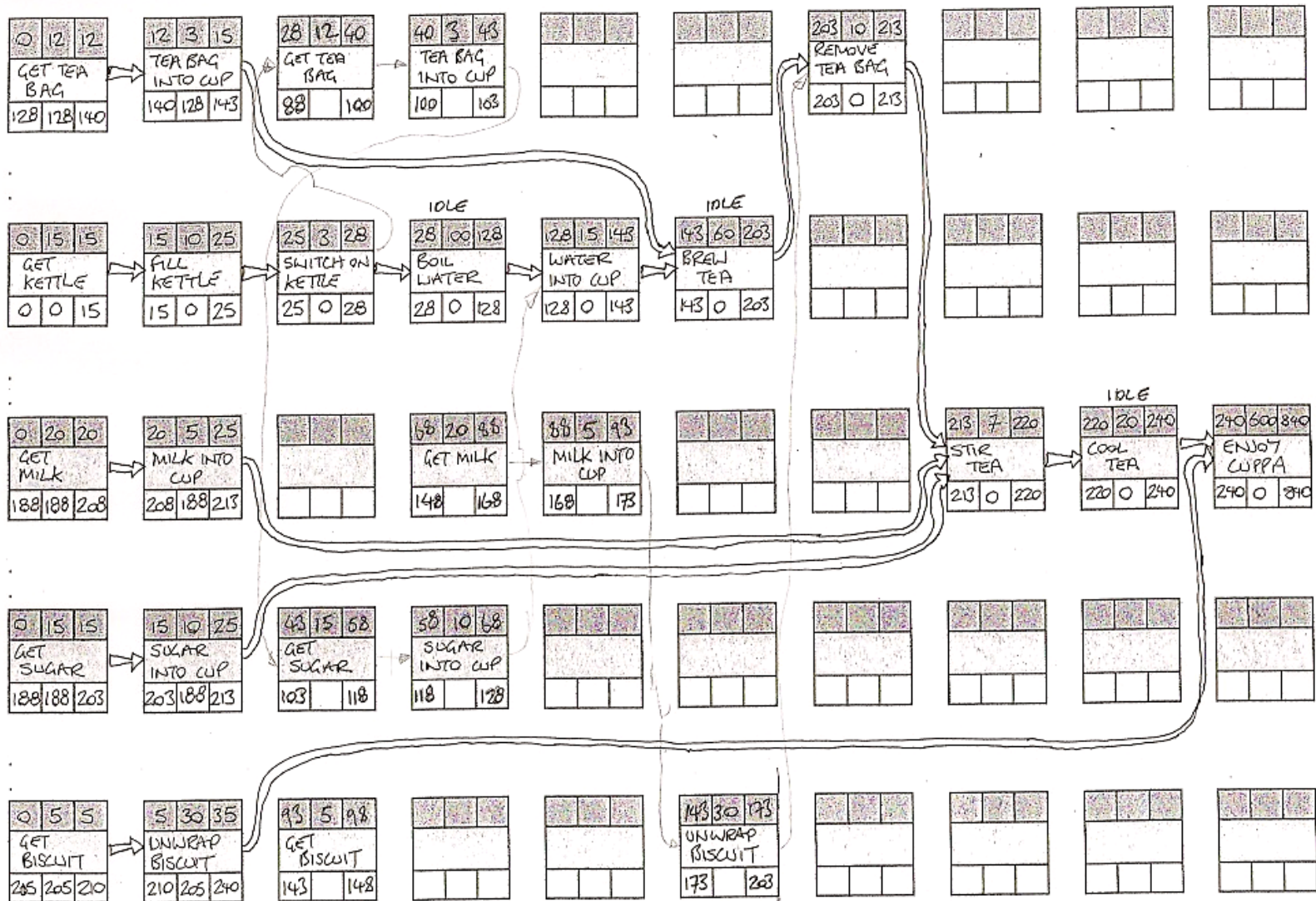
Resource Labour Levelling

- ☐ Identify critical path
 - ☐ Identify 'doing' activities
 - ☐ Identify 'idle' activities
 - ☐ Activities with 'float' can move around and be done while the labour is 'idle'.
 - ☐ Project logic must be retained
 - ☐ Recalculate earliest and latest times, hence find new 'floats'
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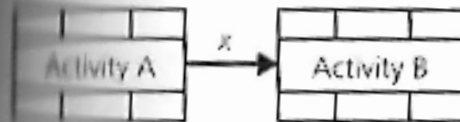




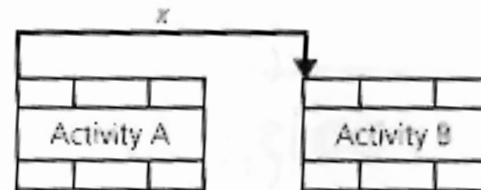




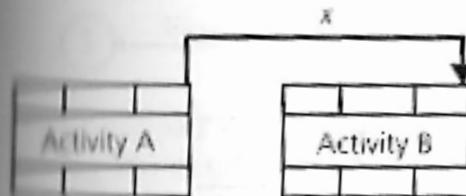
Advanced network notations



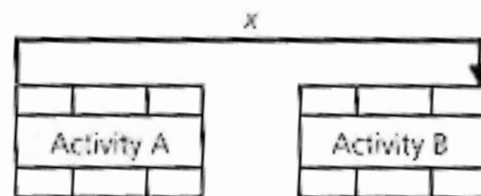
- (a) Finish-to-start. Activity *B* cannot start until x network time units after the finish of Activity *A*. Most constraints are of this type, but x is usually zero.



- (b) Start-to-start. Activity *B* cannot start until x network time units after the start of Activity *A*.



- (c) Finish-to-finish. Activity *B* cannot be finished until x network time units after the finish of Activity *A*.



- (d) Start-to-finish. Activity *B* cannot be finished until x network time units after the start of Activity *A*.

PERT – Programme Evaluation and Review Technique

- Activity Risk Analysis
 - Three estimates required for each activity
 - T (opt) – most optimistic duration
 - T (med) – most likely duration
 - T (pes) – most pessimistic duration
-

PERT

□ Standard probable duration

$$\text{Estimated Time} = \frac{T(\text{opt}) + 4T(\text{men}) + T(\text{pes})}{6}$$

PERT

- Skewed (pessimistic) probable duration

$$\text{Estimated Time} = \frac{T(\text{opt}) + 3T(\text{men}) + 2T(\text{pes})}{6}$$

MILESTONES

Milestones are specific and clearly defined events marking significant stages of a project such as:-

- ❖ Stage payments
- ❖ Issuing of reports etc
- ❖ Completion of prototype build
- ❖ Sign-off for production

Estimates of when these events will occur are updated at each review date

MILESTONE CHARTS

MILESTONE CHARTS

- ❖ Provide an effective control method
 - ❖ Relate one update and review to another
 - ❖ Give a summary plan
 - ❖ Show trends in project slippage
-

Project Gateways

- ❑ Similar to milestones.
 - ❑ To continue the project the 'gatekeeper' must be satisfied.
 - ❑ Technical targets must be met, including administrative tasks.
 - ❑ Commercial targets must be met.
 - ❑ Rigorous process highlights project problems.
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SWANSEA METROPOLITAN UNIVERSITY
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School of Automotive Engineering

PROJECT PLANNING (2)

Mark Sandford

WHY DO WE NEED PROJECT MANAGEMENT?

- To provide the focus of dedicated attention, and dedicated team members.
 - To provide skills specific to the needs of the project, rather than the functional management of the project. Such as:-
 - Control of suppliers and sub-contractors
 - Work break-down structures
 - Planning
 - Budgeting and financial control
-

THE ROLE OF THE PROJECT MANAGER

- ❖ Mini-Business Manager
 - ❖ Accountable for
 - Time
 - Cost
 - Performance
 - ❖ Team Leader and Builder
 - ❖ Planning
 - ❖ Budgeting and Cost Control
 - ❖ Technical Judgement
 - ❖ Diplomat/Negotiator
 - ❖ Control of Sub-Contractors and Suppliers
-

PLANNING PHILOSOPHY

- ❖ Planning is an integral part of the project manager's function
 - ❖ A determination to look ahead constantly
 - ❖ A determination to take decisions and allocate resources based on an integrated plan of action
 - ❖ Involvement of all concerned
 - ❖ Commitment to achieve targets and milestones
 - ❖ Top Management support
-

MINI-BUSINESS

- ❖ Profit responsibility (or budget targets)
 - ❖ Personnel and Human Resources
 - ❖ Customer Relations
 - Recruitment
 - Industrial Relations
 - ❖ Negotiating Contract Variations
 - ❖ Quality Systems
 - ❖ Morale
-

TARGETS

- ❖ Time
 - Meeting Milestones
 - Meeting the Completion Date
 - Predicting Delays
 - Recovery Planning
 - ❖ Costs
 - Meeting Budget
 - Controlling Costs
 - Optimising Income
 - ❖ Performance
 - Meeting Functional Objectives
 - Test Planning
 - Risk Management
 - ❖ Flagging Variances for Senior Management and the team
-

TEAMS

- ❖ Selection
 - ❖ Building
 - ❖ Moral and Motivation
 - ❖ Culture
 - ❖ Fitting Individuals into Roles
 - ❖ Composition
-

PLANNING

- ❖ Costs and Budgets
 - ❖ Duration
 - ❖ Resources and Levelling
 - ❖ Risk Identification
 - ❖ Risk Management
 - ❖ Recovery Planning
-

BUDGETING AND COST CONTROL

- ❖ Time Phased Budget
 - ❖ Cost Data Collection
 - ❖ 'S' Curves
 - ❖ Identification and Prediction of Variances
 - ❖ Cost Control
 - ❖ Purchase Authorisation
 - ❖ Recovery Planning
 - ❖ Flagging of Variances
-

TECHNICAL JUDGEMENT

- ❖ Agreeing Technical Objectives
 - ❖ Agreeing the Test Plan
 - ❖ Setting Standards
 - ❖ Authorisation of Concessions
 - ❖ Chairing Reviews
 - ❖ Authorisation of Release
 - ❖ Vendor Rating
-

Next Week

- ❖ Risk mitigation
 - ❖ Monitoring
 - ❖ Change management
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